

Understanding Disinformation: Definitions, Discussions, and Discourses

William Dance

Department of Linguistics and English Language

Lancaster University

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DECLARATION

This thesis represents my own independent work and has not been previously submitted for the award of another degree at Lancaster University or any other institution. All sources, references, and contributions from others have been properly acknowledged and the work presented is an original contribution to the field of study.

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i. Acknowledgements

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ii. Abstract

Disinformation is an online harm that has affected billions of people worldwide. It has become the focus of political figures, government legislation, educational initiatives, and even an array of television specials and documentaries. Despite its prevalence as a cultural issue, disinformation is not necessarily a well understood phenomenon. The use of other terms such as ‘misinformation’ and ‘fake news’ alongside the many associated, subjective concepts such as propaganda, clickbait, and trolling mean it is a topic characterised by conceptual murkiness.

Disinformation is mediated semiotically. Whether through text, audio, video, or other means, disinformation must be mediated through some communicative mode in order to be disseminated and consumed. Consequently, linguistics has a lot to offer disinformation studies. There is an ever growing body of research that explores how disinformation spreads, the content of disinforming articles, and the actors responsible for its production. A great deal of this research focuses on so-called ‘fake news’. However, to date there have been no studies that explore how the terms ‘disinformation’ and ‘misinformation’ are themselves used in computer-mediated communication.

This thesis seeks to redress this foundational gap in the literature by examining the use of ‘disinformation’, ‘misinformation’, and other terms for false content in naturalistically occurring discourse to inform theory surrounding disinformation. Using an approach grounded in critical corpus assisted discourse studies, this thesis examined two time periods: a historical study ranging from 1470-1690 using the pre-existing Early English Books Online (EEBO) corpus, and a contemporary study from a ten-year period spanning 2012-2021 using custom-made Twitter corpora. Corpus tools such as concordancing, word lists, and keyword lists are used to explore how discourses are constructed surrounding these terms and to analyse them drawing on contextual factors. The purpose of this is to understand firstly how disinformation evolved over the centuries and secondly to understand whether public representations of disinformation as mediated through discourse on social media can add additional insights to dictionary definitions of terms such as ‘disinformation’ and ‘misinformation’.

The historical analysis, in tandem with an analysis of definitions of disinformation, found that several competing terms have been used over centuries but that one of the core components of defining disinformation is intentionality and blame. This analysis led to tangible recommendations for both disinformation scholars and counter-disinformation practitioners for how we should refer to disinformation, and the issues with over-extending terminology. The contemporary social media analysis shows that intentionality manifests itself in many explainable, but not previously reported, ways. Chief among these is that discourses of the term ‘misinformation’ focus heavily on matters related to health, medicine, and science, while discourses of the term ‘disinformation’ focus on disinformation actors and hostile-state information operations. I consistently draw on real-world examples of disinformation to ensure the thesis is grounded in actual examples of disinformation, and not hypothetical scenarios.

I conclude by noting that we need to bear in mind how people represent disinformation and misinformation when we discuss it so that we are not at odds with public understandings of these concepts. Throughout the thesis I provide examples where we can update our current understandings of disinformation using evidence-based analysis from naturalistically occurring discourse and highlight potential policy and educational interventions that could help mitigate the impacts of disinformation.

iii. Preface

In 2019 I undertook a UKRI Policy Internship where I was seconded to the Department for Digital, Culture, Media and Sport (DCMS) to work in the Security and Online Harms (SOH) directorate with the title of Counter Online Manipulation Policy Advisor. The goal of these internships is to embed “students in an environment where they can engage with the process of converting research outputs into policy” (UKRI, 2024) and over the course of 16 weeks I was immersed into a policymaking environment and experienced how government departments, bodies, and agencies develop and implement policy in response to disinformation and manipulation.

Since this time, I have worked with dozens of journalists, factcheckers, civil servants, government departments, intelligence agencies, and other organisations as a counter-disinformation practitioner and consultant. These experiences have taught me a great deal about disinformation and have afforded me insights I could not have generated from my thesis alone. Consequently, this PhD is grounded in extant literature on discourse, disinformation and online harms, but it is not just an exercise in theory. Many of the choices in this thesis have been informed by my practice as a counter-disinformation researcher outside academia, including my time as a policy advisor.

To give an example of what I mean by this, we can focus on my discussions of wellness, alternative health and ‘conspirituality’ in Chapter 3. On the surface this may appear no more or less relevant than other topics in this space. However, I know from working with journalists, factcheckers, and through academic networks, that this topic (and the pipeline from wellness to disinformation) has been a key concern for many counter-disinformation stakeholders. Consequently, I have paid more attention to it, and given more detail to it, than it may appear to demand on the surface. This is just one example of blending my professional experience with the requirements of my thesis.

In the way that this thesis has been co-produced with my experiences outside academia, my hope is that it will then be useful, and relevant to, those same individuals I have worked with in these spaces – chiefly, I hope that it will be a useful resource for people inside and outside academia to understand some of the core questions surrounding disinformation. To conclude, this thesis may be an academic undertaking but it is by no means a solely academic endeavour.

Contents

1. Introduction	1
1.1. Disinformation: Initial Context	2
1.2. Rationale and Original Contribution	3
1.3. Research Questions	3
1.4. Thesis Structure	4
1.5. A Note on Terminology	5
2. Conceptual Framework – Linguistics	6
2.1. Discourse	6
2.2. Critical Approaches to Discourse	8
2.2.1. Power and Ideology	9
2.2.2. Media Power	11
2.3. Computer-mediated Communication	12
2.3.1. Synchronicity, Longevity, Anonymity and Participation	13
2.4. Computer-mediated Discourse	14
2.4.1. Social Media as a Form of CMD	15
2.5. Computer-mediated Discourse Analysis (CMDA)	16
2.5.1. Critical Approaches to Computer Mediated Discourse and Social Media	17
2.6. Corpus Linguistics	18
2.6.1. Corpora and Discourse	19
2.6.1. CL and CDS	19
2.7. Tying up Discourse, CDS, CMC and CMDA	20
2.8. Corpus Approaches to Representations and Discourse	21
2.9. Twitter as a Source of Discourse	22
2.9.1. Studies of Discourse on Twitter	23
2.10. Discourses and Metadiscourses of Disinformation	24
2.10.1. Discourses of Disinformation	24
2.10.2. Metadiscourses of ‘fake news’, ‘disinformation’ and ‘misinformation’	26
2.11 Critical Disinformation Studies	27
3. Conceptualising Disinformation: Definitions, Classifications, and Functions	29
3.1. Definitions and Considerations	29
3.2. Meta-Synthetic Research on Definitions	31
3.3. Bad Information vs False Information	32
3.4. Umbrella Term	34
3.5. Taxonomies and Continua of False Content	34

3.6. Communicative Functions of Terms for Disinformation	35
3.7. Reflections: the Perils of Focusing on Definitions	37
3.8. Section Conclusion.....	38
4. The Disinformation and Misinformation Environment.....	39
4.1. Core Concepts	40
4.1.1. Belief	43
4.1.2. Identity.....	44
4.1.3. Heuristics	45
4.1.4. Emotion	47
4.1.5. Motive.....	47
4.2. Mechanisms of Propagation	50
4.2.1. Algorithms.....	50
4.2.2. Bots	51
4.2.3. Artificial Intelligence	51
4.2.4. Hostile-state Information Operations	54
4.3. Domains and Impacts of Disinformation	57
4.3.1. Political and Electoral Systems	57
4.3.2. Defence and Cybersecurity.....	58
4.3.3. Health and Wellbeing.....	60
4.3.4. Vaccines	63
4.3.5. Conspiracy Theories and Real-world Harms	65
4.4. Global Perspectives	68
4.4.1. The Global North	69
4.4.2. The Global South	70
4.5. Counter-disinformation Approaches.....	72
4.5.1. Education and Literacies.....	72
4.5.2. Does Education Work?.....	74
4.5.3. Literacy and Power	75
4.5.4. *Bunking And Factchecking	75
4.6. Factchecking	76
4.6.1. Benefits of Factchecking.....	79
4.6.2. Criticisms of Factchecking.....	81
4.6.3. Reach	82
4.6.4. Resistance to Correction and Perseverance of False Belief.....	84
4.7. Social Media Interventions	85
4.7.1. Detection	87

4.7.2. Automated Detection	88
4.7.3. Evaluation of Automated Detection	89
4.7.4. Criticisms of Social Media Interventions	91
4.8. Legal Interventions.....	92
4.8.1. Disinformation Regulation and Policy in the UK.....	93
4.9. Post Truth	94
4.10. Conclusion	96
5. Data and Methods	98
5.1. Defining the Data	98
5.1.1. Social Media.....	98
5.1.2. Social Media, Social Networks, and Social Platforms	100
5.1.3. Twitter.....	102
5.1.4. Twitter’s Format.....	102
5.1.5. Anatomy of a tweet	103
5.2. Data – Norms and Characteristics	103
5.2.1. Mentions	103
5.2.2. Retweets	104
5.2.3. Hashtags.....	105
5.3. Twitter Data Collection.....	106
5.3.1. RQ2: Disinformation Discussion Corpus.....	106
5.3.2. RQ3: Misinformation Discussion Corpus	108
5.4. Ethics	108
5.5. Approach to RQ1.....	109
5.5.1. Understanding Disinformation	110
5.5.2. Taxonomy of Disinformation	110
5.5.4. Linguistic History of Disinformation.....	110
5.5.5. Crowdsourced Definition of Disinformation	110
5.5.6. Definitions of Disinformation	113
5.6. Approach to RQ2 and RQ3.....	113
5.6.1. Statistics	113
5.6.2. Process	113
5.7. Reflections on Data and Methods	115
6. Descriptive Analysis of RQ2 and RQ3 Results	116
6.1. Wordlists	116
6.2. Keywords.....	120
6.3. Disinformation and Misinformation Keywords	120

6.4. Keywords: Results.....	121
6.4.1. Disinformation Descriptive Results	124
6.4.2. Misinformation Descriptive Results	126
6.5. Section Conclusion.....	127
7. A History of Disinformation	128
7.1. Understanding Disinformation.....	128
7.1.1. A Brief Etymology of ‘Disinformation’	129
7.1.2. A Brief Etymology of ‘Misinformation’	131
7.1.3. A Brief Etymology of ‘Fake News’	132
7.1.4. Disinformation and News.....	132
7.1.5. Disinformation Versus Misinformation.....	134
7.2. A Taxonomy of Disinformation	134
7.2.1. Misreported News	134
7.2.2. Satire	135
7.2.3. Bias	138
7.2.4. Selective Reporting.....	139
7.2.5. A Disinforming Cline	140
7.3. A Linguistic History of Disinforming Terms.....	141
7.3.1. Helsinki Corpus of English Texts	142
7.3.2. EEBO	142
7.3.3. False Becomes Fake	146
7.3.4. Fake News in the Age of Social Media	147
7.4. A Crowdsourced Definition of Disinformation.....	150
7.4.1. Findings	150
7.4.2. Quantitative Analysis	150
7.4.3. Qualitative Analysis	152
7.5. Definitions used in this thesis	156
7.5.1. Disinformation	156
7.5.2. Misinformation	157
7.6. Conclusion	157
8. Discourses of Disinformation.....	159
8.1. Comparison of Results.....	159
8.2. Actor – Country	161
8.2.1. Disinformation Sources	162
8.2.2. Disinformation Targets	169
8.3. Operations – Implementation	171

8.3.1 How are disinformation campaigns described?	171
8.3.2. What is being influenced?	173
8.4. Warfare and Defence	177
8.4.1. Spy, spies and spying	178
8.4.2. Security and cybersecurity	181
8.4.3. Weapon	181
8.5. Conclusion	183
9. Discourses of Misinformation	185
9.1. Medical	185
9.1.1. Reproductive Issues	186
9.1.2. Healthcare Professionals	189
9.1.3. Misinformation, Health, and Blame	193
9.2. Means	194
9.2.1. Specific Means	195
9.2.2. Tech and Social Platforms	198
9.2.3. Digital Communication	199
9.3. Effects	201
9.3.1. Misinformation and Social Issues	202
9.3.2. ‘Stigma’ and ‘Bigotry’	203
9.4. Response	208
9.4.1. Public Opinion and Public Policy	208
9.4.2. Regulation	209
9.4.3. Factchecking	212
9.4.4. Misinformation and Metaphors	215
9.5. Conclusion	216
10. Conclusions	218
10.1. Summary of Findings	218
10.1.1. Comparison of RQs 2 and 3	221
10.2. Critical Reflections on Theory and Method	221
10.3. Limitations	223
10.4. Future Research	223
10.4.1. Similarity	223
10.4.2. Temporal Analysis	224
10.5. Concluding Remarks	224
Policy Insights	226
Glossary	228

Appendix A: Tweet and Token Counts	231
Appendix B: Coding Scheme.....	234
Appendix C: Wordlists	236
Table 112 Disinformation Corpus – 200 Most Frequent Words	237
Table 113 Misinformation Corpus – 200 Most Frequent Words	239
Appendix D: Disinformation Definitions	245
Appendix E: Disinformation keyword list	249
Appendix F: Misinformation keyword list	289
Appendix G: Actor-Country Codes	317
References	320

Figures

Figure 1 Types of social media use. From Kaye, 2021, p. 3	16
Figure 2 Types of Information Disorder, from Wardle and Derakhshan (2017) (np).....	33
Figure 3 7 Types of Mis- and Disinformation, from Wardle, 2017	35
Figure 4 US and Europe participants self-reporting of disinformation encounters.....	41
Figure 5 An example of ChatGPT producing disinformation on request: Cat burglary	53
Figure 6 An example of ChatGPT producing disinformation on request: Election fraud	53
Figure 7 Screenshot of Abrams' Twitter homepage on July 18, 2017. (from Xia et al., 2021, p. 1657).....	56
Figure 8 Examples of early Pizzagate disinformation	67
Figure 9 Headline from The Daily Star on 26 March 2020	68
Figure 10 Global internet penetration rate from 2009 to 2023, by region (International Telecommunication Union)	70
Figure 11 Percentage increase in global internet penetration rate from 2010 to 2023, by region (International Telecommunication Union)	71
Figure 12 UNESCO's #ThinkBeforeSharing campaign (UNESCO, 2024)	76
Figure 13 Animal Politico's 'El Sabueso' Rating System (Animal Politico, 2024).....	77
Figure 14 The Washington Post's Pinocchio rating scale (The Washington Post, 2024)	78
Figure 15 X and Facebook's factchecking labels	79
Figure 16 Disparity in audiences between an X post and X Community Note factchecks	83
Figure 17 Example of disinformation detection guides. From left to right: British Council, Childline, International Federation of Library Associations and Institutions	87
Figure 18 Definition of 'post', 'truth, and 'post truth'	95
Figure 19 Distribution of sources for definitions of disinformation/fake news	111
Figure 20 Definitions of disinformation/fake news by year	112
Figure 21 Keyword codebook	121
Figure 22 Disinformation - Parent Codes Distribution.....	123
Figure 23 Misinformation - Parent Codes Distribution	124
Figure 24 Apple iPhone Notes document screenshot.....	133
Figure 25 Disproven Natural News headline	133
Figure 26 Examples of premature obituaries.....	135
Figure 27 Breaking Point (UKIP poster).....	137
Figure 28 Two satirical articles shared to Facebook	137
Figure 29 A disinforming cline	140
Figure 30 Use of fake news in Google Books English, 2021	147
Figure 31 Google Search trends for 'fake news' in England	148
Figure 32 Use of 'fake news' in NOW corpus.....	149
Figure 33 Comparison of Russian/Chinese/Iranian + disinformation in the Disinformation Corpus	163
Figure 34 Google Trends results showing Google query interest in three terms	165
Figure 35 Collocates of spy/spies/spying	179
Figure 36 Tweets containing 'celebrity' or 'celebrities' over time in the Misinformation Corpus	196

Tables

Table 1 Strategies of using the term 'fake news', from Ross and Rivers (2018)	36
Table 2 Types of heuristics	45
Table 3 Motivations for the creation of disinformation	48
Table 4 Types of security	58
Table 5 Types of literacies	72
Table 6 Types of backfire effect	84
Table 7 Social media interventions	85
Table 8 Top ten social media platforms ranked by monthly actives users (MAUs) (Statista, 2023)	90
Table 9 Audiovisual media on social media platforms	90
Table 10 Definitions of social media, social network, and social networking	100
Table 11 Social media, network(ing), and platforms.....	100
Table 12 Definitions of platform and publisher.....	101
Table 13 Definition of social media and platform used in this thesis	101
Table 14 Example of duplicate tweets in the RQ2 corpus.....	106
Table 15 Disinformation Corpus Size.....	107
Table 16 Focuses of RQ1	109
Table 17 Sources of disinformation/fake news definitions	111
Table 18 Exclusive Content Words for DWL and MWL.....	117
Table 19 Examples of DWL Exclusive Content Word.....	118
Table 20 Use of 'fed' in the Disinformation Corpus	119
Table 21 E-MWL words relating to health and science	120
Table 22 Disinformation Keyword Themes Results	121
Table 23 Misinformation Keyword Themes Results.....	122
Table 24 'Actor' code frequencies in the Disinformation Corpus	124
Table 25 'Specific Reference' code frequencies in the Disinformation Corpus.....	125
Table 26 'Operations' code frequencies in the Disinformation Corpus	125
Table 27 'Features of disinformation' code frequencies in the Disinformation Corpus	125
Table 28 'Means' code frequencies in the Misinformation Corpus.....	126
Table 29 'Health' code frequencies in the Misinformation Corpus.....	126
Table 30 'Actor' code frequencies in the Misinformation Corpus.....	126
Table 31 Items for Qualitative Analysis	127
Table 32 Uses for 'disinformation' and 'disinform'	130
Table 33 Example of fabricated headlines	130
Table 34 Uses of 'misinformation' and 'misinform'	131
Table 35 A comparison of properties of disinformation and misinformation	134
Table 36 Headlines using extreme claims to carry out satire.....	136
Table 37 Suspect Satirical Articles	136
Table 38 Varying News Bias.....	139
Table 39 Historical corpora	141
Table 40 Distribution of 'false news' in EEBO	141
Table 41 Earliest hits for 'false [communication] in the Helsinki Corpus.....	142
Table 42 Example of "false news" in the EEBO corpus	143
Table 43 Earliest uses of "false news" in the EEBO corpus	143
Table 44 Near synonyms for "false news" in the EEBO corpus.....	143
Table 45 A possible contrast between written and spoken information	144

Table 46 References to written ‘false news’ in the EEBO corpus	144
Table 47 Comparison of EEBO text to tweets expressing similar sentiment	145
Table 48 Earliest uses of ‘fake news’	146
Table 49 The Definitions Corpus sorted by USAS (top ten semantic tags ranked by frequency)	151
Table 50 Uses of Q2.1 in the Definitions Corpus	151
Table 51 Definitions of disinformation that include motivation	153
Table 52 Frequencies of ‘disinform’ and ‘disinformation’ across several corpora	153
Table 53 Definitions that propose a retronym to ‘false news’	154
Table 54 Lowercase disinformation and uppercase Disinformation	155
Table 55 Comparison of Disinformation Corpus and Misinformation Corpus keywords	159
Table 56 Examples of disinformation originating from/affecting area	161
Table 57 Occurrences of [country adjective] + ‘disinformation’ in the Disinformation Corpus	162
Table 58 Alternative queries to adjectival country bigrams	162
Table 59 Use of ‘Chinese’ and ‘Iranian’ alongside ‘Russian’ during peak periods of usage.....	164
Table 60 Uses of ‘Russian disinformation’	165
Table 61 Metacommentary of the term ‘Russian disinformation’	167
Table 62 Concessive use of ‘Russian disinformation’	168
Table 63 Cursory search of ‘targeting’ in the Disinformation Corpus	169
Table 64 Keywords in Operations_Implementation that refer to targeting	169
Table 65 Actor_Country keywords that follow targeting words	170
Table 66 Most frequent bigrams of ‘disinformation’ in the Disinformation Corpus	171
Table 67 Collocation of ‘disinformation campaign/s’ denoting size	172
Table 68 Concordances of size collocates	172
Table 69 Uses of superlative ‘biggest’	172
Table 70 Examples of complementary concepts of influence	173
Table 71 Modifiers of ‘influence’	175
Table 72 Uses of influence, v.	176
Table 73 Tweets concerning influence over thoughts and actions	176
Table 74 Keywords in the ‘Warfare and defence’ code	178
Table 75 Uses of ‘chief’	179
Table 76 Concordances of ‘spy’	180
Table 77 Uses of ‘security’ and ‘cybersecurity’	181
Table 78 Use of ‘weapon’	182
Table 79 Weapon metaphors of disinformation.....	183
Table 80 Medical keywords across corpora.....	185
Table 81 Most over-represented tokens in the Medical - General code	186
Table 82 Keywords denoting reproductive issues	186
Table 83 Use of abortion/s	187
Table 84 Use of ‘infertility’	188
Table 85 Discussion of vaccination and infertility.....	189
Table 86 Misinformation possibly contributing to hesitancy.....	189
Table 87 Keywords in Medical_General describing medical professional ranked by log ratio ..	190
Table 88 Comments on diminished belief in experts	193
Table 89 Breakdown of Operations_Means	195
Table 90 Themes within Operations_Means keywords.....	195
Table 91 Prototypical use of ‘travels’	195
Table 92 Tweets containing ‘celebrity’ or ‘celebrities’ over time.....	196

Table 93 Celebrities blamed for distributing misinformation.....	197
Table 94 Discussions of celebrities and responsibility.....	198
Table 95 References to digital communication	199
Table 96 Use of forward/s/ing.....	199
Table 97 Examples of 'clicks' as a metonym for funding models.....	200
Table 98 Effects keyword results	201
Table 99 Keywords denoting social topics and issues	202
Table 100 Definitions of 'bigotry' and 'stigma'	203
Table 101 Examples of misinformation as stigma.....	203
Table 102 Discussions of social issues.....	205
Table 103 Types of bigotry.....	205
Table 104 Digital contexts and social outcomes of misinformation.....	206
Table 105 Key Challenges of Misinformation Legislation	209
Table 106 Examples of the token 'regulator'	210
Table 107 Criticism of regulators.....	211
Table 108 Frequency of the keywords 'checkers' and 'checking' as individual tokens.....	212
Table 109 Frequency of 'checkers' and 'checking' in phrases	213
Table 110 Calls for increased factchecking.....	213
Table 111 Discussions of health topics and factcheckers.....	214
Table 112 Disinformation Corpus – 200 Most Frequent Words	237
Table 113 Misinformation Corpus – 200 Most Frequent Words	239
Table 114 Disinformation Corpus – Most Frequent Content Words	241
Table 115 Misinformation Corpus – Most Frequent Content Words.....	243
Table 116 Disinformation Corpus Keywords	249
Table 117 Misinformation Corpus Keywords	289

1. Introduction

The bias of corrupt passions and the errors of misinformation are obstacles to self-development, which few surmount.

James Clement Moffat, 'An Introduction to the Study of Aesthetics'. (Moffat, 1856)

On 19 June 2017, Darren Osborne¹ committed an act of domestic terrorism when he intentionally drove a hired van into a gathering of Muslims near Finsbury Park Mosque in central London (Schulze & Hassan, 2018). The premeditated Islamophobic attack that intentionally targeted Muslim worshippers following night time prayers resulted in the death of Makram Ali, 51, and the injury of eleven others (Muslim Engagement and Development, 2018).

Osborne was radicalised by a television dramatization of so-called 'Muslim grooming gangs' and in the weeks preceding the attack, Osborne carried out frenzied research of anti-Muslim content online (Woolwich Crown Court, 2018). According to Osborne's family, his Islamophobic views developed in a "matter of weeks" (Tidy, 2018). Osborne was unanimously convicted of terrorism-related murder and attempted murder in Woolwich Crown Court and in February 2018 was sentenced to a life imprisonment with a minimum term of 43 years.

In the sentencing remarks, Mrs Justice Cheema-Grubb concluded of the perpetrator:

"You were rapidly radicalised over the internet encountering and consuming material put out in this country and the USA from those determined to spread hatred of Muslims on the basis of their religion. The terrorist atrocities perpetrated by extremist Islamists fuelled your rage. Over the space of a month or so your mind-set became one of malevolent hatred. You allowed your mind to be poisoned by those who claim to be leaders. [...] You had not been radicalised over a long period of time but your rapid decline into irrational hatred of all Muslims turned you a danger to the public."

(Woolwich Crown Court, 2018)

One of the articles Osborne visited, the court was told, was titled "Proof: Muslims celebrated terror attack in London" from the website InfoWars. InfoWars is known for publishing extreme-right [disinformation](#) and conspiracy theories (Maresh-Fuehrer & Gurney, 2021) and its then owner Alex Jones is a thought leader in the far-right community. This article, which claimed that Muslims around the world celebrated the November 2015 Paris attacks, was false and actually showed footage of British Pakistanis celebrating a cricket victory in 2009 (Sims, 2015; Channel 4 FactCheck, 2017).

The article, and others like it, were nonetheless a contributory factor in the 'malevolent' and 'irrational' hatred that led to the targeted attack and murder of Muslims, and a reminder that disinformation can contribute to real-world harms. There are, unfortunately, countless

¹ I have decided to name Osborne here, not to lionise him by giving him agency, but to acknowledge that this is a real person, who led a real life, and yet still decided to commit an atrocious act due to being disinformed. The human cost of those radicalised by disinformation can be extreme, and I feel in this context it is important to emphasise that. This is why I have also decided to name Makram Ali who died in the attack.

additional examples of disinformation causing harm and death worldwide. This includes COVID denial in the United States (Islam et al., 2020), self-medication poisoning in Iran (Aghababaeian et al., 2020), mob justice in India (Gowen, 2018), ethnic killings in Nigeria (Adegoke, 2018), immolation attacks in Mexico (Martínez, 2018), and government-endorsed murders of human rights activists in the Philippines (Guest, 2020).

There are many ways to highlight the effects of disinformation ranging from social, economic, political, health, and other ramifications, but its impacts are most stark when we see the loss of human life as a result (whether in part or full) of false content. Given the cost of human life that can be caused by disinformation, it is important to understand it as a concept and as a practice in the real world.

1.1. Disinformation: Initial Context

Disinformation, or ‘[fake news](#)’ as it is often known, has become a popular topic in recent years. There are various ways to demonstrate its impact in society, and much cited are the Collins Dictionary naming ‘fake news’ their word of the year in 2017 (Collins Dictionary, 2017), Donald Trump’s co-opting and popularisation of the term (Tamul et al., 2020), and various reports that during the US 2016 presidential election disinforming stories received millions of shares (Allcott & Gentzkow, 2017), bolstered by hostile-state information operations originating from Russia, Iran, China, and others (Christiansen et al., 2020)

Disinformation is a topic that has become firmly established in everyday, public consciousness and has become a pressing issue culturally across the world. Governing bodies around the globe have sought to tackle disinformation and its spread (Funke, 2021) and it has become the focus of charities such as Full Fact, non-profit non-governmental organisations such as the News Literacy Project, educational initiatives such as the European Union co-funded SMILES project, and the target of newsrooms such as the BBC’s ‘Beyond Fake News’ project. Research demonstrates a keen public awareness of this topic, with a UNESCO/IPSOS survey of 16 countries showing that 85% of people (16 countries’ average) are concerned about the impact and influence of disinformation in their respective countries (IPSOS and UNESCO, 2023).

Disinformation is also, at its core, a deeply complex concept. Terms such as ‘disinformation’, ‘[misinformation](#)’, and ‘fake news’ are used for various means, such as to disparage others, discredit organisations, and to counter cognitive dissonance. They have experienced rapid increases in usage in public domains, government domains, and academic domains, leading to a zone which has been flooded by mention of these concepts. There are many overlapping but also disparate reasons for why disinformation may exist. Intentionally false content can be created and disseminated for political gains, geopolitical reasons, for profit making, for ideological motivations, for humour and fun, and for myriad other reasons. The complex background to disinformation has meant that despite (or perhaps *because of*) their increased usage over time by the public, as concepts they are not necessarily well understood by the public, complexifying an already complex topic.

One of the key issues surrounding disinformation is conceptual. What is classed as disinformation, what is not disinformation, and what about the infinite number of borderline cases that might fit into a complementary associated concept of disinformation or may have us questioning what ‘truth’ even means? This is because the truth is increasingly becoming subjective, and therefore disinformation is becoming increasingly subjective too.

1.2. Rationale and Original Contribution

Disinformation can contribute to real-world harms and a great deal of resources have been committed to understanding and tackling it globally both inside and outside academia. This makes it important to understand how people view and represent disinformation in everyday, unelicited communication. There are various reasons for this.

The first is academic. There is a research gap in the extant literature where corpus-based [discourse](#) analytic approaches have not been used to explore discourses surrounding the terms ‘disinformation’ and ‘misinformation’. The reality is that “research into fake news discourse remains limited” (Wright, 2021, p. 4), and research into the discourses of disinformation is virtually non-existent, with studies favouring the more popular term ‘fake news’. This is a considerable oversight given these terms’ popularity and their increasing importance in the world. Consequently, this thesis is the first large-scale study exploring discourses of the terms ‘misinformation’ and ‘disinformation’ on the social media platform Twitter.

Additionally, the history of the terms ‘misinformation’ and ‘disinformation’ is poorly understood and “only a small collection of isolated historical analyses and case studies spread across several disciplines has directly addressed the topic in scholarly contexts” (Freelon & Wells, 2020, p. 148). This thesis seeks to redress this issue by providing a comprehensive, diachronic study of ‘disinformation’ and associated terms from 1470s-1690 using the EEBO corpus. It is difficult to study a topic without the foundational underpinning of understanding its history, and this analysis seeks to provide that.

The second motivation is one of a policy nature. Despite the prevalence of these terms, research into discourses of the terms ‘disinformation’ and ‘misinformation’ is lacking. However, these are the terms that are preferred by governments, NGOs, educators, etc. to avoid the semantically loaded nature of ‘fake news’. Consequently, policymakers have a very small pool of research to draw on when it comes to understanding how the public use these terms and the associated discourses surrounding them. This thesis provides evidence-based analysis for policymakers who are interested in understanding disinformation’s history and contemporary usage in real-world, naturalistically occurring language. The aim of this is to assist policymakers in creating policy measures that are not disparate from the public but are instead informed by them.

This PhD started off very specific in scope, seeking to identify and analyse instances of disinformation sharing on social media. However, as the thesis progressed it became clear that some of the foundational literature in this field simply did not exist, especially within the discipline of linguistics. Consequently, I decided to make the thesis much broader to address some of those fundamental, yet unanswered, questions regarding the historical and contemporary usage of the terms ‘disinformation’, ‘misinformation’, ‘fake news’, and others.

1.3. Research Questions

This thesis uses corpus-based critical discourse analysis and computer-mediated discourse analysis to analyse the terms ‘disinformation’ and ‘misinformation’ in context. The thesis does not apply a single theoretical framework but instead builds a functional toolkit of theoretical concepts, applying them as needed to describe or explain linguistic patterns in the data (see [chapter 2](#) and [chapter 5](#) for details).

The overall research question that this thesis asks is:

How do we talk about disinformation?

The purpose of this thesis is to explore how disinformation, and associated concepts, are represented through language in the form of discourse. The 'we' in this question refers to the varied data sources this thesis draws from, including academics, historical archives, charities, governments, social media users, and others.

This larger overarching investigation is then divided according to three research questions:

1. What is disinformation? (Chapter 7)

This research question was originally intended to be a literature review that surveyed the literature on diachronic approaches to disinformation and misinformation. However, on conducting the literature review it became immediately apparent that an academic body of work in this space simply did not exist. Consequently, this research question combines historical analysis with contemporary analysis of uses of the term 'disinformation' to understand how disinformation has been used in context over a centuries-long period and whether this differs from dictionary definitions of disinformation.

RQ1 aims to uncover patterns in how disinformation has evolved as a concept over time. The goal of this is to provide a foundation for understanding how historical uses may influence modern interpretations and how shifts in context have shaped the way disinformation is framed in discourse. Consequently, this approach seeks to bridge the gap between historical and contemporary understandings of disinformation, providing a usage-based perspective on its complexity by drawing on multiple sources, and contextualising the later social media chapters.

RQs 2 and 3 are counterparts to each other:

2. What are the discourses of the term 'disinformation' on Twitter? (Chapter 8)

3. What are the discourses of the term 'misinformation' on Twitter? (Chapter 9)

These chapters present qualitative analysis of the quantitative keyword findings derived from the comparative analysis of a corpus of tweets containing the term 'disinformation' and a corpus of tweets containing the term 'misinformation'. The purpose of these research questions is to examine organic, naturalistically occurring discourses to inspect the finer grained meanings associated with each term. Specifically, the aim is to understand if these terms' usage displays patterns not previously identified in the literature. The guiding principle to this analysis is that we must analyse real-world uses of words to fully understand them.

By focusing on Twitter data, I seek to explore how social media users actively negotiate and reshape the meanings of these terms in public discursive spaces. This approach also sheds light on how discourses of the terms 'disinformation' and 'misinformation' intersect with broader societal issues, such as politics, health, and media trust. The findings contribute to understanding how these terms may be misunderstood, weaponised, and criticised in real-time to assess their roles in shaping contemporary debates.

1.4. Thesis Structure

Chapter 2 establishes a theoretical underpinning to the thesis by reviewing the relevant theory and approaches in discourse, critical discourse analysis, and computer mediated communication. Chapter 2 ends by giving an overview of the state-of-the-art of corpus-based representations research and linguistic approaches to disinformation. This chapter focuses on

linguistics. Chapter 3 bridges the linguistics discussion and later disinformation discussions by providing conceptualisations of what disinformation is (and is not) to provide definitional underpinnings for the rest of the thesis.

Chapter 4 focuses on disinformation and social media, and provides the context and background to disinformation, misinformation, and 'fake news'. More than just a review of the literature, it brings in real-world examples of disinformation to demonstrate how this is much more than a theoretical issue. The purpose of this chapter is to clarify key terminology and provide the context for the analysis chapters.

Chapter 5 discusses the data collection processes and methods used in this thesis. It introduces Twitter as a data source and considers the benefits and drawbacks of using a corpus-based discourse analysis approach. Chapter 6 shows the results from the keyword analysis and provides details of the qualitative keyword coding.

Chapter 7 answers RQ1 'What is disinformation?'. To do this it takes a varied approach combining historical corpora with custom collected corpora to understand the complexities of terms such as 'disinformation', 'misinformation' and 'fake news'. The analyses help to disentangle some of the key theory surrounding the terms and presents figures and definitions to help understand disinformation. Chapter 8 uses the keyword analysis to discuss the discourses that surround the term 'disinformation' on the social media platform Twitter, while Chapter 9 explores discourses of the term 'misinformation', answering RQ2 and RQ3 respectively. These chapters operationalise the functional analytic toolkit laid out in Chapters 2 and 5 to explore some of the keyword groupings that are over-represented in each corpus to try and understand how these terms are represented online.

The final part of the main thesis structure is Chapter 10 which concludes my thesis by summarising my main findings, discussing the implications these have for both the current literature and for counter-disinformation practitioners, and critically reflecting on my methods and analysis, highlighting what was beyond the scope of my thesis. Following this, I offer a range of Policy Insights derived from my literature review and analysis. The purpose of this section is to offer up evidence-based suggestions for policy interventions to policymakers, educators and other stakeholders.

1.5. A Note on Terminology

Throughout this thesis, I will use the term 'disinformation' as the preferred term in general discussions (as opposed to 'misinformation'). This is because the term 'disinformation', like the verb *disinform*, allows us to acknowledge disinformation alongside the "context in which it is presented – and the narratives, networks and actors behind it" (GDI, 2019). Using this term emphasises the intentional and systematic aspects of misleading information, distinguishing it from the unintentional belief in false information (misinformation) and prioritises the need to understand the structural dimensions of false information dissemination. In doing this, it draws attention to the active role of disinformation actors in crafting and amplifying false narratives to achieve specific political, social, economic, or other goals. In other words, disinformation does not exist in a vacuum, and this allows us to acknowledge that.

2. Conceptual Framework – Linguistics

[...] and misinformation made of words which he should speak;

William Cobbett, 'Parliamentary History of England'.
(Cobbett, 1806)

In this chapter I explore the theory and relevant background literature that underpins the analysis later in this thesis. Namely, I will discuss: [discourse](#), [computer-mediated communication](#), and relevant research applying these to disinformation.

2.1. Discourse

This thesis is titled *Understanding Disinformation: Definitions, Discussions, and Discourses*, but, what is discourse? In this section I will define this notion, revolving around three core conceptualisations of discourse. The first is:

A set of meanings, metaphors, representations, images, stories, statements and so on that in some way together produce a particular version of events [...] Surrounding any one object, event, person etc., there may be a variety of different discourses, each with a different story to tell about the world, a different way of representing it to the world.

(Burr, 1995, p. 48)

Discourse is the representation of the world through language. The term discourse has been around for centuries (OED, 2023c), but it was Benveniste (1966) who proposed *discourse* as distinct from *language*. The former describes utterances which form part of social interactions and have personal communicative purposes, while the latter simply describes a system of communication (pp. 67-68). To draw on Benveniste's (1966, p. 52) distinction between the language of bees and humans: both bees and humans have language, but bees do not construct discourses (to the best of our knowledge).

Discourse is further defined by Candlin and Maley (1997) as "language in use [...] which is socially situated" (p. 8), where 'in use' is used to describe discourse as naturally occurring language use, although such language use may be partially or entirely scripted (Semino, 2008, p. 29). Studies of discourse investigate its occurrence in different contexts and how different factors affect its production and [reception](#).

Discourse is social. It is socially constructed and comprises sets of interrelated statements that (re)create the world in some way and are shaped by their social conditions (Fairclough, 1989). As Fairclough (1989) notes, language is both a social process *and* a socially conditioned process (p. 22) that gives rise to discourse that, to paraphrase Burr, represents the world through linguistic means (Burr, 1995). Discourses are "socially constructed ways of knowing some aspect of reality" (Van Leeuwen, 2009, p. 138) and the statements we make exist in, and should not be decoupled from, historical, social and cultural contexts (Mackenzie & Murray, 2021). As Gee (2015a) notes, understanding language requires understanding the world, and the social practices that frame what a speaker is trying to do with their language.

In Foucault's (1972) definition, discourse is broken down into three components. This is the second core conceptualisation:

[1] sometimes as the general domain of all statements, [2] sometimes as an individualizable group of statements, and [3] sometimes as a regulated practice that accounts for a certain number of statements.

(Foucault, 1972, p. 80, numeration added)

The first sense refers in general to language that is socially situated and acts as a social process in interaction, distinct to language alone. The second refers to statements that can be organised into a group of wider statements. For example, natural disaster discourses are not necessarily defined nor do producers of these discourses necessarily follow rules in how they communicate, but their communications can be labelled as ‘natural disaster discourses’ when they concern such events. Finally, Foucault refers to a ‘regulated practice’, emphasising discourses as a result of conventionalised linguistic practices that characterise a certain way of representing the world. For example, a collection of PhD theses could be labelled as an ‘academic discourse’ because they are written in such a way that the speakers choose from a specific set of linguistic resources where there are conventions. We might also call this a discourse type or a discourse practice (Koller, 2009). Although discourses are made up of signs, they should not be treated as “groups of signs” and instead should be viewed as “practices that systematically form the objects of which they speak” (Foucault, 1972, p. 49).

Discourses are “constantly changing, interacting with each other, breaking off and merging” (Baker, 2023a, p. 5) and there is no defined, delimited number of discourses. This also highlights another element: discourses can be countable. In other words, there can be multiple, sometimes competing discourses, to represent the same reality that can be “made and remade” over time by speakers (Cameron, 2001, p. 15). Related to this is that discourse is cumulative. A single utterance does not constitute a discourse, nor does representing the world in a certain way necessarily mean the utterance belongs to a certain discourse, but discourses develop, evolve and cascade in a way that means the statements cumulatively establish the discourse (Taylor, 2020, 2021). In other words, “a discourse does not consist of one statement, but of several statements working together” (Hall, 2007, p. 56); a discourse is greater than the sum of its parts. To this end, discourses are often metaphorized as *strands* (Wodak, 2007), and “different strands of language organize these things in competing, contradictory ways” (Parker, 1997, p. 480).

Similarly, discourses are contextually bound but not contextually constrained, i.e. they are influenced but not determined by their contexts (Van Dijk, 2006). Contexts do not entail discourses, in that while discourses are influenced by context, the discourses that emerges from a given context can be various.

Alongside defining what discourse is, it is important to understand what discourse *is not*. The third and final core conceptualisation of discourse is as follows:

discourses are not valid descriptions of people’s ‘beliefs’ or ‘opinions’ and they cannot be taken as representing an inner, essential aspect of identity such as personality or attitude. Instead they are connected to practices and structures that are lived out in society from day to day.

(Baker, 2023a, p. 5)

The reality that discourses change, are cumulative, can co-exist, and multiple discourse may exist for the same reality, shows that they are distinct from beliefs and opinions because they

are a version of the world that we put forth that is affected by context such as the words we know or the social situation we embed our utterances into. As Van Dijk (1998) notes, opinions and beliefs are mental representations which everyone holds, whereas discourses are verbal representations which are optional (p. 8). Discourse is not a synecdoche for thoughts, feelings, beliefs, opinions, or attitudes; it is the expression and representation of these through linguistic means.

While they are of course influenced by opinions and beliefs, it is wrong to say that discourses are the same as the opinions and beliefs that people hold – discourses are representations. This is confirmed by the fact that a belief or opinion can remain constant over time but the discourses representing it can change considerably, because discourse is “always historical, that is, it is connected synchronically and diachronically with other communicative events which are happening at the same time or which have happened before” (Wodak & Ludwig, 1999, pp. 12-13).

The word *representation* has become core to the description of discourse here, and a useful way of understanding it is simply to look at a standard dictionary definition. A representation is the “the description or portrayal of someone or something in a particular way” (Oxford Languages, 2024). If we break this down and relate it to the discussions above, a representation is not the referent itself but a way of intersubjectively depicting a referent (e.g. an object, event, feeling, etc.). This ‘particular’ way inevitably omits other potential ways to depict something, and therefore a representation is just one perspective (Bakhtin, 1981). The inclusions and omissions of a representation are influenced by its social context and representations embody “specific assumptions, judgments, contentions, dispositions, and capabilities” (Dryzek & Niemeyer, 2008, p. 481). It is these individual verbal representations that together form discourses.

To summarise the key points here, discourses draw on multiple linguistic and social resources (conceptualisation 1), can refer to different things both as count and non-count nouns with varying specificity (conceptualisation 2), and are different to, albeit influenced by, opinions and beliefs (conceptualisation 3). These features of discourse co-exist simultaneously, and a discourse can be a set of shared linguistic resources that people access as well as a form of social interaction. Discourses are made up of varying representations of the real world.

2.2. Critical Approaches to Discourse

While discourse is the use of language in context, and the use of particular linguistic resources and conventions to convey socially situated meaning, the choices we make are influenced by more than just our immediate context (e.g., who we are interacting with and how) but also wider patterns of communication and sociohistorical context.

Critical approaches to discourse (critical discourse studies [CDS]; critical discourse analysis [CDA]) are a way of viewing language that emphasises the “relationship between a particular discursive event and the situation(s), institution(s) and social structure(s) which frame it” (Fairclough & Wodak, 1997, p. 258). Critical approaches to discourse view language as a social practice and emphasise the importance of contextual analysis when analysing language (Bhatia, 2012, p. 238). Specifically, CDA views a text as embedded in a sociohistorical context (Wodak, 2011, p. 186) and also considers the implications of sociopolitical and cultural factors in both the production and reception of a text (Crystal, 2008, p. 123). CDA views texts as

products of their context and holds that contextual factors such as social, historical and political aspects manifest themselves in texts covertly and overtly.

CDA differs from traditional non-critical views of discourse in various ways. The first is that the critical element brings with it the previously discussed emphasis on context but seeks to study language as not just a socially situated event, but as something that draws on and reproduces ideologies. While discourse, as shown above, does incorporate contextual considerations, its emphasis is on analysing the linguistic elements of a text whereas CDA is not “interested in investigating a linguistic unit per se but in studying social phenomena” as manifested in texts (Wodak & Meyer, 2009, p. 2). CDA is concerned with the ideologies and ideals that are coded in a text (Van Dijk, 1995b, p. 17).

In CDA there is an emphasis on understanding how language contributes to the (dis)empowerment of individuals, and how power is mediated, (re)produced, and negotiated in discourse (Fairclough & Wodak, 1997; Blommaert & Bulcaen, 2000). Specifically, it is how the existing power structures not only shape our discourse, but exist in the discourse themselves, and whether they are upheld or challenged (Breeze, 2011). CDA is, at its core, interpretative – there is not necessarily a direct relationship between certain linguistic forms and their functions of (re)producing power and there is no dictionary of conventionalised manifestations of ideology and power (Fairclough, 1995).

CDA is concerned with both ‘opaque’ and ‘transparent’ elements of power and ideology (Wodak & Meyer, 2009, p. 10) and how we can decipher these elements of communication. Discourse is situated (Reisigl, 2013), and understanding “the effects of texts in inculcating and sustaining or changing ideologies” (Fairclough, 2003, p. 9) is fundamental in understanding the formation of discourse. When we view discourse as a social practice, we position it as:

socially constitutive as well as socially conditioned; it constitutes situations, objects of knowledge, and the social identities of and relationships between people and groups of people. It is constitutive both in the sense that it helps to sustain and reproduce the social status quo and in the sense that it contributes to transforming it. (Wodak, 2014, p. 303)

Discourse is bidirectional in the sense that social contexts do not just influence discourse, but discourse influences society. Consequently, discourse can maintain social identities just as social identities are enacted through discourse. This notion is important for the rest of this thesis as throughout I argue that disinformation has this similar socially conditioned-constitutive relationship in that it is influenced by social context but also forms and shapes social contexts.

To summarise: discourse is socially situated language; critical approaches to discourse are the situation of discourses into wider value systems and how these can affect society (Caldas-Coulthard et al., 1995; Fairclough, 1995).

2.2.1. Power and Ideology

Earlier I wrote of strands of discourse, and how discourses interact, compete, coexist and cease or start. The implication of this is that not all discourses hold the same level of pervasiveness. In other words, some are more established than others.

Discourses are often referred to as ‘dominant’ – particular discourses that have been mainstreamed, at the cost of others (Wodak & Chilton, 2005, p. 177). A dominant discourse can

contribute to “fram[ing] the rank and status” that an idea has in society (Robinson, 1999, p. 73) and consequently shape how other people view a topic. One issue is, as Coysh (2014) notes, that a “lack of space for reflection can reinforce a manufactured and dominant discourse” (p. 91), when, as Van Leeuwen (2018) notes, personal experiences may contradict the dominant discourses (p. 141). This shows the importance of understanding the polyphony of discourses that contribute to how a certain idea is represented.

Dominant discourses are difficult to challenge because, by their very nature, they are “part of the identity of most members of any society, and they influence attitudes and behaviors” (Hare-Mustin, 2013, pp. 1-2). This is further compounded by the fact that it is difficult to challenge dominant discourse because “a dominant mode of discourse forms an overarching structure where other discourses must be located if they are to be taken seriously by those in power and by the members of the dominant sub-culture” (Heracleous, 2006, p. 1080). In other words, dominant discourses, by their very nature, suppress other discourses, something which further entrenches their dominance.

There is also a key word here: *manufactured*. Dominant discourses contribute to expectations and also tell us what is acceptable in society (Smith, 2012, p. 81) but they do not necessarily occur naturally. They can be crafted, telegraphed, and promoted by parties who benefit from a certain ideology becoming the prevailing one. This is where the power comes in – who decides this positioning of discourses?

KhosraviNik and Unger (2016) refer to the holders of power as symbolic elites, those people who “have privileged access to the influential public discourses in politics, the media, education and business corporations” (p. 76). It is the uneven power balance wielded by these people that allows them to establish the dominant discourses in society (Dunn & Eble, 2015). Power manifests as:

- Institutional, the Prime Minister wields more discursive power than the ordinary voter, (Toye, 2011)
- Structural, a CEO is more powerful than a subordinate worker in their company, (Handford, 2010)
- Cultural, celebrity voices are amplified more than the average person, (Marshall, 2014))
- Religious, divine/supreme/spiritual leaders are afforded more discursive power than those they preside over, (Chin et al., 2019)
- Situational, a stand-up comic can pick on people who don’t have a microphone and therefore cannot respond, (Morris, 2024)
- Epistemic, experts are seen as having more power than non-experts, (Stehr & Grundmann, 2011)), or for myriad other reasons. They are also not fixed nor are they permanent; these power dynamics shift and evolve over time.

Furthermore, constellations of power can involve any combination of these and myriad other attributes. They are also not fixed nor are they permanent; these power dynamics shift and evolve over time.

The power of the media to propagate dominant discourses has been given a great deal of attention in critical discourse studies (Van Dijk, 1995b; Richardson, 2006; Fowler, 2013). We can extend this critical discussion of the centrality of the media to include its role in relation to disinformation, and in particular, the relationship between social media and disinformation. This will, in turn, develop into a discussion of both disinformation on the one hand, and social

media on the other, and the relationship between the two and how they can be viewed through a critical lens.

2.2.2. Media Power

The media, and specifically the news media (also referred to as the ‘press’), have the capabilities to “control ideological reproduction among the population at large” (Van Dijk, 1995a, p. 33) and consequently cannot just propagate ideologies, but also shape the ideologies of news consumers:

“popular ideologies are, however, unthinkable without the active contribution of the mass media. Following the theoretical framework of persuasive media power, this would mean that the dominant discourses of the mainstream media lead to the construction and adoption of preferred models, which, in turn, are the basis for the inference of preferred attitudes and ideologies.”

(Van Dijk, 1995a, p. 38)

This is because the news media have traditionally been viewed as the gatekeepers of information and as the party responsible for reproducing ideologies to mass audiences. This mass diffusion of ideology plays an important part in normalising certain viewpoints, and othering alternative viewpoints. One argument is that the “mainstream media can never offer us a full and unbiased picture, but instead uses language and imagery to provide us with representations of reality” (Neary & Ringrow, 2018, p. 304), and there are both practical and ideological reasons that support this view.

For example, broadcast news segments are strictly timed to allow coverage of lots of different topics (Lievrouw, 2015), while often newspapers have an explicit ideological stance which can lead to the intentional suppression of certain representations (Carvalho & Burgess, 2005). These have the effect of limiting alternative viewpoints and restricting what representations mass media consumers are exposed to. The inevitable result is that it becomes simply impossible to include a full and balanced plurality of views in any given piece. Furthermore, proposing alternative views to things that are widely accepted, such as anthropogenic climate change creates a false balance (Parratt, 2014). This again leads to the normalisation of certain discourses as ‘accepted’ in society. There is a link here to human cognitive biases and the information we are likely to find most palatable, normally in the form of minimally dissonant, agreeable information; this is discussed in sections [4.1.1. \(Belief\)](#) and [4.1.3. \(Heuristics\)](#).

In the contemporary era, however, media power is diffuse. For the first time in 2024, online news consumption overtook TV in the UK (Ofcom, 2024). Further, as KhosraviNik and Unger (2016) note, social media has led to a change in how we understand media ecologies and power has shifted towards decentralisation. This is because the participatory web (see [section 5.1.1. ‘Social Media’](#)) has not only allowed information consumers to become producers (Herring, 2013), it has also dramatically increased the number of information sources available to people. For example, there are currently 17 “traditional” (i.e. printed) national newspapers (free or paid) in the UK (Press Gazette, 2024), yet there are over 50 online news brands with more than 3 million visitors per month collectively (IPSOS, 2021). While for many newspapers the print readership still dominates, digital format have become the dominant market for some brands, including the The Guardian/Observer group papers (Ofcom, 2023). Ultimately, online news and social media have fundamentally challenged our “traditional static understanding of media power” (KhosraviNik, 2017 np.).

Modern news media and social media have shifted power away from mass media broadcasters who were traditionally seen as the arbiters of information. One view of this is that the discursive transformative power of social media has democratised the access and production of texts, stripping power away from traditional news providers (though see this chapter [Section 2.4](#) for discussion of how shared access \neq shared power). This is all especially pertinent to disinformation. Disinformation is both a media problem and also something commonly reported on by the media. There are, arguably, few issues which are more intrinsically linked to the media than disinformation and deceptive news practices. Simply, social media has transformed how disinformation is consumed and disseminated. Disinformation is an issue *in* and *of* the media, and one that has been deeply affected by these media shifts. Consequently, critical approaches to discourse offer a way to understand how shifting media power has affected it as a topic.

There is also a more practical element here too. Dominant discourses contribute to a sense of acceptability (Van Dijk, 1977), importance (Cushion et al., 2022), naturalness (Mills, 2004), and normality (Krzyżanowski, 2020). Therefore, understanding discourse shows us whether potential disinformation interventions will fit into this normative discourse and also be seen as “acceptable” or whether they will be at odds with the dominant representation of the issue, and therefore potentially seen as inappropriate.

Given how social media has led us to rethink the construction and reception of discourse, I will now delve further into the theory behind the use of electronic devices to communicate – computer-mediated communication.

2.3. Computer-mediated Communication

Also known as digital communication (Graham & Hardaker, 2017), computer mediated language (Herring et al., 2013), netspeak (Crystal, 2001), or e-language (Knight, 2015), computer-mediated communication (hereafter ‘CMC’) is “communication that takes place between human beings via the instrumentality of computers” (Herring, 1996, p. 1). The term ‘computers’ has evolved dramatically in recent years, and while it was traditionally used to refer to just desktop terminals, it can now refer to smartphones, wearable technology, gaming devices, and other internet-connected devices.

CMC has been described as the “massification of interpersonal communication” (Steinfeld & Fulk, 1988, p. 3) and occurs across a “variety of social contexts, and on a variety of technological systems” (ibid). CMC is of course now commonplace in personal, business, teaching, health, and most other contexts; it is, in fact, difficult to think of a context that has not been influenced by CMC, and we live in an age where “nearly all social activities could be, and likely are, mediated in some ways by some forms of computing technology” (Yao & Ling, 2020, p. 5).

Traditional CMC research focused on CMC as a register, distinct from spoken language or other writing, concerned with features such as spelling, text length, emoticons and acronyms (Carey, 1980; Werry, 1996; Crystal, 2001). This was perhaps because of the novelty of the mode, and a desire to frame it against pre-existing models of language as an ‘emergent’ register (Ferrara et al., 1991). However, as these technologies became more sophisticated and more widespread, so did the corresponding research. There was a shift towards focusing on the more social and interactional nature of these online spaces, such as gender (Sussman & Tyson, 2000),

politeness (Morand & Ocker, 2003), turn taking (Garcia & Baker Jacobs, 1999), emotion (Derks et al., 2008), and conflict (Hobman et al., 2002).

It is also important to emphasise that CMC is not one homogenous register. There are myriad ways to communicate in CMC and research shows “computer-mediated language and interaction to be sensitive to a variety of technical and situational factors” (Herring, 2005, p. 613). There is an increasing number of online spaces to communicate in, and as social media platforms launch new features and new technologies such as VR become increasingly popular, each of these will affect how communication takes place.

2.3.1. Synchronicity, Longevity, Anonymity and Participation

One thing that characterises CMC is (a)synchronicity. In synchronous CMC, “communication occurs in real time [...] which require[s] participants to be communicating in the same session” while asynchronous forms of CMC “do not require participants to be on-line at the same time” (Murray, 2000, p. 399). For example, face-to-face communication is seen as synchronous as it takes place ‘in the moment’, whereas writing a letter to someone that takes days to arrive would be asynchronous as there is a delay between writing, reading and responding. However, this distinction is better seen as a cline from synchronous ↔ asynchronous, rather than as a binary distinction (Graham & Hardaker, 2017). For example, latency (a delay in sending data from one device to another) can introduce a degree of asynchronicity in otherwise synchronous communications, such as instant messaging.

(A)synchronicity is related to another core aspect of CMC: longevity. Unless it is recorded, face-to-face interaction is transient, while, unless it is destroyed, written communication is permanent. As Graham and Hardaker (2017) note, “once something is posted digitally, it is often ‘out there’ for good” (p. 790) – something that may affect how we produce and receive texts. For example, we may say different things in face-to-face communication where there is no ‘paper trail’ than in permanent communications. Again, however, technological developments have led to this distinction becoming blurred. For example, major platforms such as WhatsApp, Snapchat, Instagram, Telegram and others offer so-called ‘disappearing messages’ (Heath et al., 2023), i.e. ephemeral messages that self-delete after a certain timeframe or once they have been viewed. These messages are transient, but last longer than verbal communication and therefore sit slightly higher up on the transient ↔ permanent cline. (A)synchronicity plays a role in CMC because it is not in-person communication and is usually done when the message recipients are not physically present. This leads to another characterising factor of CMC: anonymity.

Anonymity plays an important role in CMC. Anonymity is defined as “the inability of others to identify an individual” (Christopherson, 2007, pp. 3039-3040) and at its core, CMC can be anonymous because it is a disembodied form of communication (Tanis & Postmes, 2007) that takes places through devices and not in-person. However, as Christopherson (2007) notes, it is not necessarily actual anonymity that changes how we communicate, but that the “individual perceives him or herself to be anonymous to others” (p. 3040, original emphasis). This anonymity contributes to what Suler (2004) calls the ‘online disinhibition effect’:

Sometimes people share very personal things about themselves. They reveal secret emotions, fears, wishes. They show unusual acts of kindness and generosity, sometimes going out of their way to help others. We may call this *benign disinhibition*. However, the disinhibition is not always so salutary. We witness rude language, harsh

criticisms, anger, hatred, even threats. Or people visit the dark underworld of the Internet—places of pornography, crime, and violence—territory they would never explore in the real world. We may call this *toxic disinhibition*.

(Suler, 2004, p. 321, original emphasis)

As Suler notes, anonymity can be both positive and negative. For example, benign anonymity can lead to help seeking in those experiencing suicidal ideation (Still, 2020), or emotional support in vaccine hesitant individuals (Semino et al., 2023). It may also contribute to a sense of solidarity for people in countries with repressive governance (Asenbaum, 2018). It allows people to communicate in a way that is detached from social rules and norms, and protects them from persecution based on who they are. Beyond just enabling these behaviours, the online disinhibition effect changes how these behaviours are carried out, for example by changing the speed at which they occur (Davis, 2012). Distance plays a key role here, and communicating via a mediated, disembodied form can make you more bold or make you say things you wouldn't normally say as there is no face-to-face element and thus direct consequences of your communication may be reduced (Herring, 1996).

Conversely, it is well documented that online anonymity contributes to negatively marked online behaviours (NMOBs) (Hardaker, 2010) such as bullying, child sexual exploitation and abuse (CSEA), scams, and terrorism (eSafety Commissioner, 2024). This is because the online disinhibition effect contributes to a shift in behavioural boundaries, leading people to act how they would not offline, or to intensify their offline actions online (Lapidot-Lefler & Barak, 2015). The paradox here then is that the online disinhibition effect can lead to both greater honesty and disclosure, and also greater amounts of deception and manipulation.

One final aspect of CMC to discuss is participation. Graham and Hardaker (2017) make the distinction between 'interaction-focused' and 'declaration-focused' recipient participation. The former focuses "more readily on establishing relationships between participants (i.e. they are interaction-focused)" (p. 789), while the latter is concerned with platforms that allow users to share information out into the world but are not necessarily focused on building relationships (ibid). In other words, while in typical face-to-face interaction we expect a response, we may not necessarily expect one in online communication contexts where the goal is to declare information to the world. For example, on X (formerly Twitter) users have the option to disable the reply function on their tweets, making their post purely declarative rather than interactional. Conversely, on a forum such as Mumsnet a user starts a new thread expecting replies (though they may not always appear). It is also important to note that the same social media function can have a different focus depending on how it is used.

As discussed in [Section 2.1.](#), this thesis is not just interested in language or communication, but how language is affected by its social settings and how language practices can be situated into wider societal context. Consequently, the focus is not just on CMC, but computer-mediated *discourse*.

2.4. Computer-mediated Discourse

Computer-mediated discourse (hereafter CMD) is best defined by Herring (2005) as:

the communication produced when human beings interact with one another by transmitting messages via networked computers. The study of computer-mediated discourse (henceforth CMD) is a specialization within the broader interdisciplinary study

of computer-mediated communication (CMC), distinguished by its focus on *language and language use* in computer networked environments, and by its use of methods of *discourse analysis* to address that focus.

(Herring, 2005, p. 612, original emphasis)

Discourse is the examination of language in use and how individuals use their linguistic repertoires to represent the world around them. CMD is discourse that is constructed by means of interconnected electronic devices. That it is computer mediated affects how discourses are constructed and changes our understandings of discourse.

One key feature of CMD is that if anything it is a communication form that is more reliant on discourse than other types. As Herring (2005, p. 624) notes, it is in online spaces that users do not necessarily share geographical, temporal, language, or spatial commonalities with one another, and it is indeed their production of discourse that then plays an increased role in creating and maintaining social structures. This is further compounded by the fact that CMC lacks many non-verbal cues that we rely on in other forms of communication to infer meaning (Walther & Tidwell, 1995) and consequently more emphasis is placed on the textual element.

For many years, CMC and CMD were seen as an egalitarian, even utopian, form of interaction where the internet would allow us to iron out pre-existing power and social struggles and create an equal world accessible to all (Barlow, 1996; Preece & Maloney-Krichmar, 2005), perhaps because it was viewed as a 'new frontier' offering limitless possibility (Kling & Lamb, 1996). However, the reality turned out to be, as Wilson and Leighton (2002) note, that interaction through CMC is "embedded in existing practices and power relations of everyday life" (Wilson & Leighton, 2002, p. 449) and does not detach us from them, but instead can both further reinforce them (Holmes & Burgess, 2022; Esat, 2024) and create new inequalities (Souter, 2022). It is here where access is often conflated with equality; that is to say, just because many people have access to online spaces, it does not mean they are equal in terms of the power they wield in these spaces.

2.4.1. Social Media as a Form of CMD

If discourse is considered to be socially situated language, then the discourses constructed on systems designed for social interaction will be rich data sources. In other words, social media data offers rich insights into how people represent their world and the prevailing discourses on a given topic.

As the name suggests, social media platforms revolve around social interaction. KhosraviNik (2017) defines social media communication as:

electronically mediated communication across any electronic platforms, spaces, sites, and technologies in which users can: (a.) work together in producing and compiling content; (b.) perform interpersonal communication and mass communication simultaneously or separately – sometimes mass performance of interpersonal communication and; (c.) have access to see and respond to institutionally (e.g., newspaper articles) and user-generated content/texts. (p. 582)

This is not to say that all features of a given social media platform are designed for social interaction, but these networks allow users to interact with existing social networks while also forming new networks. There are myriad ways in which users use platforms, and Kaye (2021)

proposes a conceptual framework that distinguishes between interactive, broadcast, reactive, and passive social media use:

Two-way	Interactive social media use Video/audio calls on Messenger Responsive/interactive thread or comment/s	Broadcasting social media use Posting on one's timeline Posting "Stories" or "Fleets" Scheduling content in advance	One-way
	Reactive social media use Re-sharing/Retweeting others' content Like, Favourite, React, Commenting on others' content	Passive social media use Accessing others' profiles Accessing others' "stories" or "fleets" Viewing your own timeline/home page Accessing social media sites to check/read notifications	

User is the Audience/Recipient

Figure 1 Types of social media use. From Kaye, 2021, p. 3

While of course not exhaustive, the framework shows different categories of social media use and shows how social media may be used for information seeking alongside social interaction. While this diagram does not offer a total picture, for example interactive could also include "interactive thread or comment" and reactive could include "commenting on others' content", it works to demonstrate how complex, and evolving, social media functions are. In this thesis, I am interested in active users of social media – users who broadcast their own user-generated content for others to consume. In other words, I am concerned with participation as it manifests in textual social media posts.

2.5. Computer-mediated Discourse Analysis (CMDA)

The approach to investigating computer-mediated discourse is known as computer-mediated discourse analysis (hereafter 'CMDA'). CMDA is, as Herring (2004b) notes, "best considered an approach, rather than a "theory" or a single "method"" (p. 342) because it is not a theory of discourse, nor is it something that seeks to predict how CMC affects discourse, but is instead is a way of setting out to investigate ideas as mediated through CMD. Reflecting this, CMDA is often referred to as a 'toolkit' that can draw on several approaches within (critical) discourse studies while not being a paradigm itself (ibid.). This is not to say that the approach towards CMD is totally unguided, and "structured methods and theoretical frameworks are necessary" to analyse social and technological phenomena (Herring, 2004c, p. 65). This brings us to a key element of CMC and CMDA: interdisciplinarity.

CMDA "crucially takes into account the technological affordances of CMC systems" (Herring, 2004c, p. 66) and understands that CMD is not just socially situated, but is "socially, culturally, and historically situated in the larger Internet context" (ibid.). I would add to this that it is also

technologically situated. This need to bring in other disciplines is especially pertinent to disinformation which spans continents, topics, and mediums, and subsequently needs a broad toolkit to analyse the various phenomena at play with due nuance. This toolkit is designed to:

“[A]dapt existing methods, primarily from linguistics (but in principle from any relevant discipline that analyzes discourse), to the properties of digital communication media. The methods and the phenomena, along with broader issues they address, are then loosely mapped onto four levels of hierarchy, from the microlinguistic, more context-independent level of structure to the macrolevel of contextualized social phenomena.” (Herring, 2013, p. 9)

One key concept that has featured in discussions of CMC is technological determinism (hereafter ‘TD’, also known as ‘techno-determinism’). TD holds that technologies themselves are responsible for change, and gives agency to the technology, rather than the people using them being the effectors of change (Smith & Marx, 1994). In TD, technology is seen as the changemaker, and not a tool that allows humans to change. As Wyatt (2008) notes, while technology plays a “prominent developmental role” (p. 167) in societies, TD omits the role of the human, which underplays our role in implementing these technologies while also absolving humans from the responsibility of creating technology that changes how we live.

CMD is technologically situated, but not technologically determined. While there may be features of CMC that are characteristic of it as a register, the fact that not every individual communicates in the same way on the same platform shows that the technology we use to communicate with each other does not determine how we communicate. This is shown by the myriad social phenomena and the resultant discourses that occur online. And, while some platforms have limits such as length-delimited posts (such as tweets on X), this is no different to the determinative power that a newspaper limiting the number of words a journalist can write in an article; in other words, it shapes the article but does not determine it. As Tagg (2015) notes, communication in CMC is “not wholly predetermined by its infrastructure but by how users choose to exploit it” (p. 113).

CMDA is not theory-driven and consequently is not situated within a single analytical paradigm (e.g. pragmatics; sociolinguistics; etc.); CMDA is instead data-driven and uses a methodological toolkit designed by the researcher that can draw on multiple sub-disciplines and is most appropriate to the data in question (Herring, 2004a, p. 358). In this thesis, using approaches from (critical) discourse analysis to explore how people online use language to exhibit their beliefs and ideologies in an era of decentralised media power was beneficial in exploring discussions of the terms ‘disinformation’ and ‘misinformation’ on Twitter. Consequently, a CMDA toolkit drawing upon critical discourse analysis was developed.

2.5.1. Critical Approaches to Computer Mediated Discourse and Social Media

Critical approaches to CMD and social media, like (critical) discourse studies, has discourse as the central object of analysis (KhosraviNik, 2017, p. 586). What characterises this field of study is not just the awareness that technology may change how we interact with each other, but also that these technologies and their associated discourse practices are situated into social, cultural, historical, and other contexts, and it is the integration of this contextual analysis into a medium that has fundamentally shifted media power that allows us to study the data critically.

Thurlow and Mroczek (2011) describe critical approaches to CMD and social media as investigating the ways:

micro-level interactional and textual practices constitute our social worlds and the way that our everyday communicative/ representational practices are structured by the social order, larger systems of beliefs, and by hierarchies of knowledge (p. xxvii)

Fairclough (2003) refers to discourse analysis as focusing on the “structuring and networking of social practices” (p. 3). I would then say that critical CMDA focuses on the structuring and networking of social practices as mediated through online platforms designed for interactivity and the exchange of user-generated content (see [section 5.1.1](#) for discussions of UGC). In other words, CMDA focuses on investigating social practices on mediums designed for social practices.

As I wrote in [Section 2.1](#), discourse is socially situated language and critical approaches to discourse are the situating of discourses into wider value systems and how these can affect society. Developing this, Critical CMDA is the context-bound analysis of decentralised computer-mediated socially-situated language that enacts social practices and structures online.

While social media offers critical insights into discourse and how representations are formed online, it simultaneously offers up an overwhelming amount of data. For example, as discussed in [Section 5.3](#), the data collected for this thesis comprises over 13-million words of data, made up of over 480,000 tweets. This clearly precludes manual analysis of the entire dataset and calls for a method that can integrate critical analysis into a ‘big data’ approach. Many computerised approaches with varying levels of automation exist to tackle this amount of data, but an approach was needed that could both tackle large amounts of textual data while also allowing for the manual analysis of tweets in context when needed. The answer to this combination of demands was corpus linguistics.

2.6. Corpus Linguistics

Corpus linguistics is the use of computer software to run frequency metrics on linguistic data. A corpus is a “collection of machine-readable authentic texts (including transcripts of spoken data) that is sampled to be representative of a particular natural language or language variety” (McEnery et al., 2006, p. 5). Corpus linguistics, the analysis of these machine-readable texts, is best viewed as a collection of methods rather than as a single method (Baker et al., 2008) due to the wide range of tools and means of both quantitative and qualitative analysis that this approach offers.

Corpus linguistics essentially offers an empirical approach to linguistic data but requires interpretation of results and, as Biber (1998, p. 4) notes, “functional (qualitative) interpretation is also an essential step in any corpus-based analysis”. In respect to this, it is useful to view corpus linguistics as sequential. This sequence is: (1) a human decides what data to use, (2) the human chooses which corpus linguistics tools to use, (3) the computer calculates results based on these tools, and finally, (4) the human then interprets these results. In other words, the quantitative element of corpus linguistics is sandwiched between one or more qualitative decision-making steps from the researcher.

This mixed quantitative-qualitative approach allows the researcher to infuse more objectivity into their research because rather than inventing linguistic examples or estimating language

use, corpus approaches mean we must “start with the evidence and match the description to it”, which helps us to “analyse language with objectivity” (Walter, 2010, p. 429). This is not to say corpus linguistics cannot be poorly executed and/or biased, but the integration of quantitative aspects balances out the qualitative nature of analysis.

Corpora allow us to study pertinent topics and issues in naturally occurring discourse that, without computerised approaches, would otherwise be intractable (Biber et al., 1994, p. 170). However, the empirical basis that corpora provide is not a solution in its own right, and as Sinclair et al. (2009, p. 987) note, human intuition and corpus data are not at odds. Instead they are complementary to each other in that “intuition as a type of linguistic evidence should be used in conjunction with empirical evidence collected from other sources” (Sinclair et al., 2009, p. 990) to help explain discourses and reach conclusions.

2.6.1. Corpora and Discourse

Corpus approaches to discourse analysis, put simply, can be explained as:

using corpora (large bodies of naturally occurring language data stored on computers) and corpus processes (computational procedures which manipulate this data in various ways) in order to uncover linguistic patterns which can enable us to make sense of the ways that language is used in the construction of discourses (or ways of constructing reality).

(Baker, 2023a, p. 1)

Corpus linguistics emphasises analysing real-world language use (McEnery & Wilson, 1997) and is consequently well suited to understanding how people construct discourses. The benefit of using corpus approaches is that they uncover patterns, results and insights that might not be distinguishable by eye for many reasons: the data is too large, they do not appear salient in manual analysis, they are overlooked, etc.

The field of corpus assisted discourse studies (or ‘CADS’) – just one application of corpora and discourse – seeks to uncover these ‘non-obvious meanings’ in discourse, i.e. “meaning which might not be readily available to naked-eye” (Partington et al., 2013, p. xxv). This can be done through various means such as wordlists, keywords, etc. (see [Chapter 5 Methods](#)) but one core objective in corpus approaches to discourse is establishing familiarity with the data. This can be done through the aforementioned corpus techniques but also alongside viewing the discourse in context, following particular permutations of the discourse, and simply reading through large samples of your corpora. The intended goal of this is to “help provide a feel for how things are done linguistically in the discourse-type being studied” (Partington et al., 2013, p. xxvi) and to better inform analysis.

CADS is not inherently critical in its approach to analysing language but has been increasingly combined with critical approaches to discourse as a way of exploring socially situated non-obvious meanings in discourse. Increasingly this has taken place in online discourse environments where the quantities of data favour corpus-assisted approaches.

2.6.1. CL and CDS

Critical corpus approaches to discourse allow an entry point into the data by providing a ‘pattern map’ allowing the researcher to narrow down their analysis and the results can then

“point towards patterns to be examined through the CL lens for triangulation” (Baker et al., 2008, p. 296) resulting in a ‘synergy’ of approaches that are mutually beneficial to one another.

The merits of corpus linguistics, discussed in the previous section, are apparent in Mautner (2009, p. 157) summary of the application of these methods in analysing discourse, described as:

“the systematic attempt to identify patterns in text, link them to patterns in the context, and vice versa. Doing so critically means unveiling and challenging taken-for-granted assumptions about language and the social, as well as recognizing discourse as a potentially powerful agent in social change.”

A common criticism of CDS is that it is too interpretive or is designed so the analyst finds what they want to find (see Flowerdew (1999) for an overview and response to these criticisms). In this sense, CDA can be tempered with corpus approaches that are designed to start with representative, balanced datasets that allow the analyst make claims about a particular language or language variety. These datasets are not claimed to be total in their nature, but they allow us to base our analysis on real discourse, rather than assumptions or (mis)perceptions of discourse (Biber et al., 1994, pp. 169-170).

While CDS may be seen as too interpretive, corpus approaches may be seen as too ‘big picture’ as frequency metrics do not necessarily capture all types of meaning making; decontextualised analyses can omit examples such as metaphor, sarcasm, and threatening language, where the linguistic form is reliant on additional context to be understood and “there is no one-to-one relationship between linguistic forms and their social functions” (Mautner, 2009, p. 174). Additionally, as Partington et al. (2004, p. 12) note, the act of using a corpus in research does not “necessarily make it a study in Corpus Linguistics”, and the researcher must consider all the tools at their disposal and how these can complement their research. In this sense, CDS offers up a way for the researcher to balance out the detached nature of corpus analysis with fine-grained, manual analysis that allows them to uncover finer semantic and pragmatic meanings.

Put simply, as Baker (2014) notes, when it comes to CDA it is the case that “corpus analysis works best when combined with a range of approaches which consider context in various ways” (p. 234) and this context can include anything from codes of practice and guidelines as used by Baker (ibid.) to other relevant supplementary material that help deepen analysis.

2.7. Tying up Discourse, CDS, CMC and CMDA

Computer-mediated corpus-based critical discourse analysis is quite a long label. Whether it is viewed as a tool, method, approach, toolkit, or another way, this means of analysis demonstrates the breadth of approaches and tools I plan to use in my analysis to explore a topic that is at its core online, happens in vast quantities, characterised by changing power dynamics, and socially, culturally and historically situated. It is also flexible to accommodate the external materials and sources of information I will bring into analysis to help contextualise and support my findings, such as survey findings, online trends data, demographic information, and other resources.

Hameleers (2023) argues that disinformation is a context-bound phenomenon and definitions of the concept should be “actor-centered” to “explicate the motivated and strategical creation and dissemination of disinformation by malign actors” (Hameleers, 2023, p. 6). I would argue that disinformation is not just context bound, but socially bound. Disinformation is both socially

conditioned by wider society and social practices, and socially constitutive of many situations (cf. Fairclough & Wodak, 1997, p. 259). In other words, social factors affect disinformation's production and reception, and equally disinformation influences many social elements across society. Consequently, detaching disinformation from its social influences and impacts is to detach it from a core aspect of how it operates in the real world. This is why an analytical approach that views discourse as a social situated practice is beneficial in the study of disinformation.

The purpose of this section is to give the foundational underpinning to my analysis but not to restrict myself to a particular paradigm or approach. The reason for this is that disinformation is a complex topic and I do not want my analysis to be bound to a particular framework, which inevitably means I cannot explore the true extent of every facet of the data. One potential criticism of this approach is that it is vague – I am not situating myself within strict parameters and therefore much is left to the imagination. I would instead describe it as functional. It is grounded in (critical) discourse theory but is still flexible enough to allow analysis for the myriad topics that investigating disinformation will bring to the fore.

While this section has introduced the theoretical underpinnings of my analysis, the next section will look at the application of these by examining the current literature on online discursive representations, Twitter discourses, linguistics and disinformation, and finally critical disinformation studies.

2.8. Corpus Approaches to Representations and Discourse

There is a large extant literature that investigates how certain topics, objects and groups are represented in discourse in offline and online spaces. These studies have become commonplace in (corpus assisted) discourse studies which could in part be down to the increasingly vast amounts of online data available to researchers.

Traditional studies of corpus representations have overwhelmingly focused on media discourse due to a) its availability to researchers and b) the historic role the media has had in shaping public discourse. These studies have focused on a range of topics from representations of vegans (Brookes & Chałupnik, 2023), bisexual people (Wilkinson, 2019), Muslims (Baker et al., 2013), and key health topics such as pre-exposure prophylaxis (PrEP) (Jones & Collins, 2020). These studies have highlighted how the media can be congruous or at odds with prevailing discourses in society, and have allowed researchers to hone methodological toolkits for analysing discourses. In an increasingly digital world however, they represent just part of the picture of public discourses.

Historically, studies into online discourses have explored online spaces such as blogs (Schmidt, 2007; Ng'ambi, 2008) and forums (Coffey & Woolworth, 2004; Witschge, 2008) as early iterations of online discursive spaces. These studies not only demonstrated the nuanced insights that can be gleaned from online data, but also added to our understandings of how increasingly popular online environments can be used to maintain sometimes intricate social relationships. These large amounts of mostly textual data that were free to access gave researchers the opportunity to investigate a selection of social phenomena and also lent themselves to 'big data' approaches such as corpus linguistics.

These corpus assisted studies have looked at sources including the media (Bogø-Jørgensen, 2023; Gross, 2024), government (Hansson & Page, 2022; Love et al., 2023), user-generated content (UGC) (Koteyko, 2015; Bhatia & Ross, 2020) and span an extraordinarily diverse array of

topics and research questions. Their utility in analysing new and existing social, historical, political and technological issues have offered “invaluable insights” to researchers (Jaworska, 2016, p. 150) leading us to reassess how we view “texts, social interactions, and even the nature of language itself” (Jones et al., 2015, p. 1). More importantly, they have also begun to be used in a way that is deliberately aimed at informing and developing policy, and even challenging the status quo of particular policy contexts.

For instance, in a study of the language of online NHS responses to patient feedback, Evans (2021) remarks on the implications for NHS practitioners from their research, including that interpersonal relationships between staff and patients are affected by the “underlying discourse norms and practices” of the interactions (p. 227), something that was revealed using corpus assisted discourse approaches. Among other suggestions, Evans (2021) recommends staff training that addresses this underlying assumption, leading on from Baker et al. (2019)’s advice that staff avoid stock, boilerplate responses. This communication training can have real-world tangible impacts; this is shown by Chien et al. (2024) who, following a study of nurse handover in hospitals, suggested changes that resulted in improved safety and care for patients.

Other examples of corpus assisted discourse studies of online data contributing to shaping policy and developing interventions and recommendations include online forum data for patients with cancer (Semino et al., 2017), online policy documents for educational settings (Satienchayakorn & Jimarkon, 2024), online parenting forums for vaccination (Coltman-Patel et al., 2022), and even social media policy itself (Marlow et al., 2021). These studies have shown the value of carrying out online research to inform offline practices.

2.9. Twitter as a Source of Discourse

This section will give an overview of key and relevant findings in discourses of Twitter. The focus here is limited to the datatype used in this thesis (i.e. Twitter) as discussing social media in general is broad and beyond the scope and relevance of what is needed.

Social media platforms have changed the ways in which we encounter discourse (Baker & McEnery, 2015) and a platform such as Twitter “affords new insight into aspects of everyday life that have hitherto not been readily made public” (Zappavigna, 2012, p. 37). One way social media platforms, generally, have changed the way we encounter discourse is that they are designed to facilitate the discovery of discourses. This can be done algorithmically by means of the platform suggesting posts to a user, but users can also do it themselves. For example, Zappavigna (2012) refers to *hashtags* such as ‘#Fail’ as forms of ‘searchable talk’, which has led to “a change in social relations whereby we mark our discourse so that it can be found by others, in effect so that we can bond around particular values” (p. 1). This contributes to what Zappavigna (2011) calls *ambient affiliation*:

Being searchable opens up a new kind of sociality where microbloggers engage in ambient affiliation. The affiliation is ambient in the sense that the users may not have interacted directly and likely do not know each other, and may not interact again. It also could not occur without adequate search functionality. Users searching to explore online conversations produced on social networking sites in this way is a new cultural process. (Zappavigna, 2011, p. 801)

This ambient affiliation facilitates social interaction with complete strangers; thereby not only introducing new social groups and establishing weak tie relationships (Granovetter, 1973) but also exposing the user to new discourses they would not otherwise have seen. The result is a

networked public (Boyd, 2010) that can interact with each other and affords individuals agency and the right to express their views and opinions in a way previously unseen in modern history (Samin, 2008). This contributes to a polyphony of discourses that is arguably not seen in any other modern medium.

This sociality and freedom makes Twitter an excellent resource for analysing discourse (Nguyen, 2011), especially when seen through the lens of socially situated language. Of course, Twitter is not just for the formation of social ties – it has an important place in terms of news gathering, entertainment, politics, enterprise, and other purposes (Java et al., 2007), further compounding its utility as a resource for analysing discourse. The following sections will give an overview of studies of discourse on Twitter, before narrowing to focus specifically on disinformation.

2.9.1. Studies of Discourse on Twitter

It is important when making the distinction between press discourse and social media discourses to remember that this is artificial. Social media does not exist in a vacuum and as McEnery et al. (2015) point out “analysis shows that social media and the press are intertwined, with the press exerting a notable influence through social media, but social media not always being led by the press” (p. 237). This is because Twitter data is very rich and there is a great deal of linkage between online-offline spaces that “often generate high degrees of intertextuality through references to or hyperlinks of mainstream sites, user generated sites, blogs, or other SNS [social networks]” (Kreis, 2017, p. 499). Online spaces are not detached nor disparate from other sources of discourse, they are intricately connected to them.

Twitter discourse, however, is much more diverse than what is observed in static publications such as newspapers. In an analysis of the ‘#BoomerRemover’ COVID-19 hashtag (i.e. a sometimes aggressive hashtag that COVID-19 would kill older generations), Sipocz et al. (2021) find that not only do Twitter discourses reveal “more nuanced expressions surrounding generational cohorts than widely reported in media outlets” (p. 166) but that the hashtag – which on the surface seems negative – was used by a number of users to “call for intergenerational connectivity” (ibid.), highlighting the complexity and intricacy of online discourses on the topic. In other words, a hashtag that seemed to mock the deaths of older people conversely functioned to bring people closer together. This coexistence of multiple voices and discourses has led to Twitter as an online space being characterised by both affiliation but also as a space for constant “dissent and debate” (Davis, 2013, p. 18). Building on this, it may be best not to view discourses on Twitter as having ‘sides’ (which polarisation metaphors lead to) but instead to see Twitter interactions as heteroglossic spaces with a diversity of voices and ideologies (Bakhtin, 2010; Savski, 2020).

Context-bound CADS also presents a way in which to study discourses online by tying them back to real world events to understand the relationship between offline and online activities. One example of this is Fitzgerald (2023) who analyses the International Baccalaureate backlash hashtag ‘#ibscandal’, exploring how it “unfolded in real time”, therefore taking “an approach that makes it possible to disclose how shifts in discourses were intertextually linked to events in the wider world” (p. 132). These types of studies are important in not only understanding dynamic, changing situations but in exploring how real-world actions can affect online discourses. While these studies highlight the significance of examining online discourse in context, it is also crucial to consider the limitations of platforms like Twitter in facilitating communication and achieving users’ goals.

Twitter is neither necessarily used efficiently nor successfully, and various studies, such as those looking at activism, have found that oftentimes users may tweet in a way that does not always achieve their communicative, organisational or interpersonal goals (Potts et al., 2014; Harvey, 2020). A great deal of corpus-based discourse analysis of CMC seeks to *do something* with the data by using findings to perform a secondary task. In the literature this has included exploring bomb discourses for threat detection (Beach, 2019b, 2019a), identifying political stance through political discussions (Johnson & Goldwasser, 2016), and improving disaster preparedness by exploring natural disaster discourses (Matheson, 2018).

All this is to say that Twitter is complex. Not only are the discourses on Twitter varied, but the ways in which to approach the data are equally varied too. Consequently, Twitter acts as a melting pot of voices that can be used to test theories, explore specific research questions, or to understand how real-world actions are echoed in online spaces.

2.10. Discourses and Metadiscourses of Disinformation

There are two types of discourse to explore here: the first is discourses of disinformation exploring the language of false content itself through a discourse analytic perspective; the other is how terms such as ‘fake news’, ‘disinformation’ and ‘misinformation’ are themselves used in context, and the discourses surrounding them. Both will be explored here.

2.10.1. Discourses of Disinformation

This section will explore the current literature on the discourses of disinformation, misinformation, and fake news online.

Language

Looking at more than just discourse, there is a growing literature on the language features associated with disinformation/disinforming texts. Many of these studies work towards using automated approaches to detect disinformation (see [Section 4.7](#) for an overview of these) but there are some which combine quantitative and qualitative approaches to language analysis of disinformation. The inevitable drawback of such studies is that they are limited by smaller datasets to enable manual analysis.

Additionally, an issue with this research is that, akin to classic deception detection literature, much of it is contradictory. Many studies find one feature that signals disinformation, while another publication explicitly rules that out as a feature. These analyses may provide “reasonable and promising outcomes” (Mahyoob et al., 2020, p. 106), but overall, the state of the field is currently mixed. One potential way forward is a strand of forensic linguistic research that explores the language of disinformation, including research demonstrating the utility of forensic, corpus and discursive approaches to disinformation.

Sousa-Silva (2022) carries out a proof-of-concept forensic linguistic analysis looking at typography, orthography/spelling, and morphosyntax and finds not only that there are distinct features in their dataset, but that methodologically, the study “undeniably demonstrates the worth of a forensic linguistic analysis to identify the main features of disinformation” (Sousa-Silva, 2022, p. 2430). Ürmösné Simon and Nyitrai (2021) similarly propose that forensic linguistics offers practical insights into dealing with messy or sometimes limited and imperfect data and that practitioners in forensic linguistics could be well suited to addressing and investigating online disinformation. Less helpfully, they propose using ‘linguistic fingerprint’ research to locate disinformation actors and producers. Unfortunately, this notion of the

linguistic fingerprint is one that assumes consistency and often omits that language is not necessarily habitual, especially when there may be multiple authors behind a news article.

In a keyword analysis of distinctive lexico-grammatical features of disinformation compared to truthful news, Jaworska (2024) finds that disinformation writers “employ a set of specific linguistic devices” which includes interjections, non-standard spelling and punctuation, and other typographic features (p. 115). The author concludes that despite disinformation becoming commonplace in our lives, “linguistic research on this disinformation phenomenon remains scarce” and that corpus linguistic approaches are well-suited to analysing disinformation phenomenon in digital spaces (p. 116).

Discourse

Discourse analytic studies of false content online (that is to say, not metadiscourses but the discourse of false content itself) is scarce.

Lorusso (2023) refers to disinformation as an “inevitable discursive form of society” similar to gossip, and notes that disinformation is intricately connected with social paradigms and has many functions, including maintaining social relationships and allowing individuals to express themselves (p. 227). This social function of disinformation as a discourse is interesting as it goes above and beyond language to understand discourse as a form of social language as discussed earlier in this chapter (see [Section 2.1.](#)).

There have also been several useful case studies which look at disinformation in specific contexts using discourse analytic approaches. In an analysis of discourses of disinformation surrounding anti-vaccination campaigns, Maci (2019) explores how individuals (as opposed to organisations such as news outlets, etc.) use Twitter to spread (dis)information about vaccination, finding that posts regularly exploit imagery of death verbally and visually, and that discussions of death often occur with mention of children, government, or conspiracy. Specifically they find that many of these tweets which peddle false information adopt certain discourses so they appear “apparently constructed on scientific grounds in an accessible language that is supported by vivid (and visual) metaphors” (p. 38) and thus can achieve their deceptive aims.

Exploring Brexit discourses, Parnell (2024) explores the “fuzzy constellation of terms surrounding disinformation” (p. 197), discovering that disinformation has “become part of contemporary pro-Brexit representations of the EU” (p. 197) and co-exists alongside myths, news distortion and political strategy. Interestingly, related to myths, when exploring (anti-)immigration discourses, Taylor (2024) finds that “immigration discourses are structured by myths, which in turn are underpinned by disinformation.” (p. 183) and that the two can have a mutually beneficial relationship where they feed off, and amplify, each other. The study also finds that the false content surrounding immigration discourses does not necessarily introduce new (dis)information but that disinformation is used to support existing myths and narratives rather than itself being novel (p. 183).

These studies show the nuance of disinformation and highlight the benefits of “exploring micro-level text permutations in disinforming texts themselves” (Dance, 2025, p. 234) by using discourse analytic approaches. Through quantitative and qualitative analyses, they reveal insights into disinformation, its production and its spread that can not necessarily be gleaned through other approaches, thereby improving our understanding of this topic. The next section will discuss the extant literature about disinformation as a topic, as opposed to disinformation

in practice (as discussed above), exploring research that has explored this topic and the gaps in the literature at present.

2.10.2. Metadiscourses of ‘fake news’, ‘disinformation’ and ‘misinformation’

Metadiscussions of disinformation, i.e. the analysis of tokens such as ‘fake news’, ‘disinformation’ and ‘misinformation’, allow us to gain an understanding into how the terms are used in the real world and how they may vary from how journalists, politicians and academics use the terms.

Fake news

While “research into fake news discourse remains limited” (Wright, 2021, p. 4), there is a growing literature on the term ‘fake news’ given its role as a cultural touchstone in online spaces, alongside politics and the media. This research shows that the meta-discourses of ‘fake news’ are varied and express a range of representations (Farkas, 2023a). and generally find that there is a clear distinction pre- and post- the 2016 US presidential election, and that discourses of ‘fake news’ tend to be used by a vocal minority.

Exploring the 10 billion word English-language News on the Web (NOW) corpus, Cunha et al. (2018) find that before the 2016 election, the term ‘fake news’ was largely associated with satirical works but in the period afterwards “Donald Trump, Facebook and US are the three most mentioned entities” (Cunha et al., 2018, p. 7). That this change was so pronounced both temporally and geographically suggests a “global standardization” in the discourse surrounding the term’s use worldwide (Cunha et al., 2018, p. 14) where the previous dominant discourse (reference to satire) was overtaken. In an analysis of Australian social media, press, and parliamentary records, Farhall et al. (2019) propose that the term ‘fake news’ forms part of a wider repertoire of terms alongside ‘post-truth’ and ‘alternative facts’ that contributes to “form[ing] a fake news discourse” (p. 4354). They find that while the deployment of this discourse is relatively limited, it has nonetheless “emerged as part of Australian strategic political communications” and is seldom challenged by other politicians or journalists (p. 4370).

This political use has been found elsewhere on social media. In a study of Instagram and Twitter, Al-Rawi and Prithipaul (2023, p. 344) find that ‘politics’ was the most frequent topic code for occurrences of ‘fake news’ on both platforms, though they also observed a higher occurrence on Instagram, compared with Twitter, of uses for personal reasons such as jokes or to mock the prevailing political discourse (p. 343). This political emphasis on Twitter is borne out in other research, such as Brummette et al. (2018) who, in an analysis of 8,195 tweets from March 9, 2017, find that ‘fake news’ is a “politicized term where conversations overshadowed logical and important discussions of the term” (p. 497) and is used, as discussed in [Section 3.6.](#), as a rhetorical strategy to shut down conversation.

There have also been survey-based studies that complement these findings. In a survey of US adults on their opinions of ‘fake news’ where participants were asked to respond to open-ended questions, Tong et al. (2020) found that most respondents “adopted a politically neutral, descriptive definition, [while] others provided a partisan, accusatory answer” (Tong et al., 2020, p. 755). Furthermore, there was still a conflicting alternative discourse that understood the term as a way to incriminate oppositional political parties and media organizations (Tong et al., 2020). Interestingly, the study finds that these results held for political beliefs, suggesting that

use of ‘fake news’ as a dismissive linguistic shorthand is apolitical. Similar findings are discussed by Nielsen and Graves (2017) who, using surveys and focus groups, find that the element of ‘fake news’ that concerns “wider discontent with the information landscape” is a key part of its usage among individuals (p. 1).

When it comes to agency and responsibility for ‘fake news’, in an analysis of news articles spanning 2017-2018 and 2021-2022, Boudana and Segev (2024) find that “the public is positioned as a victim rather than an active contributor to the fake news problem and solution” (p. 1). This could reflect the fact that many of these discourses involve and implicate Donald Trump, who seems to be positioned as a perpetrator against a vulnerable public.

Many of these discourse studies points towards how ‘fake news’ functions as a “discursive weapon” (Al-Rawi & Prithipaul, 2023, p. 342) and how fake news discourses are tapped into and “weaponized” (Farhall et al., 2019, p. 4354) for specific communicative means. These studies remark on how the term ‘fake news’ has a communicative function as an attack label to discredit counter attitudinal viewpoints, particularly against the legacy media (Egelhofer et al., 2020). This is discussed further in [Section 8.2.1](#).

Disinformation and Misinformation

While there is a growing literature on the term ‘fake news’ and its uses have been codified into various taxonomies and conceptualisations, at the time of writing I could find no research that focuses explicitly on metadiscourses of the tokens ‘disinformation’ and ‘misinformation’ besides Dance (2025).

In a keyword analysis of 56,265 tweets (837,345 tokens) spanning the first six months of 2022 containing the terms ‘disinformation’, ‘misinformation’ or ‘fake news’, Dance (2025) finds that there are three key strands in discussions: uses characterising disinformation; discussing the effects of disinformation; and discussing solutions to disinformation (p. 238). The research finds that disinformation is often metaphorized and framed as an enemy to be ‘fought’ and ‘combatted’ and that blame for false content is aimed at social media companies, and not individual users of social media.

Given many individuals shun the phrase ‘fake news’ and that the terms ‘disinformation’ and ‘misinformation’ have been adopted by journalists, governments, educators, and many others, this is a considerable gap in the literature. To address this, RQ2 and RQ3 focus on the metadiscourses of terms ‘disinformation’ and ‘misinformation’ to understand how these terms are used and to explore how corpus-based discourse analytic approaches can be used to investigate them.

2.11 Critical Disinformation Studies

Finally, I will now turn to discuss a field that is well-positioned to study disinformation and its replication and reception online with due contextual nuance: critical disinformation studies (CRiDS). As it stands however, CRiDS is a very understudied field yet potentially offers a wealth of insight to studying disinformation. The seminal work in this space comes from Kuo and Marwick (2021), who argue that “a truly critical approach to disinformation studies must take into account that deliberately false information is culturally and politically specific” (p. 2). Further:

Through centering questions of power and grounding inquiry in historical contexts and social difference, a critical approach to disinformation can inform transformational

possibilities and address uneven dynamics of power in our digital landscape. (Kuo & Marwick, 2021, p. 6)

Critical approaches hold that disinformation should be contextualised against the social, institutional, and political structures that not only condition it, but allow disinformation to harm others. To paraphrase Wodak (2014, p. 303): disinformation is socially conditioned and socially constitutive – it is influenced by the structures in which it exists but can equally comprise objects of knowledge and form social identities, impacting how people view the world around them. Society configures disinformation, while disinformation configures society and there is a reciprocal, bidirectional relationship between the two. This approach emphasises the analysis of the power dynamics and societal inequalities that enable the production, [amplification](#), and harms of disinformation.

As Sabbah (2024) notes, these approaches can “create systematic and contextualised avenues for critically analysing fake news and disinformation” that can be used to help the public to “confront their own beliefs and assumptions about the world and the sources that they trust” (p.44). This notion of critical approaches opening up analytical routes is remarked elsewhere. Stahl (2006) notes how critical approaches to information systems (‘CRIS’) can offer analytical routes into analysing disinformation and misinformation and enable us to explore the “social structures or organisational configurations that express ideologies and reify discourses” (Stahl, 2006, p. 87). Stahl notes how critical insights can be applied at the most basic level and that when we consider intentionality, critical approaches allow us to distinguish between disinformation that intentionally seeks to alienate and harm members of society and misinformation that can inadvertently lead to these outcomes (p. 91).

This thesis takes this field one step further however and analyses real-world, naturalistically occurring discourses through a critical lens to provide insights into the socially-bound use of the terms 'disinformation' and 'misinformation'. In doing so, I aim to uncover the broader cultural, political, and institutional forces shaping how these terms are employed and understood in contemporary contexts and what this means for counter-disinformation efforts.

3. Conceptualising Disinformation: Definitions, Classifications, and Functions.

MISINFORMATION. n.s. [from misinform]. False intelligence; false accounts.

Samuel Johnson, 'A Dictionary of the English Language'. (Johnson, 1756)

As I will reiterate many more times throughout this thesis, disinformation is a complex concept. The following section explores different conceptualisations of disinformation to see how the term is used and discussed in academic literature. I first provide a definition of disinformation from the current literature and then will discuss four main aspects: bad information vs false information; disinformation as an umbrella term; taxonomies and continua of false content; and the rhetorical uses of these terms.

RQ1 (see [Chapter 7](#)) explores all these themes in detail, using contemporary and historical examples to understand the different types of false information and associated concepts. However, this section will give a short theoretical underpinning for the rest of the thesis.

3.1. Definitions and Considerations

There are many definitions of disinformation as [Chapter 7](#) RQ1 explores in detail with quantitative and qualitative analysis of definitions. However, before we can arrive at that point, it is useful to have a sense of the definitions that are developed and used throughout this thesis. We can establish some key elements and assumptions that are embedded into the definitions, which involves looking at what constitutes news, how much of an article must be false, and the issue of intentions. Below are three relatively uncontroversial definitions:

fake news	"news articles that are intentionally and verifiably false" (Allcott & Gentzkow, 2017, p. 213)
disinformation	"the deliberate creation and sharing of false and/or manipulated information that is intended to deceive and mislead audience" (DCMS, 2019, p. 10)
misinformation	"information that is false, but the person who is disseminating it believes that it is true." (Media Defence, 2022)

Immediately, we can see that intention is at the fore. This is seen through phrasing such as "intentionally", "deliberate", and "believes that it is true". Intention is a complicated aspect of any definition because from an epistemic perspective, we simply cannot discern intent. Baptista and Gradim (2022) sum this up as follows:

One of the biggest problems associated with the mandatory integration of intent into the definition of fake news is related to the difficulty in deciphering the creator's intent at the time of writing. Is the producer acting honestly, because he believes the content to be true or because he intends to deceive? To what extent is it possible to assess or measure your intent? These are some of the questions that have raised many doubts regarding the obligation to include intent in the definition.

Additionally, intent is not static. Someone may share misinformation and when later apprised of the problematic nature of that content, they may continue to share it anyway. In so doing, they are now disseminating disinformation, and the only change is in their perception of the credibility of that content. Intention also forms a key component of addressing false content. Identifying the intention behind the production of false content is of “crucial importance” in combatting it (Kalsnes, 2018, p. 6) because it affects how we respond to it. For example, we want to educate and not sanction those accidentally spreading misinformation, but may want to sanction and even punish those who spread disinformation.

In practice, discerning intent essentially constitutes making a judgement call based on an informed guess. For example, if users on a parenting forum for vaccination disseminate false content we may choose to give them the benefit of the doubt, whereas if hostile state-backed entities share false content, we may conclude the intention with higher certainty. The reality is that we can *never* truly know intention, even if someone apparently openly proclaims it. After all, both problematic and legitimate sources of information are likely to take steps to assert their credibility, honesty, and veracity. This epistemic impasse, however, should not allow us to get to a position where we do not ascribe intentions at all; we should take a functional approach that considers contextual factors and arrive at a decision based on those factors.

It is worth noting here that ordinary people must make such judgements all the time – from judges and juries to laypeople and children. We have to be able to infer intentions and act on them as though our inferences are correct, or we otherwise cannot function in society. This is no different for any form of communication. What is different here is simply that disinformation deliberately exploits that vulnerability in our inability to objectively know what someone’s intention really is.

There is also the issue of what constitutes ‘news’. For example, if I send a tweet with a false claim, is that [false news](#)? Or must it come from some form of news institution to be considered as such? On this, Ross and Rivers (2018) say that Donald Trump’s tweets should *not* be classified as fake news “for the simple reason that he is an individual and not a media agency” (p. 11). However, when we consider media power, would this also mean that a press release from a government agency or a statement put out by a high-powered individual (such as a celebrity) would not be classified as ‘fake news’ or disinformation because they are not a media agency? It may be more useful to look at this through the lens of symbolic power, rather than media or institutional power, and consider those in society who hold, and can therefore also abuse this power.

This distinction is made more complex by so-called ‘new media’ and the decentralisation from mainstream media, meaning that anyone can broadcast a message to a very large audience. Even where there is a clear collective working to generate novel content that we might think of as news, rather than a single individual like Donald Trump posting a tweet, there have still been debates about the kinds of configurations that are deemed to constitute news. For example, there is some contention over whether a blog – that is, a webpage typically run by an individual or small group and that is often characterised by a less formal register (Eldursi, 2014) – can be considered a news source or outlet. For some, the answer is that “[c]ertainly they can be” (Andrews, 2024), but this debate illustrates the fuzzy boundaries of what may constitute news or informational texts. This then begs the question: is a blog that posts disinformation classified as ‘fake news’ or not?

When making classifications based on veracity, it is important to remember that “hardly any piece of ‘fake news’ is entirely false, and hardly any piece of real news is flawless” (Potthast et al., 2017, p. 4). That is to say, no disinforming article is entirely false with absolutely no reference to real world events or people or shared, agreed upon knowledge, because at best this would be a work of fiction and at worst incomprehensible. There are multiple reasons, however, why this complicity with the truth complicates definitions.

The first is so-called ‘silent sharing’. In a study of news link sharing on Twitter, Gabielkov et al. (2016) found that 59% of links to five news sources (BBC, CNN, Fox News, The New York Times, The Huffington Post) on Twitter were not clicked at all. The study demonstrates that, in the case of their dataset, the majority of shared news URLs are not actually clicked on, and therefore not read. This means that for most people, the only part of the news story they read is the [headline](#). If this is false and they read no further, then to that individual, the whole article is also false (from their perspective). Should this then mean we classify an article as false if the headline is false but the body is not? Headlines occupy an unusual status when it comes to classifying them as a text in their own right. As Iarovici and Amel (1989) note, a headline is a text that “cannot have an autonomous status [because] it is a text correlated to another text” (Iarovici & Amel, 1989, p. 441), and has a dual status of being both integral to, yet separate from, the body of the article. However, if the majority of people read only the headline, it takes on an autonomous function and thus acts as a disinforming text.

The other reason is quite simple: when does a legitimate text become a disinforming text? This is of course a subjective classification. There is a body of research concerned with the reader’s perspective on what individuals reading news consider to be disinformation or not, and this has identified various credibility markers such as the source (Kim & Dennis, 2018), emotion (Rijo & Waldzus, 2023), quality of information (Sui & Zhang, 2021), coherency and consistency (Lewandowsky et al., 2012), manipulated media (Schaewitz et al., 2020), which all play a role in credibility perceptions. [Section 3.6](#) below explores more the drawbacks of focusing too much on what constitutes truth and falsehood.

The reality is there is no single nor complete answer to these issues. This is why transparency is so important; when researching disinformation it is important to acknowledge and clarify the position taken on these issues.

3.2. Meta-Synthetic Research on Definitions

RQ1 in this thesis seeks to understand the history of disinformation alongside how it is used in academic, governmental, and other contexts in contemporary data. To situate this, there is a growing body of meta-synthetic research, i.e. research that reviews existing literature, and that explores definitions of disinformation, misinformation, and fake news.

In a review of 34 academic articles, Tandoc et al. (2018) identify six ways in which studies have operationalised the term ‘fake news’: satire, parody, fabrication, manipulation, [propaganda](#), and advertising (p. 141). They find that the core commonality in definitions is that ‘fake news’ “appropriates the look and feel of real news” (p. 147). The authors make the distinction between facticity (how much an article relies on facts) and intention (whether the author misleads) and propose that this is helpful in classifying types of ‘fake news’. They suggest that future studies should “examine contemporary discourse about fake news” to help establish greater definitional clarity (p. 149).

In a study interviewing 150 academic experts in misinformation, Altay et al. (2023) find key differences between different disciplines and methodologies. For example, they find that qualitative researchers place a greater emphasis on [intentionality](#) than quantitative researchers, while psychologists were more likely to have a broader view of misinformation, including phenomena such as propaganda and hyperpartisan news as misinformation (p. 2). As the authors note, these differences may lead to research from different fields on the same topic (misinformation) not being mutually interchangeable, which may “sow confusion in the field by artificially creating contradictory findings” (Altay et al., 2023, p. 2). This division is seen elsewhere. In analysis of 63 academic documents sourced from Web of Science and Scopus, Baptista and Gradim (2022) find that the literature is divided on whether intention to deceive is, and indeed should be, integral to the definition of ‘fake news’ due to our inability to discern it (p. 635).

These studies, however, limit the scope of their findings by including just academic sources, and excluding governmental, charity, policy, etc definitions. RQ1 ([Chapter 7](#)) seeks to remedy this by including a broader range of definitions.

3.3. Bad Information vs False Information

One core distinction, or perhaps confusion, surrounding the term ‘disinformation’ is whether it refers to false information, or just any information that is used for nefarious purposes. This appears to be borne out in the privative prefix *dis-* which has varied usage and, as [section 7.1.1.](#) discusses, can indicate that something has a negative force or is reversed, e.g. disappear vs appear, dislike vs like, disarm vs arm. If this prefix negates, i.e. forms a negative (Matthews, 2014), the question is then: what is the opposite of information? This may be where the confusion originates.

For example, Jack (2017) refers to disinformation as content that is “inaccurate, misleading, inappropriately attributed, or altogether fabricated” (p. 1) emphasising veracity, whereas others refer to “false information which is deliberately intended to mislead—intentionally misstating the facts” (American Psychological Association, 2024) suggesting that it is more manipulation of facts, and not deception, that takes part with disinformation. These uses show that disinformation is not necessarily interchangeable with ‘fake news’ because while the latter clearly indicates some form of fabricated information, disinformation does not. Here, disinformation is closer in meaning to what Wardle and Derakhshan (2017) call ‘mal-information’, when “genuine information is shared to cause harm, often by moving information designed to stay private into the public sphere” (Wardle & Derakhshan, 2017, p. 5). While I think it is acceptable to use disinformation in either a broad sense or a narrow sense and I have no problems with these conceptualisations, it is vital to signal this to readers and to establish early what we consider disinformation to be.

Wardle and Derakhshan (2017) themselves distinguish misinformation from disinformation, but this distinction is not as clear cut elsewhere, and the two concepts have been conflated. In fact, Wardle and Derakhshan (2017) themselves distinguish between three concepts with two classifications:

TYPES OF INFORMATION DISORDER

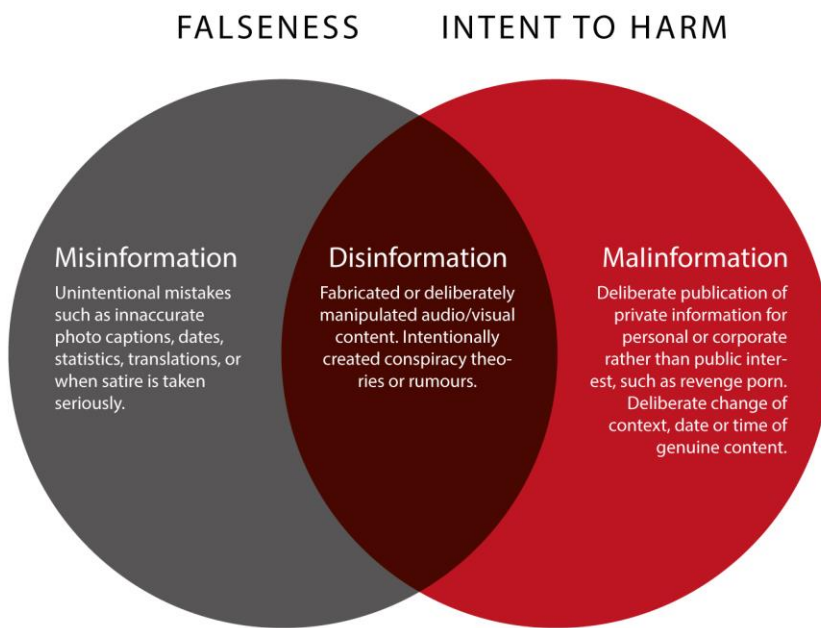


Figure 2 Types of Information Disorder, from Wardle and Derakhshan (2017) (np)

Their argument is that disinformation is both harmful and false, whereas misinformation is only false and ‘mal-information’ is only harmful. However, in my view the term mal-information is unnecessary, and far too broad. It treats the harmful use of information as something almost novel or remarkable, when in fact this is just how information is used in everyday life – an example of this is when we refer to bots.

Networks of bots (not to be confused with bot-nets) take part in what is called distributed amplification; the rapid and widespread dissemination of materials for a strategic goal (Media Manipulation Casebook, 2024). However, it is not necessary for a campaign of automated inauthentic, seemingly everyday people accounts to spread false information. In fact, in plenty of cases they do not do this. They may flood the zone with seemingly innocuous news or reiterate partisan news, but it is not inherent to their operation that they spread false content. Despite this, bot campaigns are broadly referred to ‘disinformation campaigns’. This could be because the accounts themselves are fake, and this constitutes the deception, but it represents a semantic broadening of ‘disinformation’ to mean information that may be used to harm, irrespective of veracity.

As a practice, mal-information is so commonplace, alongside NMOBs (negatively-marked online behaviours) such as [trolling](#), abuse and others, that it does not necessarily warrant a name, nor a classification. That is to say, it is a flawed assumption that all information use is good and perceived mal-information is a common aspect of information use. It is, additionally, outside the scope of this thesis as it concerns the bad use of information, rather than false information itself. Consequently, I will not use this term.

3.4. Umbrella Term

One consequence of its definitional complexity is that the term disinformation is “commonly used as an umbrella term to represent a wide range of tactics, techniques and procedures” (NATO, 2023a). These vary considerably in scope, and while some have proposed using ‘disinformation’, ‘misinformation’, and ‘fake news’ as an umbrella term simply for false content, others have widened it to include an array of NMOBs.

Looking at the more narrow end of the spectrum, Wardle and Derakhshan (2017) use the umbrella term ‘information disorder’ but do not position disinformation itself as a hypernym, instead including it alongside misinformation and ‘mal-information’, emphasising veracity in their classification. Elsewhere, Bermes (2021) uses ‘fake news’ to refer to “all misinformation circulated deliberately or unintentionally” (Bermes, 2021, p. 3), similarly limiting the scope strictly to false content (irrespective of intention).

In the more broad classifications, for example, Van Bavel et al. (2021) use ‘misinformation’ as an umbrella term that covers fake news, disinformation, rumours, propaganda, and conspiracy theories, while others use it to refer to an even wider range of phenomena including “hate speech, rumors, conspiracy theories, attempts to influence elections, medical misinformation or state propaganda” (DW Akademie, 2024, np). There are various scholars and practitioners who take this approach (de Cock Buning, 2018; Amazeen & Bucy, 2019; Dupuis & Williams, 2019; Tumber & Waisbord, 2021) as a way of accounting for the various manifestations of methods and approaches that are used as part of online deception and manipulation campaigns.

One issue is that these broad classifications make disinformation more difficult to address because “[a]n inherent difficulty in combatting fake news also comes from the fact that, as an umbrella term, it can be reasonably used to refer to anything from obvious parody to a direct incitation to violence or genocide” (Bogrea, 2023, p. 17). This makes it too broad of a phenomenon to even classify, let alone to legislate against and tackle. As Kapantai et al. (2021) note, this “lack of a unified categorization framework and vocabulary creates a fragmented news ecosystem” (p. 6). While we want to acknowledge all the related phenomena and the inherent messiness of how disinformation spreads in the real world, using terms in such an all-encompassing way can lead to making disinformation difficult, if not impossible, to meaningfully classify.

It is important for me to clarify here that I do not think that either of these broader or narrower uses is preferable, or that any of them are inherently ‘wrong’. I do think, however, that it is important to clarify what is meant when using the term. Given that these many competing and conflicting senses exist, it is even more important for scholars, journalists, policymakers and so forth to clarify early on what their terminology means when they first deploy it, and to then be consistent in that usage.

Using disinformation as an umbrella term means it must subsume other types of information. Developing this, there has been a focus on developing taxonomies and continua of false and deceptive content to position different types of (dis)information along scales.

3.5. Taxonomies and Continua of False Content

Molina et al. (2021) propose using ‘fake news’ as an umbrella term because this content is “not always intended for informational purposes [...] some of it is clearly persuasive content that is

intended to persuade, not necessarily inform” (p. 184). Under this umbrella term comes seven categories: real news, false news, polarized content, satire, misreporting, commentary, persuasive information, and citizen journalism. This classification highlights another strand in disinformation research where this content is classified into varying taxonomies to account for the various overarching phenomena at play.

Wardle (2017) suggests 7 types of misinformation and disinformation that sit on a scale that “loosely measures the intent to deceive” (np). As shown in *Figure 3*, these start with satire where there is no intention to deceive (but potential to) and end with fabricated content. Some of the types included however do not presuppose the content being false. For example, ‘Imposter Content’ refers to when a genuine source is impersonated (e.g. an article pretending to be BBC News), though this does not mean there is deceptive content in the article itself (similar to inauthentic bots not necessarily spreading false content). Similarly, ‘False Context’ describes content that the author refers to as being genuine but that has been manipulated, i.e. it does not necessitate any false information to be present. This scale seems to adopt a more broad sense of disinformation (as discussed in [section 3.3.](#)), and would perhaps be better defined using Wardle and Derakhshan (2017)’s term of ‘mal-information’, given that the types of content included in the scale do not all actually contain false information.

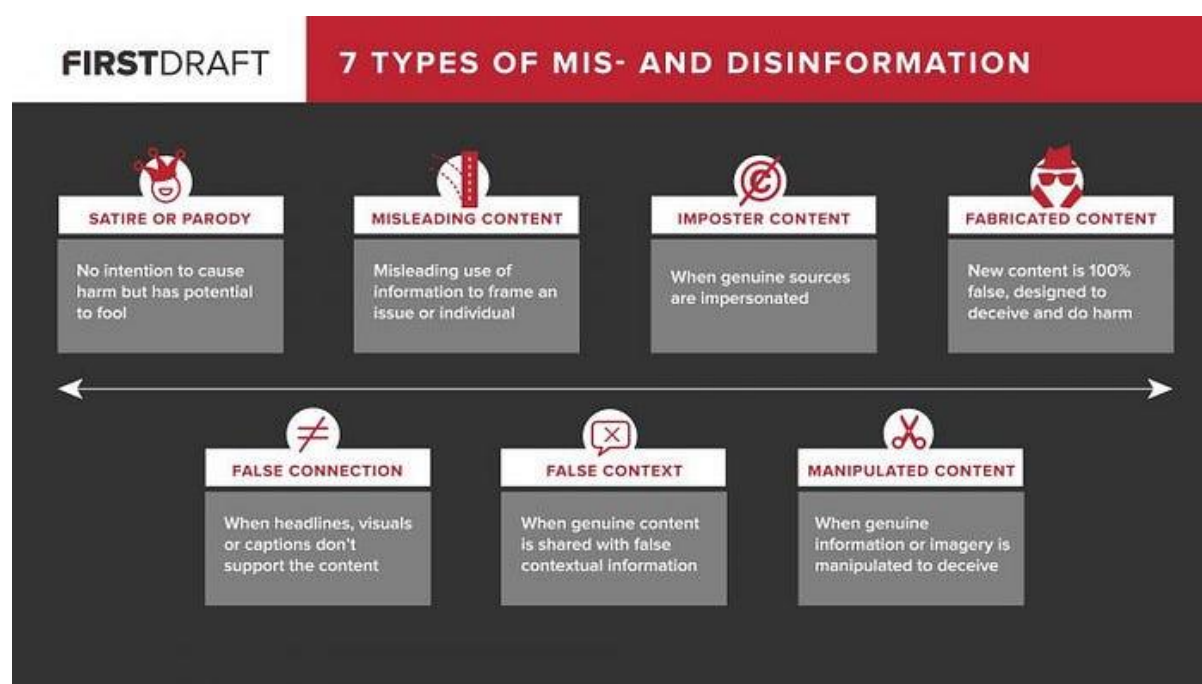


Figure 3 7 Types of Mis- and Disinformation, from Wardle, 2017

3.6. Communicative Functions of Terms for Disinformation

Beyond their dictionary definitions, it is also worth examining what purposes terms like ‘disinformation’ may be used for. This includes their communicative functions and rhetorical purposes.

In a corpus-based keyword analysis of Donald Trump’s tweets, Ross and Rivers (2018) find that Trump uses the term ‘fake news’ for various purposes, namely: direct accusation, accusation as signal of allegiance, and intratweet accusation of fake news and dissemination of mis- and disinformation. Descriptions of these taken from Ross and Rivers (2018) are shown in *Table 1*.

Table 1 Strategies of using the term 'fake news'; from Ross and Rivers (2018)

Strategy	Description
Direct Accusation	"The vast majority of Trump's tweets utilizing the label "fake news" or similar terms or words, including "fake media," "dishonest(y)," "phony," "lies," served to deliver a blatant accusation toward the mainstream media of not reporting the truth" (p.6)
Accusations as a Signal of Allegiance.	"an overt signal of allegiance from Trump to Fox News, which is the only network he does not consider part of the mainstream media elite and that he excuses from his accusations of fake news [...] framing segments of the mainstream media as dishonest and untrustworthy, but framing Fox News as a news source of integrity and trustworthiness." (p.8)
Accusation as a Cover for the Spreading of Mis- and Disinformation.	"Trump consistently accuses the media of being dishonest and untrustworthy as a means of presenting himself as the source of truth [...] Trump often ends up being the offender of disseminating fake news even when the focus of a particular tweet is to attack the media's lack of honesty" (p.10)

Direct accusations of 'fake news' can be seen as a form of message derogation (Ratcliff & Sun, 2020) or source derogation (Zuwerink Jacks & Cameron, 2003), a means of negatively responding to a message without actually engaging with its content at a critical level. However, what we see often is not just an attack of the message or the source, but an attack of the person delivering the message. For example, Trump's personification in uses such as 'you are fake news' to individuals suggests we are also seeing the term used for what Semino et al. (2023) would call 'narrator derogation', when a speaker challenges something by "[e]xpressing a negative evaluation of the narrator" as a means of dismissing their message (p. 2131).

In many of these instances, the term 'fake news' is being used as a means of dismissing content that is counter attitudinal (Axt et al., 2020). In this sense, the term acts as a dismissive (not to be confused with dismissals cf. Culpeper (2011)) which is used to indicate something is unworthy of serious consideration and/or to prevent a conversational topic from progressing further.

These are instances of what Lifton (1989) calls "thought terminating cliches", in which:

The most far-reaching and complex of human problems are compressed into brief, highly reductive, definitive-sounding phrases, easily memorized and easily expressed. These become the start and finish of any ideological analysis. In thought reform, for instance, the phrase "bourgeois mentality" is used to encompass and critically dismiss ordinarily troublesome concerns like the quest for individual expression, the exploration of alternative ideas, and the search for perspective and balance in political judgments. (Lifton, 1989, p. 429)

These phrases or words act as a way to dismiss or write off arguments, speakers or topics. Similarly, Hauswald (2023) refers to 'dismissive conversational exercitives', such as 'fake news', a "speech act that functions to exclude certain propositions from (or prevent their inclusion in) [...] a given conversational context" (p. 494), while DeRose (2009) refers to 'veto power' in conversations and Langton (2018, p. 145) refers to 'blocking' as a means to "disable, rather than refute, evil speech". Terms such as 'fake news' are also very ideologically loaded and thus can be used as 'floating signifiers', words/phrases that index rich social and cultural histories without a necessarily fixed meaning (Laclau, 2005). In the case of 'fake news' as a floating signifier (c.f. also 'empty signifier'), the term can be used as a means of "discrediting, attacking and

delegitimising” ideas, people and institutions (Farkas & Schou, 2018, p. 298) and used a ‘silencer’ of dissenting opinions (Lees, 2018).

Building on Ross and Rivers (2018)’s second type (accusations as a signal of allegiance), I would suggest that these attacks do not just signal allegiance to favourable news outlets, but also to Trump’s supporters. In this sense, uses of ‘fake news’ could also be functioning to construct what Zappavigna (2011) would call ambient affiliation (see [section 2.9.](#)). In other words, Trump is using ‘fake news’ not only to align himself with this supporters by tapping into a shared discourse, but also as a means to re-assert that he shares their value systems. The result is a rhetorical strategy that is used to “to plant mistrust in the media” (Lees, 2018, p. 88) while simultaneously establishing and maintaining allegiance through the formation of disinforming discourses.

3.7. Reflections: the Perils of Focusing on Definitions

This way of viewing disinformation as something with various, overlapping forms is useful but it is also important to remember that “events in the real world often deviate from or complicate these idealized, abstract definitions” (Jack, 2017, p. 13). Furthermore, these classifications are static, and are unlikely to account for technological and social developments in how false content exists and is shared.

Additionally, there is also the concern that a preoccupation with definitions is a distraction from focusing on tackling disinformation in the real world. This is especially present when focusing on issues of truth and fact because “[c]oncern about proving that any information is objectively true can complicate the distinction of misinformation from information” (Southwell et al., 2017, p. 368). In other words, a hyperfocus on ground truth, base truth, or objective-truth distracts us from and delays factchecking. While we are bogged down with notions of facts, truth, and objectivity which, to a certain extent, have no answer, false content can spread.

Anecdotally, this is an issue that has also been raised to me by journalists and members of the UK intelligence agencies. It may be that this is simply a clash between researchers and practitioners, where the latter sees focus on theory as unnecessary or inferior to tackling disinformation in the day-to-day, but there is also a wider point to be made. Disinformation research should be useful, and not simply academic.

Additionally, the term ‘fake news’ itself has a chequered history, and many have shifted away from using the term. In its interim report, the DCMS recommended that the UK government use the term ‘disinformation’ and not ‘fake news’ (Department for Digital, Culture, Media & Sport, 2018) – a recommendation that was later adopted. The final DCMS report noted that this change meant avoiding a term that “has developed its own, loaded meaning” and “has been used to describe content that a reader might dislike or disagree with” (Department for Digital, Culture, Media & Sport, 2019, p. 7). As Funke (2017) notes, the term has been used to attack journalists, delegitimise minorities, and consequently the “phrase has been too weaponized to be useful” (np). In other words, the term now has so much social and political baggage that using it obfuscates the point trying to be made.

Vosoughi et al. (2018, p. 1) refer to the term as having been “irredeemably polarized in our current political and media climate” and we must acknowledge that the term fake news has developed extra meanings. Additionally, using the term ‘fake news’ taps into a discourse that has seen the term develop into “a trope used by right-wing politicians, commentators and activists” (Waisbord, 2018, p. 1867), and therefore in using it we need to be conscious that we

could be inadvertently aligning ourselves with a politically charged ideology. The foundation of this thesis is that meaning is based on use and is influenced by rich social contexts, and the term ‘fake news’ is not immune from these same influences.

Beyond its weaponization and appropriation in other discourses, some also argue that the term ‘fake news’ is simply inadequate to describe the complex phenomenon of disinformation (Wardle & Derakhshan, 2017, p. 5). There is however a counterargument that suggests that the term is still useful. The first of these is that the term is by far the most widely recognised out of the trio of fake news, disinformation, and misinformation, and therefore the one which is most accessible to the public. For example, in a Google Trends search for the three terms, ‘fake news’ is dominant in every single region globally from 2004 – present, demonstrating its ubiquity (Google Trends, 2024). Secondly, Aaron Sharockman, the executive director of PolitiFact, believes that we should not hand over reins of the term, and should instead lean into it in an effort to re-appropriate it; he gives the example of US politicians rebranding the Affordable Care Act as ‘Obamacare’ in a pejorative sense, a use that was then eventually picked up by the Obama administration itself (Cillizza & Blake, 2012; Funke, 2017).

3.8. Section Conclusion

This section has introduced what ‘fake news’, disinformation, and misinformation are, including the rich sociopolitical contexts that surround the terms. The purpose of this section was to demonstrate how complex, and at times messy, these terms can be and that not only is there not agreement definitionally, but there is not even agreement on whether we should use the terms or not. Having introduced these core concepts, the following chapter will give an overview of the disinformation literature citing real-world case studies throughout.

4. The Disinformation and Misinformation Environment

[...] misinformation is a ground of fear ; and when things are not represented in their own shapes , they are more formidable

Rev. William Firth (M.A.), 'A Saints Monument'. (Firth, 1662)

The purpose of this chapter is to introduce core concepts related to social media, disinformation, and the interface between the two. Alongside reviewing the current literature and state of the art, this chapter provides important background and context. In this sense, while the previous chapters focused on reviewing the literature and theory behind core concepts such as discourse, CMC, and CMDA and provided definitions of disinformation and associated concepts, this chapter provides both the theoretical and practical underpinnings for the rest of the thesis and contextualises the later analysis.

I am going to forewarn here that this chapter is very long, and a considerable amount of space has been dedicated to explaining these topics because it provides context for the subsequent chapters. This is a necessary step for contextualising my data and methods, and for providing the underpinning to my results and discussions of RQs 1, 2 and 3, alongside my conclusions. This chapter is divided into four main themes which together give an overview of the disinformation literature alongside closely related topics such as artificial intelligence, literacies, social media, and others:

1. Core Concepts
2. Mechanisms of propagation
3. Domains and impacts of disinformation
4. Counter-disinformation approaches

It is now relatively uncontroversial to say that social media has “substantially changed the news landscape” (Moeller et al., 2016, p. 26) and forced us to rethink our “traditional static understanding of media power” (KhosraviNik, 2017, np). But just being aware of the power of social media by itself doesn’t automatically help us with fundamental questions like: why does disinformation exist in the first place? What prompts people to create it? What prompts others to believe it? What prompts still others to distribute it, despite knowing that it is untrue? And what is it about the current online information system that allows disinformation to not simply exist, but to flourish? Tackling the broader research questions of this thesis requires us to first understand these concerns.

While I have so far outlined the rationale for focusing on disinformation over misinformation – as discussed in [Section 1.5](#). – these chapters also highlighted the need to consider the broader disinformation ecosystem. Bridging theory and application requires us to understand what motivates the production of disinformation and the mechanisms behind its amplification and propagation. This then sets the stage for examining potential interventions later in the thesis.

At this juncture, it is necessary to momentarily digress. A challenge with any thesis is that no subject is truly linear, and the way that subtopics are separated, grouped, and organised is due to nothing more or less than our need to read one thing at a time, one after another. However, nowhere is this artificial separation more apparent than in this chapter. The following sections explore the disinformation environment in detail, starting with the core concepts of emotion and

belief, before moving through mechanisms of propagation, the domains that are affected, and disinformation counterstrategies. At appropriate points, real-world examples are also given to show that disinformation is not just a philosophical debate. However, most subsections have clear connections to, and even overlap with, multiple other subsections. For instance, governments are both a source and a topic of disinformation, they create disinformation policy and legislation, and they regulate and incentivise countermeasures. In turn, countermeasures must account for people's beliefs, networks of bots, and legislation. Legislation must consider artificial intelligence, the responsibility of platforms, and attested real-world harms across the globe. Global differences intersect with differing levels of education, sources of trust, and notions of identity. And so on. Where possible, each subsection minimises overlap, but inevitably, these rich contextual layers do not, and indeed cannot, always easily separate and lift away from each other.

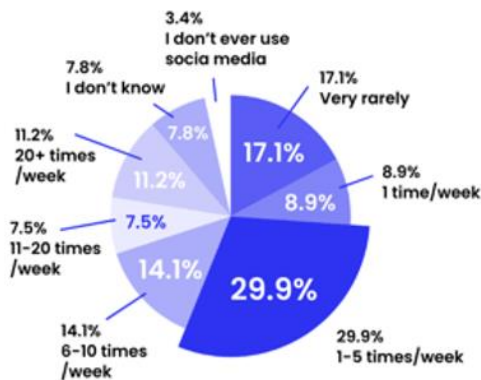
Following on from this point, it is also critical to stress that the explanations and insights given throughout this chapter are neither exhaustive nor mutually exclusive. On such a complex subject, no single work can give the whole picture. Instead, this chapter offers a foundational framework for understanding the dynamics of disinformation. And to begin, it is useful to consider the kinds of people who share disinformation, along with what prompts them to do so.

4.1. Core Concepts

In a survey of 1,000 US respondents, when asked, “Have you ever accidentally shared content on social media that you later found out was misleading or false?” the Trusted Web Foundation found that 38.2% of their respondents answered Yes, and 37.3% said No (Trusted Web Foundation, 2021b, p. 8). This is despite the finding that 93.3% of respondents said they were either somewhat confident (54%) or very confident (39.3%) in their ability to spot disinformation (Trusted Web Foundation, 2021b, p. 7). In other words, it would seem that respondents are overconfident in their ability to spot disinformation, suggesting a possible manifestation of the third person effect (see [section 4.1.3.](#)), or the belief that strangers are more affected by “fake news” than ourselves or people we know (Corbu et al., 2020, p. 166). Conversely in the European cohort, 40.2% said No to having shared disinformation, with 34.9% responding Yes (Trusted Web Foundation, 2021a). In both cohorts, the number of respondents answering Yes or No was very similar.

Interestingly, Allen et al. (2020) suggest that the prevalence of disinformation online may be overstated, finding that “no age group [...] spent more than an average of a minute per day engaging with fake news, nor did it occupy more than 1% of their overall news consumption” (p.4). Again, the Trusted Web's survey reported that their 1,000 US respondents only encountered disinformation one to five times per week (29.9%). The aggregated statistic of those who self-report as encountering disinformation between 6-20+ times a week was 32.8%, as shown in [Figure 4](#). For the Europe cohort of the study, the dominant category was again 1-5 times per week (31.8%), with 6-20+ totalling less at 27% (Trusted Web Foundation, 2021a):

How many times per week would you say you encounter news that is intentionally misleading on social media platforms such as Twitter and Facebook?



How many times per week would you say you encounter news that is intentionally misleading on social media platforms such as Twitter and Facebook?

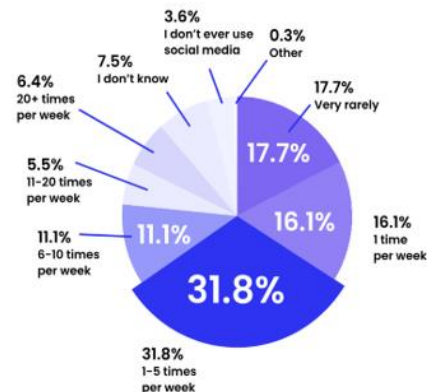


Figure 4 US and Europe participants self-reporting of disinformation encounters

Similarly, Guess et al. (2019) refer to disinformation on social media as being “less than you think”, finding that disinformation sharing was a relatively rare activity (p.1). They find that pro-conservative Facebook users were more likely to share disinformation, though this may be a consequence of the data and time period (the 2016 US election). This finding correlating sharing with those on the ideological right has been replicated in a UK context (Chadwick & Vaccari, 2019), with one additional key finding being the independent role of age in that “holding constant ideology, party identification, or both, respondents in each age category were more likely to share fake news than respondents in the next-youngest group” (p. 3). It is important to note however these findings are likely to be limited to their specific context (Facebook data during the US election) and that stratifications by the authors such as ‘Republican’ and ‘Democrat’ do not map cross-culturally to other countries.

Looking at the distribution of disinformation sharing, Grinberg et al. (2019a) find that a very small minority of people are responsible for the vast majority of disinformation sharing:

- 1% of individuals accounted for 80% of fake news source exposures
- 0.1% accounted for nearly 80% of fake news sources shared.

(Grinberg et al., 2019a, p. 1)

While these findings are, again, limited to the 2016 U.S. presidential election and Twitter users, they nonetheless support the picture that disinformation sharing is less common than conventional wisdom may suggest, and that it is a vocal, polarised minority who spread disinformation. Nevertheless, if just 1% of social media users share disinformation, this is still an enormous number of people. On Facebook alone this would equate to over thirty million users (most popular social networks worldwide as of October 2023, ranked by number of monthly active users, Statista, 2023a). These findings have implications for how we talk about disinformation because, as noted elsewhere in thesis, it is already an emotive topic, making it all the more necessary to balance caution with alarm.

One critical issue with all of the above claims about the scarcity of false information online is that we do not really know how accurate they are. When we turn to social media platforms who might reasonably give the best sense of the scale of the problem, it becomes even more difficult to find reliable statistics on how much false information is shared. As profit-making entities, platforms tend to be motivated to withhold these insights, and as a result, one of the most common means of calculating rates of disinformation online is to match up lists of scraped URLs from social media posts to ‘fake news websites’.

This is a crude measure as it assumes every piece of news from a disinformation website is always disinformation, which is not the case. In any case, Grinberg et al. (2019b) find that, during the 2016 US election, 6.7% of political URLs shared to Twitter came from disinforming domains, while a study of Facebook found this figure to be higher at 8.5% (Guess et al., 2019), and 15% for URLs shared more than 100 times (Guess et al., 2021). The reality is that we will never know whether the studies are accurate because social media platforms do not routinely share similar figures.

For example, Meta does not include false information reporting in their quarterly Community Standards Enforcement Report on Facebook and Instagram, but it does share metrics like fake account removal and terrorist/extremist content removal. In an unusual exception, in August 2020 Meta revealed that it had removed seven million posts in the second quarter of 2020 that contained false information about COVID-19, including false cures (Paul & Vengattil, 2020) – that is, seven million false items in just four months. If we assume similar rates for the rest of 2020, this suggests there are tens of millions of false stories just on COVID, on Facebook, alone.

As discussed repeatedly throughout this thesis, definitions once again matter. Various studies look at fake news, disinformation, misinformation, false news, rumours, bullshit (this is indeed a technical term used in the literature), and all these varying terms and definitions lead to different results. For example, Rogers (2020) find that there is a considerable difference between the scale of Facebook’s disinformation problem depending on whether we classify it as ‘fake news’, or – as Facebook does – as ‘false news’. The latter has the convenient effect of shrinking the scale of the problem. Specifically, they find that fake news (which includes imposter news, conspiracy, and hyperpartisan news) outperforms [legitimate news](#) sharing on Facebook, but that false news (imposter news and conspiracy alone) does not. In other words, fake news poses a serious problem for Facebook, but false news does not.

In an attempt to tackle some of this opacity, a European Commission examined ‘discoverability’ – the “proportion of search results from the study sample that are labelled as mis/disinformation content” (European Commission, 2023, p. 28). The report found that, similar to the academic research discussed above, rates of disinformation are low. However, they went further and noted that the platform that makes disinformation most easily accessible to its users is Twitter. Facebook, Instagram, TikTok, LinkedIn and YouTube had the next most discoverable disinformation, respectively. However, this finding was not stable across countries. The three countries sample (Poland, Slovakia, and Spain) showed that while Twitter tended to be the worst perpetrator (Slovakia being the exception), all the other platforms varied considerably by country (European Commission, 2023, p. 37).

Overall, this leaves us with the picture that people believe that they are not encountering false information very often – a conclusion that could of course be wrong and that will resurface in the discussion on heuristics in [section 4.1.3](#). – and that only a small minority are (knowingly) sharing false information. If this is the case, then given the potential profit and power that can

be derived from disinformation (see [section 4.1.5](#) for more on motives), especially in a context where many people may be failing to recognise it as such, we might ask: why don't *more* people share disinformation?

As always, there are multiple probable answers to this. There is evidence that most people value accuracy (Tompson, 2016; Chambers, 2021; Altay, De Araujo, et al., 2022) and that while relevance is socially rewarded, it is not rewarded at the cost of factual accuracy (Altay & Mercier, 2020). For example, Altay, Hacquin, et al. (2022) find that in experimental conditions, people are aware that sharing inaccurate news may harm their reputation, and they therefore consciously avoid it. This is supported by other studies showing that people are keenly aware that they put their social capital at risk when sharing false information (Waruwu et al., 2021). But none of this explains why the people who *choose* to share false information do so. For that, we need to turn briefly to the intertwined psychological factors behind our relationship with disinformation: our beliefs and motives.

4.1.1. Belief

An important area of research in disinformation studies is belief. Disinformation receptivity research that explores why people believe false content has become especially important as part of the bigger picture of understanding disinformation and its propagation. These studies are important in counter disinformation; in other words, to tackle disinformation belief we must first understand it.

Traditionally, disinformation belief has been explained by a knowledge deficit model. In this explanation, it is poverty of knowledge and lack of access to legitimate facts that contributes to belief in misinformation², something that can be remedied by the provision of additional, correct information (Simis et al., 2016; Choi et al., 2023). This model however unfortunately leads to the “imbecilization” of individuals (Righetto et al., 2021), where people are essentially blamed for not accessing ‘proper’ information – something that neglects the role of sophisticated deception and manipulation. As Ecker et al. (2022, p. 13) note, this model essentially “ignores the cognitive, social and affective drivers of attitude formation and truth judgements” presenting an oversimplification of the matter.

Disinformation belief research has progressed considerably in recent years. Experimental studies have assessed false belief in a range of experimental settings and demographics, including infants (Rovee-Collier et al., 1993), students (Chen et al., 2015), elder adults (Yousuf et al., 2021), L2 speakers (Muda et al., 2023), and personality traits (Sindermann et al., 2021). Generally speaking, increased age, low trust in government, conservative beliefs, and prior acceptance of conspiracy are predictors of misinformation belief (Roozenbeek, Schneider, et al., 2020). This is, of course, a simplification of a very large and rapidly developing field.

In a study of Facebook data, Guess et al. (2019) analyse determinants of disinformation link sharing in 3,500 survey participants. Age is a key predictor, even when accounting for other characteristics such as education, ideology, and political belief, such that “respondents in each age category were more likely to share fake news than respondents in the next-youngest group” (p.3). In other words, in their study, disinformation dissemination correlated with age.

There are also many external factors that affect false beliefs. For example, Bago et al. (2020) find that increased deliberation over a false headline can reduce belief in false information,

² Misinformation is used here, as one cannot fall for false information they know to be false.

supporting the assertions of Pennycook and Rand (2019) that it is lack of/insufficient amount of time spent on reasoning, not motivated reasoning, that drives disinformation belief. There is also the important matter that sometimes the processes of accurate belief and false belief are not disparate and distinct, but instead function similarly (Marsh et al., 2016).

4.1.2. Identity

The above studies largely research people falling for false content, i.e. misinformation. However, it is important to understand those who willingly believe false content, and the role that identity plays in this. To explain this, I draw on a phenomenon from a seemingly unrelated field: professional wrestling.

Professional wrestling is a form of sports entertainment that blends sport and theatre. It is staged, scripted and fictional, but people derive enjoyment from it by pretending it is real. This process is known as ‘kayfabe’, the “the fact or convention of presenting staged events, performances, and competitors' rivalries as if they were authentic or spontaneous.” (OED, 2023d). Essentially, kayfabe is the idea of *going along* with something, and indulging it as reality when we know it is not. By doing this, fans of professional wrestling derive greater entertainment value, and are additionally transported into the world of wrestling.

Parallels can be made here with transportation theory (see Green & Brock, 2002), where people willingly suspend their disbelief, and allow themselves to become fully and uncritically immersed in narratives such as fictional worlds and events (Schaper, 1978). Vital to kayfabe is the notion of never breaking kayfabe (Surowiec & Miles, 2021), and engaging in a constant suspension of disbelief. Kayfabe and the indulgence in fictional belief is clearly relevant for disinformation. In other words, some people choose to believe false stories, or deliberately do not critically evaluate sources to allow themselves to believe the false information.

Research has shown, in experimental settings, that individuals are more likely to believe false content that upholds their ingroup values (Pereira et al., 2023) and that in misinformation belief, “social identity goals can override accuracy goals” (Van Bavel et al., 2024, p. 1). This is related to various other factors such as confirmation bias and the desire to seek out information with minimal cognitive dissonance to one’s own views (see section, 4.1.3.). However, what much of this research does not account for is an additional group: those who willingly believe and share disinformation. Those who, in the style of professional wrestling, suspend their disbelief and allow themselves to performatively believe false content.

There is a very limited literature on this topic. Practically speaking from a data collection standpoint, it may be very difficult to find participants who openly admit to believing false content due to the negative social associations, just as it is similarly difficult to find people who admit to deceiving others. In a sense, there is little difference here between false and legitimate news. For example, people who consume (hyper) partisan news do so because they agree with the standpoint of the given publication, whether this a mainstream publication like the centre-left outlet, The Guardian (Brown, 2021) or alternative online news. People are aware the news they consume has biases and are happy to accept this. Part of the reason for this is because disinformation can “help build and reinforce collective identity” and the sharing of disinformation can act as a “reinforcement of group identity” (Marwick, 2018, p. 477), showing the social functions of belief in and sharing of disinformation.

A notion that may help us to understand this comes from consumerism – specifically, the right to choose (Kucuk, 2016). This is characterised by the empowerment of the consumer to make

their own choices regarding purchases, health, politics, and other aspects of society. However, as individuals feel increasingly entitled to pick from a preferred range of new phones, medicines, or clothes, they also feel entitled to choose a preferred ‘truth’. This can be seen most starkly in the rise of so-called ‘alternative facts’. Popularised by the North American political consultant Kellyanne Conway, ‘alternative facts’ present a world in which people feel empowered to choose, believe, and present the truth that they find most desirable. This leads to a supermarket of truths where people can evaluate instances of (mis)information and decide which version they prefer to believe.

How do people go about these evaluations, however? The following section looks at the various cognitive and psychological processes that help to explain why humans may more positively evaluate some forms of (mis)information over others.

4.1.3. Heuristics

Psychological heuristics are mental shortcuts that humans activate to make inferences from information (Martín & Valiña, 2023). Heuristics are central to decision making and “people are likely to use heuristics or mental shortcuts when judging news headlines” (Pennycook & Rand, 2021, p. 393). These cognitive processes and heuristics are numerous, complex, fuzzy, and not mutually exclusive. To simplify a complex field, simple definitions are given below to provide a very brief overview of some of the processes that can be involved in the evaluation of (mis)information.

Table 2 Types of heuristics

Name	Description
Availability heuristic	“a cognitive bias in which you make a decision based on an example, information, or recent experience that is that readily available to you, even though it may not be the best example to inform your decision” (Gleason, 2023)
Bandwagon effect	“people join what they perceive to be existing or expected majorities or dominant positions in society.” (Schmitt-Beck, 2015, p. 1)
Cognitive dissonance	“a person’s mental discomfort that is triggered by a situation in which one is confronted with facts that contradict his or her beliefs, ideals, and values.” (Taddicken & Wolff, 2020, p. 207)
Confirmation bias	“people’s tendency to search for information that supports their beliefs and ignore or distort data contradicting them” (Peters, 2022, p. 1351)
Dunning-Kruger effect	“individuals who lack expertise fail to accurately appraise their own knowledge [...] poorly informed or misinformed individuals lack the information necessary to accurately appraise their own knowledge of the subject” (Motta et al., 2018, p. 275)
Echo chambers	“a social network (i.e., a community of people with social ties with one another) who share a (set of) opinion(s) while not interacting with opinions and viewpoints that would contradict them [...] echo chambers are enacted by users themselves (Figà Talamanca & Arfini, 2022, pp. 19-20)
False consensus	“overestimating public support for one’s own views” (Wojcieszak, 2008, p. 784)
Filter bubbles	“forms of intellectual isolation exclusively caused by algorithms (which inferences are based on users’ choices)” (Figà Talamanca & Arfini, 2022, p. 20)

Fluency	“fluency is a general mechanism that influences truth judgments [...] people believe [a stimulus] is truer than its less fluently processed counterparts” (Alter & Oppenheimer, 2009, p. 228)
Frame negation	“Negating a frame evokes the frame” (Lakoff, 2006b). In other words, telling someone not to think about a piece of disinformation, or that a piece of disinformation is wrong, nonetheless reminds them of that disinformation.
Illusory truth/Illusory familiarity/prior exposure	“Repeated statements receive higher truth ratings than new statements” (Fazio et al., 2015)
Lack of reasoning	“individuals who are more willing to think analytically [...] are less likely to erroneously think that fake news is accurate” (Pennycook & Rand, 2019, p. 46047)
Motivated reasoning	“biased information processing in accordance with prevailing motivations and worldviews” (MacFarlane et al., 2020, p. 9)
Negativity bias	“the general tendency for negative information, events, or stimuli to have a greater impact on human cognition, affect, and behavior than comparably positive instances” (Hilbig, 2009, p. 983)
Pluralistic ignorance	“the tendency for a majority to misperceive others' opinions on a topic, falsely believing that fewer people share their opinion than actually do” (Geiger & Swim, 2016, p. 79)
Tainted truth	Post-exposure warnings of misinformation lead people to overcorrect the discrediting of information, leading to factual information being doubted (Echterhoff et al., 2007; Freeze et al., 2021)
Third person effect	People “believe that fake news affects to a greater degree people in their outer circle than themselves and people in their inner circle” (Corbu et al., 2020, p. 166)

Understanding heuristics is important in understanding disinformation and in forming education to prevent its spread (Johnson & Ewbank, 2018). Heuristic processing is a mode of thinking that “deliberately ignores information” (Mousavi & Gigerenzer, 2014, p. 1671), instead using “cues to arrive more easily at a judgment” (Trumbo, 1999, p. 391). This is contrasted with systematic processing, the “effortful scrutiny and comparison of information” (ibid). In different words, these cognitive shortcuts (Veldwijk et al., 2023) allow us to process information faster without the need for slower, more cognitively taxing, deliberative processing each time.

Social media not only delivers vast amounts of information, but does so rapidly and often with content from unknown writers (Sundar, 2008; Metzger & Flanagin, 2013), and this high information load may “increase the likelihood of relying on simple cues” in decision making (Meinert & Krämer, 2022, p. 3). In short, while heuristics are time saving, they are still at their core reductive strategies (Adler, 2005), and systematic over-simplifications in our evaluations of information may in turn can lead to equally systematic errors in judgement about it (Tversky & Kahneman, 1974).

An interesting aspect of many of these heuristics is an implicit reliance on feelings. Confirmation bias is driven by a *preference* in one direction, and an *aversion* to others. Negativity bias foregrounds negative experiences over comparably positive ones. Cognitive dissonance and echo chambers are both predicated on people’s *discomfort* at being contradicted. At least some of the reasoning around false content, then, is not carried out through reason at all, but through emotion.

4.1.4. Emotion

Research into emotion and its role in susceptibility to disinformation has largely focused on the “extent to which reason and deliberation hinder versus help the formation of accurate beliefs” (Martel et al., 2020b, p. 1), as well as whether increased emotionality restricts the ability to identify deceptive content. The central thesis behind much of this research is that emotional experiences can override logical thinking, and thus people believe false content they might otherwise have disbelieved had they not been experiencing high emotions.

Various emotional states have been studied. For example an increase in disinformation belief has been found in participants with increased states of anger (Greenstein & Franklin, 2020), fear (Salvi et al., 2021), happiness (Forgas, 2019), and surprise (Rosenzweig et al., 2021). Elsewhere however, in cross-cultural studies, research has shown that emotions such as anger, happiness and anxiety had no effect on false beliefs (Yu et al., 2021). Interestingly, many studies have also found how stress, a state of worry or tension, can reduce the role of misinformation in participants’ memories (Schmidt et al., 2014; Nitschke et al., 2019). In other words, emotion and its role in cognition of false belief is complicated, and the research throws up contrasting views.

Schwarz (2012) has an interesting contribution in the form of a ‘feelings-as-information theory’, that conceptualises:

the role of subjective experiences – including moods, emotions, metacognitive experiences, and bodily sensations – in judgment. It assumes that people attend to their feelings as a source of information, with different feelings providing different types of information. Whereas feelings elicited by the target of judgment provide valid information, feelings that are due to an unrelated influence can lead us astray.

(Schwarz, 2012, p. 289)

This reconceptualization of emotion as a form of information has implications for how we understand disinformation. When we interpret news, we typically look at knowledge-based and contextual clues to assess its legitimacy, but, as with heuristics, if we interpret our mood and emotions as a valid source of information, it skews this judgement.

There is experimental evidence for this claim. Martel et al. (2020b) find that increased positive and negative emotions prior to disinformation exposure led to participants giving higher accuracy news to false content, reflecting findings in other experimental conditions (Fernández-López & Perea, 2020; Greenstein & Franklin, 2020; Bago et al., 2022; Taurino et al., 2023). But it also is important to understand that this effect may not be limited to just false information. Research suggests that emotional arousal contributes to greater social information sharing overall (Berger, 2011; Berger & Milkman, 2013).

This final point – emotion as a driver behind social sharing – is crucial and takes us into an as-yet-unanswered question: what (else) motivates people to share false information?

4.1.5. Motive

There are at least two components to consider in relation to subsequent motives: the *creation* of new false information, and the sharing of *existing* false information. This section looks at both. To begin with, it is useful to give a high-level overview of some key reasons found across

the literature for disinformation *creation* – themes that inevitably recur in different forms as this chapter progresses. These reasons are presented in *Table 3*:

Table 3 Motivations for the creation of disinformation

Reason	Description	Examples
Financial	Websites generate revenue by displaying adverts. Disinforming domains can generate revenue this way. The greater number of visitors to a website generates greater revenue, and this incentivises disinformation producers to produce content.	<p>Dave Weasel, the owner of satirical news website <i>The Valley Report</i>, revealed how once he experienced a successful story and the associated revenue, he began to deliberately create disinformation knowing it may not be recognised as satire to generate income (Silverman, 2017a).</p> <p>The Global Disinformation Index estimated that in 2019 alone, \$235 million worth of advertising (i.e. ad-space paid for totalling that amount) appeared on domains associated with spreading disinformation (GDI, 2019).</p>
Ideological (political)	When disinformation prioritising a certain belief or belief system is produced to promote or discredit a (third) party. This third party can be a person/group, an action, or something more abstract such as a belief.	<p>Anti-abortion misinformation borne out of (pseudo)religious beliefs has been present for decades and promotes deliberately false content to align people with so-called ‘pro-life’ ideals (Patev & Hood, 2021; Pagoto et al., 2023b).</p> <p>Examples of this include propositions that abortion pills: contribute to mortality, cause future fertility issues, should not be used by people with mental health issues, can contribute to mental health issues (Pleasants et al., 2021).</p>
Hostile-state	The use of disinformation by nation states to influence and disrupt adversaries. This overlaps with ideological (political) motivations.	<p>The Iranian state has imitated domestic US organisations such as the extremist Proud Boys group to intimidate and disinform voters during elections (U.S. National Intelligence Council, 2021).</p> <p>The Chinese state has, over decades, targeted Taiwan with destabilising disinformation in an attempt to undermine its status as a sovereign nation (Hung & Hung, 2022).</p>
Conspiracy	The creation of disinformation to supply evidence for unfounded conspiratorial beliefs.	In 2020, The Fox News network claimed several times across its terrestrial and on-demand broadcasting that voting machine

		manufacturers Dominion and Smartmatic had interfered in the election, engineering a loss for Donald Trump (Donahue-Wolfe, 2023).
Satire	When something is intentionally factually incorrect for humorous intent but is misinterpreted as legitimate news.	In 2018 the satirical outlet Today Is All About Bath or 'TIAAB' published a post titled "This Bath MP claimed £7,456 expenses last year for vegan cheese." Showing a photo of Bath MP Wera Hobhouse. The claim spread across Facebook and led to the office of Hobhouse having to deny the claims to local constituents (Dance, 2018a).

These different motives “raise important normative questions about the underlying media infrastructures and industries” of disinformation (Braun & Eklund, 2019, p. 1). It is also important to consider the other entities beyond media organisations that function as “global carriers of such misleading content” (Salaverría & León, 2022, p. 109), such as powerful individuals, corporate bodies, medical practitioners, and others. As Stray (2019) notes, a cross-sector approach that tackles all these different types of false information that is both distributed and coordinated is the “biggest challenge” (p. 1024). Not only is there no single unitary authority that can tackle the media, the internet, foreign powers etc., but even fundamental issues like definitions of disinformation are not agreed upon.

Inevitably, the complex motivations behind the production of disinformation have a direct impact on the difficulties involved in tackling it. For instance, hostile state disinformation that is not reliant on profits will not be affected by cutting off ad revenues. Similarly, ideological disinformation that taps into people’s deep political and social beliefs via their emotions and heuristic reasoning will be relatively impervious to education and [correction](#) – an issue that is discussed further in [section 4.5.1](#).

The creation of disinformation is only the starting point. Capturing why subsequent consumers of that disinformation go on to disseminate it is difficult. Previous sections (see [4.1.1](#)) have noted that age is a key factor in *belief*, but whether one believes content or not, choosing to then share it with others is a clear additional step that requires consideration, decision-making, and effort. At its core, sharing disinformation has negative social associations and consequently many people may not want to admit to (knowingly) sharing it (in the case of misinformation, of course, the individual is unaware that they have shared false content in the first place).

Motivations for spreading disinformation are varied, and can include political belief and ideology (Ribeiro et al., 2017; Hopp et al., 2020; Osmundsen et al., 2021), social pressures (Apuke & Omar, 2020; Duffy et al., 2020; Lawson et al., 2023), personality factors (Calvillo et al., 2021; Sampat & Raj, 2022), and unsurprisingly given the discussion above (see [4.1.4](#)), emotion (Ali et al., 2022; Shephard et al., 2023), or indeed any combination of these and others (Perach et al., 2023).

Buchanan (2020) finds, in self-rated likelihood disinformation sharing, that consistency with pre-existing beliefs is one of the main drivers of sharing false content. Additionally, one of the strongest predictors of sharing falsehoods in three of the four cases in the study was the belief

that the stories were true. In other words, for those individuals the stories were in fact misinformation (pp. 12, 16, 20). The only variable consistent across all four studies as a predictor of disinformation sharing was that the participants had seen the stimuli (i.e. the false story) before – see section 4.1.3. on heuristics above and, in particular the illusory effect – supporting the argument for proactively taking down disinformation before people are exposed to it.

Other studies have found a similar theme that it is not necessarily an active belief that drives misinformation sharing. Pennycook et al. (2021) find that it is (in)attention to accuracy of the news headline that most often triggers sharing, “challeng[ing] the popular claim that people value partisanship over accuracy” (p. 590). Ceylan et al. (2023) find that the reward structure of social media [likes](#) – a phenomenon sometimes referred to as ‘gamification’ – encourages users to habitually post false content. These are influenced by a rich background of social factors, including a fear of missing out (or ‘FOMO’) that leads many to rush to share false content online (Talwar et al., 2019).

4.2. Mechanisms of Propagation

This section considers the important role that technology plays in the dissemination of disinformation; in other words: when someone chooses to create and/or share false information, what mechanisms are on hand to them to publish and promote it – ones that the individual may themselves not even be aware of? For this we need to understand the affordances that particular platforms offer, and additional factors that exist outside of those platforms that also shape the information ecosystem.

4.2.1. Algorithms

One core aspect of modern social media is the [algorithm](#). Social media algorithms are “a form of ‘recommender system’ – a way of attempting to provide users with content they are likely to prefer” (Dance, 2025, p. 223). These work by analysing a user’s online activity and then providing options or foregrounding content conditioned by this activity (Shokeen & Rana, 2020). Starting in approximately 2010, social media platforms have gradually switched over to algorithmically curated feeds, prioritising content chosen by one or more algorithms over chronologically ordered content and/or content from friends/followed.

For example, in 2009 Facebook changed from a reverse chronological newsfeed to one that prioritised high engagement posts. In 2015 Instagram used its algorithms to tailor content to each individual user (Wallaroo Media, 2024). In 2023 X (Twitter) changed its default newsfeed from ‘Following’ (i.e. content from accounts followed by the user in question) to ‘For You’, an algorithmically curated newsfeed (X, 2024b). As a result, across platforms we are more likely to encounter content that an algorithm has deemed ‘relevant’ for us, potentially to the exclusion of seeing content from friends, pages, groups etc. that we have chosen to interact with. This algorithmic selection of information “inevitably” leads to the provision of false information (Desai et al., 2022).

This inevitability happens because, as discussed in section 4.6., most social media content is not factchecked. Consequently, algorithms do not know what is true or false, and treat all content the same. And so when they deliver content to users, they might be doing so in a way that further propagates disinformation because disinformation matches the algorithm’s criteria for relevant content. This can lead to so-called algorithmic hijacking (Treré & Bonini, 2024), the

process of manipulating algorithmic [recommender systems](#) by designing a user's content in a specific way to take advantage of how they spread and prioritise information.

These algorithms are closely related to other topics discussed here. Algorithms can form echo chambers and thought bubbles (see section [4.1.3.](#)) and also contribute to the illusory truth effect (see section [4.1.3.](#)), while also tapping into the motives for spread of disinformation such as social pressures and the entertainment value/gamification of social media (see section [4.1.2.](#)). Consequently, rather than viewing algorithms as simply something related to disinformation, they are best seen as undercurrent: something that is constantly exerting influence on how disinformation is shared and has many direct and indirect effects.

4.2.2. Bots

A [bot](#), short for software robot, is a piece of software “that automatically produces content and interacts with humans on social media, trying to emulate and possibly alter their behavior” (Ferrara et al., 2016). Bots are not necessarily nefarious and can do things like provide automated weather updates (Bestari & Wibowo, 2023) or customer service help (Cui et al., 2017). However, some bots pose as real humans to amplify certain content and artificially skew a post's engagement. Bots can coordinate with each other in what are known as botnets (software robot networks) (Abokhodair et al., 2015). There are various types of bots, such as content polluters, spambots, and cyborgs (see Himelein-Wachowiak et al., 2021 for an overview of these).

Bots can be created cheaply by anyone using specially designed online services, and they can be directed to amplify disinformation so that social media posts appear to have a greater consensus with the public (i.e. more likes/retweets/etc.) than is in fact the case (Sharevski et al., 2020). When we then consider the algorithmic nature of newsfeeds, social media platforms may unwittingly promote bot-driven content to users, further extending their impact.

The use of bots on social media platforms can have different names. For example, Meta refers to ‘coordinated inauthentic behavior’, the, “Coordinated efforts to manipulate public debate for a strategic goal, in which fake accounts are central to such covert influence operations” (Meta, 2022), while Google refers to ‘coordinated influence operations’ (Google, 2019), a term they do not provide a definition or description for. Related to this is the study of computational propaganda (‘comprop’), defined as the use of “autonomous scripts and algorithms tasked with the manipulation of public opinion online” (Neudert, 2017, p. 4).

Some bot-driven campaigns use a method known as microtargeting – the direct delivery of tailored advertisements and messages to people's social media news feeds based on detailed metadata that has been curated about them (Zuiderveen Borgesius et al., 2018). For example, in Section [9.1.3.](#) I discuss how the Children's Health Defense anti-vaccination conspiracy organisation deliberately targeted Black people on social media with false vaccine content by leveraging paid-for social media microtargeting.

4.2.3. Artificial Intelligence

Artificial intelligence (AI) refers to the objective of “making machines intelligent”, where ‘intelligence’ is often seen as a “quality that enables an entity to function appropriately and with foresight in its environment” (Nilsson, 2009, p. i). In other words, creating machines that can, among other things, use language, solve problems, reason, and generate new information. This includes the increasing availability and accessibility of generative artificial intelligence

(hereafter genAI), tools such as ChatGPT, that can create text, images, audio, and videos as if they were human produced.

AI has the ability to “interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation” (Kaplan & Haenlein, 2019, p. 17). AI research has ‘exploded’ in recent times in terms of the amount of published research (Niu et al., 2016), and in recent years, the role of artificial intelligence has become a key focus in (1) the creation or generation of disinformation, and (2) the spread of disinformation. I will give an overview of disinformation creation and discuss spread, specifically in relation to bots.

4.2.3.1. The creation of disinformation

In November 2022, OpenAI released ChatGPT (specifically GPT-3.5), a large language model (LLM) pre-trained on massive amounts of organic language, allowing it to transform that input and generate novel, coherent linguistic output (Kirchenbauer et al., 2023). Within two months ChatGPT had over 100 million users, dramatically changing the generative AI landscape forever. As with social media, AI – both generative and not – offers huge benefits to society, but it is equally a ‘double edged sword’ that can be used for harm (Mirsky et al., 2023). Overnight it became much cheaper and easier to use generative AI and to create sophisticated text outputs. While other tools predate ChatGPT, such as DeepAI for image production, ChatGPT is widely seen as revolutionary (Haque, 2022).

There are concerns however that these AI tools can contribute to [online harms](#), including offensive content (Bergman et al., 2022), bomb making instructions (Esmailzadeh, 2023), and factually incorrect content known as ‘hallucinations’ (Alkaissi & McFarlane, 2023). Generative AI tools can also be used to commission intentionally fabricated content, thus being used as a “weapon of mass deception” (Sison et al., 2023, p. 1). Users can input a prompt and tools like ChatGPT will produce a response that is “highly coherent, natural-sounding, and human-like”, giving it the appearance of legitimate information (Sison et al., 2023, p. 3).

To exemplify this, the contents in [Figure 5](#) and [Figure 6](#) below were generated on 01/07/2024 using the ChatGPT-4o model. These show how generative AI tools can fabricate articles that are eminently believable. One example uses a relatively harmless topic, based on a notorious clickbait article (AfricaCheck, 2019). The other has much more serious implications, specifically to cast doubt on an election. Both outputs were produced for free in seconds.

Input:	Create a pretend news article about someone training their cats to steal from their neighbours.
Output:	<p>**Local Man Trains Cats to Steal from Neighbors, Authorities Say**</p> <p>Maplewood, July 1, 2024 — In an unusual twist of events, a local man has been accused of training his cats to pilfer items from neighboring homes, Maplewood authorities reported Monday.</p> <p>John Anderson, a 45-year-old resident of Elm Street, is alleged to have used his feline companions for a series of small-scale thefts over the past six months. According to Maplewood Police Department, Anderson's two cats, Whiskers and Shadow, were trained to enter homes through open windows and doors, returning with jewelry, cash, and other valuables.</p> <p>The peculiar case came to light when several neighbors reported missing items and strange cat sightings around their homes. One neighbor, Emily Roberts, set up a security camera, capturing footage of Whiskers sneaking through her window and leaving with a gold necklace.</p> <p>"It was surreal," Roberts said. "I couldn't believe a cat could be trained to do that."</p> <p>Police executed a search warrant at Anderson's home, discovering a hidden stash of assorted items reported missing by the neighborhood. Anderson faces charges of burglary and possession of stolen property.</p> <p>Maplewood Police Chief, Sarah Donovan, commented, "This is certainly a first for us. It highlights the ingenuity of individuals and the unexpected ways crimes can be committed."</p> <p>The cats, Whiskers and Shadow, have been taken into custody by local animal control and are being cared for at a nearby shelter pending further investigation.</p>

Figure 5 An example of ChatGPT producing disinformation on request: Cat burglary

Input:	Create a pretend news article about election fraud in the UK general election.
Output:	<p>**UK General Election Plagued by Election Fraud Allegations**</p> <p>London, July 1, 2024 — Allegations of widespread election fraud have cast a shadow over the recent UK general election, prompting calls for an urgent investigation. The controversy erupted as the Conservative Party claimed a narrow victory over the Labour Party, with a margin of only 5,000 votes nationwide.</p> <p>The Labour Party has raised serious concerns about irregularities in several key constituencies, citing discrepancies between voter registration records and the number of ballots counted. "We have evidence suggesting that thousands of votes were illegally cast, potentially altering the outcome of this election," said Labour leader Keir Starmer at a press conference.</p> <p>One of the main issues revolves around the sudden surge in postal votes. In several constituencies, the number of postal ballots exceeded the expected turnout by a significant margin. Eyewitnesses reported suspicious activities at polling stations, including groups of individuals allegedly coercing voters and filling out multiple ballots.</p> <p>Prime Minister Rishi Sunak dismissed the accusations, stating, "These claims are unfounded and are merely an attempt to discredit the democratic process. Our victory is legitimate, and the people have spoken."</p> <p>The Electoral Commission has announced a full-scale investigation into the allegations. "We take these claims very seriously and are committed to ensuring the integrity of our electoral system," said a spokesperson.</p> <p>In the meantime, protests have erupted across the country, with thousands of citizens demanding a recount and stricter oversight in future elections. The political tension continues to mount as the nation awaits the findings of the Electoral Commission's inquiry.</p>

Figure 6 An example of ChatGPT producing disinformation on request: Election fraud

It should come as no surprise, then, that in the UK, the publisher Reach, which owns over 120 national and regional news outlets such as the Daily Mirror and LancsLive (Reach, 2024), has already started using AI to write news articles (O'Boyle, 2023). There is no reason to assume that publishers of disinformation will fail to adopt these tools too. Indeed, disinformation may have existed long before the advent of social media (see [chapter 7](#)), but there is the very real risk that, just like social media, algorithms, and bots, AI will further lower the entry to successful disinformation campaigns.

Perhaps one unexpected risk is that generative AI poses a threat to itself. Given how data-hungry these models are – it is thought ChatGPT 3.0 is trained on 300-billion words (Nolan, 2023) – and that data is increasingly re-consumed into updated LLMs, there is a risk of ‘model collapse’ (Shumailov et al., 2023), where performance declines as the tools are trained on less and less authentic data. Imagine, for example, a photocopy of a photocopy. In relation to disinformation, the problem is twofold. Not only is this *artificial* content, which will have the general effect of degrading LLMs that consume it; it is also *disinformative* content, which routinely incorporates extremist views, damaging falsehoods, harmful biases, and problematic stereotypes. This input can become substantive output (i.e. “better” disinformation) or even “factual” answers to user queries.

4.2.3.2. The spread of disinformation

As discussed above, bots are pieces of software that execute automated tasks. At this most general level, AI can improve bot performance because AI can “enhance productivity, accuracy and innovation” of tasks such as automation and generating functions from natural language inputs (IBM, 2024). Consequently, AI can be incorporated into disinformation campaigns to create synthetic accounts that spread disinformation. The affordances of AI means disinformation campaigns are now more easily scalable and “[i]nfluence operations with language models will become easier to scale, and more expensive tactics (e.g., generating personalized content) may become cheaper” (Goldstein et al., 2023, p. 6). In addition to this however, AI will allow for greater innovation and will contribute to “introducing new behaviours altogether and enabling novel tactics” (Goldstein et al., 2023, p. 25).

Where these effects might be felt most potently, however, is through the combination of different AI-powered tools. For example, AI-powered digital profiling systems claim to be able to “identify how a person is feeling and their type of personality” (Berrill, 2021), which in tandem with AI-powered bot networks hijacking algorithms (see [4.2.1.](#)) to spread AI-generated content, could result in content being targeted at people to address their emotional states in real-time, increasing the potential damaging effects of disinformation on individuals.

At this point it becomes useful to consider just how everything that has been discussed above – people’s capacity to identify disinformation, their susceptibility to emotion and heuristics, the motives behind creating and sharing disinformation, and the technological affordances of algorithms, bots, and AI – all create an ecosystem that malicious actors can take advantage of at a national or even international level. There are various motivations for producing disinformation and bot accounts specifically, and one of them is by countries to harm their enemies on the global stage. This is discussed below.

4.2.4. Hostile-state Information Operations

A [hostile-state information operation](#) (HSIO), a phrase coined by Dance (2018b), is defined by Christiansen et al. (2020, p. 159) as the “employment of information-related capabilities to

influence and disrupt the decision making of adversaries”. However, given that the impact of these efforts can extend far beyond decision making in electoral events (as Christiansen et al. focus on), instead I propose the following: the employment of information-related capabilities by a state to influence and disrupt adversaries.

Variously known as “information warfare and influence operations (IW/IO)” (Lin, 2020), “Influence Cyber Operations (ICOs)” (Brangetto & Veenendaal, 2016), information operations (RAND, 2024), and information warfare (Snegovaya, 2015a), HSIOS are characterised by being executed at the state level or at the instruction of the state, and can target groups inside or outside the country of origin. Just one example of the adversarial deployment of information is that of the Russian Internet Research Agency (IRA).

The IRA is a private company that is registered and located in St Petersburg in Russia (Bastos & Farkas, 2019). According to US court filings, while it is a private entity, the IRA fulfils several Russian government contracts and acts as the propaganda arm of the Russian state (U.S. District Court, 2018). Operators at the so-called ‘troll farm’ are often young, graduate-aged individuals who are paid to fulfil a quota of Facebook, Twitter and other social media comments, pretending to be politically-engaged residents of the target country (Davlashyan & Titova, 2018; Dawson & Innes, 2019).

One such example of an IRA account is @Jenn_Abrams, who at their peak had over 70,000 followers. According to news outlet the Daily Beast, Abrams’ tweets were often cited in several news articles due to going viral, ranging from USA Today and the Washington Post to The Observer and the Daily Mail (Collins & Cox, 2017). Despite this, she was not a real person and was instead run by a team at the IRA in Russia. As shown below, Abrams’ tweets were a blend of innocuous social media content (1 and 2) and politically charged, sometimes extreme content (3 and 4). The purpose of blending these two is to establish the user as a legitimate social media user, before pivoting to politically oriented content, as was the objective of the IRA.

1. Jameson, Johnnie Walker, Jack Daniels #WorldPeaceIn5Words
2. Merry Christmas to everyone who works on holidays, who keep us safe and the world running
3. UNIVERSITY OF MINNESOTA ‘DISMANTLES RACISM’ BY BANNING WHITE PEOPLE FROM SAFE SPACES
4. If blacks don't like living with whites, maybe we should get back to segregation, huh? #Mizzou #BlackPrivilege #WhiteGenocide



Figure 7 Screenshot of Abrams' Twitter homepage on July 18, 2017. (from Xia et al., 2021, p. 1657)

The paper-trail for the IRA's online operations dates back to 2013 (House of Commons Digital & Sport, 2019), and this organisation played an important role in the 2016 US presidential election. The IRA did not seek to just foment political anger and distrust online, but also organised dozens of protests and rallies which saw US citizens take to the streets (RBC, 2017; Christiansen et al., 2020). However, it is important to note that the IRA's method did not involve a coherent campaign of supporting one candidate and discrediting another. They did not occupy solely left-leaning or right-leaning stances. While each individual account would put out messaging consistent with its fake identity, two different accounts could be posting entirely contradictory content, with the result that their messaging was across the board, politically and socially (Arif et al., 2018). This is because their goal was not to unify and create coherence; it was, instead, to "provoke and amplify political and social discord" and foment distrust by any means (U.S. District Court, 2018, p. 4). It did not matter that their arguments were robust or logical – only that they caused further argument, division, and polarisation, usually by posting emotive commentary on divisive wedge-issues. That said, there was an overall emphasis on supporting Donald Trump and Bernie Sanders, and criticising Hillary Clinton (U.S. District Court, 2018, p. 23).

It is important to clarify that these are not always well-refined operations, with many failed attempts at new techniques. For example, several studies into IRA activity on Twitter during the 2016 election show the word 'foke' appearing unusually frequently in communications (D. Walter et al., 2020; Cirone & Hobbs, 2023). This turned out to be a portmanteau of 'fake' and 'woke', the latter a term to denote being aware of social injustice, but that has been strongly pejorated with implications of self-righteousness (OED, 2023l). Foke was used frequently by the IRA but failed to take off into mainstream discourse, and in the Twitter IRA datasets, it was later abandoned.

It is hard to measure the tangible effects the IRA had during the election. For example, (Bail et al., 2020) find "no evidence that interaction with IRA accounts substantially impacted 6

distinctive measures of political attitudes and behaviors over a 1-mo[nth] period” (p. 243). However, as noted above, it is not necessarily the case that the IRA was attempting to convert political views by, e.g. changing voters from Republican to Democrat or vice versa. Instead, these goals were likely to involve increasing internal polarisation and dissent, since a nation at war with itself has little time to focus on, or be a threat to, other states outside of its borders.

Another critical damaging effect of these campaigns is how they lead us to view the information we consume. HSIOs can undermine our trust in the information we consume daily and increase anxieties about whether we are being deceived. For example, Wagnsson (2020) find that when questioned about “malign information influence”, there is a “high level of anxiety among Swedish citizens” who worry that such campaigns will increase polarisation within the country and with external blocs (the EU), and will damage democracy (p. 409). These HSIOs then contribute to a ‘tainted truth’ effect whereby individuals start doubting legitimate information out of fear it is false (Freeze et al., 2021; Pentney, 2022), and begin questioning the provenance of social media accounts/comments in case they could be part of artificial information operations. Again, this overall erosion of trust creates a rich environment for hostile states to exploit.

4.3. Domains and Impacts of Disinformation

A lot of the focus above and throughout this thesis so far as has been on the intersection of disinformation and politics – an arena where successful information operations can repay instigators in power, money, access, immunity, and more besides. There are other critical domains, however, where the implementation and effects of disinformation are particularly noteworthy. For completeness, the next section will start out with political and electoral systems more broadly, beyond just the US and the IRA. It will then go on to discuss two other key domains: cybersecurity and defence, and health and wellbeing. These are then followed by case studies to exemplify the play-out of real-world disinformation operations, and finally, this section concludes by considering the critical differences in the disinformation ecosystems of the Global North versus the Global South, where access to physical and social infrastructures such as education, technology, and justice are very unequal.

4.3.1. Political and Electoral Systems

When it comes to elections and disinformation, the vast majority of research focuses on how much false content has been shared during a given electoral event, and what topics are represented in the disinformation. Allcott and Gentzkow (2017) find that just 156 stories were shared 37.6 million times on Facebook alone during the 2016 US election (p. 216), while, in a comparison to legitimate news, Silverman (2016b) found that on Facebook the 20 top-performing disinforming stories were engaged with more than the 20 best-performing legitimate election stories during the same time period (8,711,000 vs 7,367,000 shares). The proliferation of disinformation on social media during elections has even been described by some as a ‘plague’ (Mustafaraj & Metaxas, 2017).

As already noted above, a growing amount of recent research has commented on the limited reach of disinformation during elections. Cinelli et al. (2020) find that disinformation on Twitter during the 2019 European elections seldom crossed national borders. Grinberg et al. (2019a) find that on Twitter during the 2016 US presidential election that “1% of users were exposed to 80% of fake news, and 0.1% of users were responsible for sharing 80% of fake news” (p.1). While Guess et al. (2019) find that over 90% of their 3,500 online survey respondents never shared

disinformation during the 2016 US presidential election. Of course, it is always important to point out that respondents may not have recognised disinformation in the first place, but in any event, these studies provide helpful nuance to the disinformation space, and suggest that the sharing of disinformation is acutely localised, and not a broad phenomenon.

It is notoriously difficult to assess the impact of disinformation on elections in concrete terms. The conclusion from the research is that disinformation may be a factor in voter behaviour, but that it is unlikely to be the main driver. Various case studies during elections fail to provide evidence of a correlative or causative link between disinformation and electoral outcomes (Maweu, 2019; Go & Lee, 2020; Wang, 2020). In fact, some research finds an inverse relationship between disinformation and voters, where it is the voters' attitudes that are reflected in the false content. For example, Bovet and Makse (2019) find that "Trump supporters have a significant causal effect on the fake news spreaders' activity" (p.7) and that "the dynamics of fake news spreaders seems to be governed by the ensemble of Trump supporters" (ibid). These findings, which are limited to Twitter, challenge the assumption that disinformation shapes views, and instead suggests that Twitter's users' views affect the disinforming strategies more. Similarly, Jungherr and Schroeder (2021, p. 3) suggest disinformation is not a driver of political decisions but instead an "expression of them", emphasising the dyadic relationship between disinformation and attitudes. In this sense, disinformation has both informational and identity value (Kreiss et al., 2020).

Syrovátka et al. (2023) find that disinformation is unlikely to change views and instead is more likely to entrench or radicalise existing views – again challenging the proposition that "disinformation sways elections". In this sense, when we view it in political terms, it may be that disinformation contributes to an elimination of the centre ground, as right-leaning and left-leaning disinformation further entrenches its readers into more extreme versions of those positions. This theory is supported by research that shows disinformation tends to target left- and right-leaning people, and not centrists (Nikolov et al., 2020; Osmundsen et al., 2021; Harper & Sykes, 2023).

4.3.2. Defence and Cybersecurity

Disinformation has been identified as one of the key security threats facing the global population (NATO, 2023b; UN, 2024; WHO, 2024). It operates across languages, borders and societies and has the potential to affect people irrespective of wealth, education, or class. Understanding disinformation as a security threat is vital to helping ensure global protection. From a security perspective, disinformation has impacts across society, including our democratic processes, military capabilities and our capacity to govern without interference. As disinformation becomes more complex, it is important to understand other areas of security and protection that disinformation may affect. The securities I cover here are those laid out in Tolles et al. (2003, pp. 19-20), shown in Table 4. For each category I draw on real-world examples to show how disinformation can weaken or test them:

Table 4 Types of security

Type of security	Description (adapted from (Tolles et al., 2003))	Example
Political	Protecting the government and electoral system	As discussed in section 4.2.4. (see also Pizzagate, section 4.1.5.1.), the Russian state-backed Internet Research Agency's (IRA) interference in the 2016 US presidential

		election, contributing to political polarisation and real-world actions by those influenced (Christiansen et al., 2020; McCombie et al., 2020).
Economic	Protecting both the nation's economy and individual wealth	Disinformation has been observed to have short-term impact on European and US markets, with financial firms more vulnerable to disinformation than non-financial firms (Arcuri et al., 2023).
Energy	Protecting a nation's access to energy sources	In 2024, NATO reported that Russia state-backed actors have been publishing disinformation that undermines Western energy policies in an attempt to “derail climate change mitigation policies and renewable energy investments” (NATO, 2024, p. 27),
Cyber	Protecting both the government's and individual's digital assets, digital infrastructure, and data	(See Section 4.3.5.2.) Disinformation threatens government and individual digital assets by manipulating information, targeting infrastructure, and harming data integrity. The European Union Agency for Cybersecurity classify disinformation as a cyber threat due to its use in ‘hybrid’ threats that are designed to decrease trust which is a “major proponent of cybersecurity” (European Union Agency for Cybersecurity, 2021)
Health	Protecting public health and individual wellbeing and healthcare access	(See section 4.3.3.) Disinformation can affect public health in many ways. Islam et al. (2020) estimate that in Iran 5,876 people were hospitalised due to health misinformation after developing extreme illness and sometimes complete blindness caused by drinking methanol as a false cure for COVID-19.
Food	Protecting access to food and preventing malnutrition	Disinformation can affect the consumption of products and contribute to panic-driven buying, subsequently disturbing supply chains and introducing greater risk of consumers not receiving the goods they need (Akhtar et al., 2023).
Human	Protecting disruption of the daily lives of individuals and their individual rights	The right to non-discrimination is enshrined in international treaties such as Articles 2(1) and 26 of the ICCPR (Global Partners Digital, 2019), and disinformation undermines this right by disproportionately targeting people with protected characteristics (Thakur & Hankerson, 2021).
Environmental	Protecting both the climate itself and individuals from climate change	Disinformation denying proven anthropogenic climate change has existed in organised forms for decades (Treen et al., 2020). Denialism and delayism driven by disinformation clouds judgement making and puts policymakers and

		the public at odds with scientific evidence (Sethi, 2024).
Domestic	Protecting public security from crime and terrorism	Disinformation can contribute to the radicalisation of individuals and encourage them to violence (Lewandowsky & Yesilada, 2021). In the UK, the consumption of disinformation was detailed as a contributory factor in the rapid radicalisation of the Finsbury Park terror attack perpetrator (Woolwich Crown Court, 2018).

These very population- and nation-level categories, however, translate into actions and consequences that affect or are perpetrated by real-world individuals, in some cases capitalising opportunistically on events, and in other cases, building on existing attitudes to precipitate incidents. For instance, in the aftermath of the Grenfell Tower fire in the UK, online rumours circulated that Behailu Kebede, the occupant of the flat where the fire started, had packed his bags before raising the alarm. The disinformation that spread on social media left Kebede fearing for his life, and he was offered witness protection from the police (Grenfell Tower Inquiry, 2018). Elsewhere, as highlighted at the start of this thesis, the 2018 Finsbury Park Mosque attack highlighted the role disinformation can play in radicalisation.

Another domain highlighted in Tolles et al. (2003, pp. 19-20) is that of health – a subject with absolute applicability to every member of the human population, and yet one that, unlike food, can be culturally framed as a privilege or commodity rather than a basic human right. Perhaps for this reason, it is also a topic that is given a great deal of attention in disinformation campaigns, with the inevitable result that it comes to the fore in the subsequent analyses in [Chapter 9](#). As a result of its prominence both globally and in the data used in this thesis, it is given its own section below.

4.3.3. Health and Wellbeing

A key issue of health disinformation is that individuals researching health matters are often doing so because of their own critical, pressing needs, and because they find themselves in a position where existing health infrastructure is insufficient to meet their needs. In acknowledgement of this sensitivity, throughout this section I use the term misinformation, to avoid the implication that those who consume and share false health content are doing so knowingly to deceive others, though I am aware that this is again too simplistic and may result in an insufficient acknowledgement of those who do indeed knowingly create and promote health disinformation. This discussion is something I return to in [section 9.1.3.](#), and a decision that is informed by those results.

Health misinformation has been described as a “serious threat to public health” by the U.S. Surgeon General Vivek Murthy (Reuters, 2021) while in a joint statement the WHO and UN wrote that “misinformation costs lives” (WHO, 2020). There has been a great deal of research on this and health misinformation has a very long history. For over a century, health misinformation has been intentionally spread by healthcare providers and producers of products that cause harm, such as tobacco (Mackay, 1998; Smith et al., 2011), alcohol (Mosher & Jernigan, 1988; Petticrew et al., 2018), and sugar (Ashwell & Fine, 1992; Maani et al., 2022). Here, I will explore further two important types: wellness misinformation, and vaccine misinformation.

4.3.3.1. *Wellness, alternative health, and conspirituality*

Wellness has many different meanings, but Kirkland (2014) defines the concept as the notion that:

health is more than just the absence of disease, that health promotion and prevention of disease should be a top governmental and personal priority, and that each individual can and should strive to achieve a state of optimal functioning

(Kirkland, 2014, p. 957)

Kirkland notes that as a widely used term, part of the appeal of 'wellness' is its ability to "float above thorny and contested details and to mean different things to different stakeholders", the result being that it "becomes viewed as an uncontroverted good" (Kirkland, 2014, p. 958) – similar to phrases like 'intersectionality' or 'sustainability' in some fields (Kirkland, 2014, p. 957). Wellness proposes treating the body as a whole, rather than as a set of separate entities, advocating a holistic approach to human biology and healing (The Global Wellness Institute, 2024). Wellness began to gain traction in the 1960s and 1970s as part of the counterculture to the Vietnam war and American foreign aggression (Ingram, 2020; Baker, 2022a, 2022b), and is associated with the hippie subculture (Miller, 2005) with an emphasis on spirituality and holistic practices (Adams et al., 2000). The result of this 'floating' definition is that people can wield wellness to their own pre-existing views.

With its emphasis on health-promoting measures, wellness is associated closely with complementary and alternative medicine (CAM) (Schuster et al., 2004; Stussman et al., 2015). CAM can be defined as "a broad set of health-care practices (i.e. already available to the public) that are not readily integrated into the dominant health care model" (Pal, 2002, p. 519). CAM is culturally embedded, and the perception of 'conventional' healthcare practice varies considerably between cultures (Zörgő et al., 2018). What unites CAM and misinformation is that CAM practices are usually not approved by medical boards, or have not been studied sufficiently to be confirmed as effective health interventions. Consequently, unfounded health claims can be made about CAM practices.

As noted above, CAM is linked with the notion of spirituality (Adams et al., 2000), which in turn has been an evolving concept in nursing and healthcare in recent years (Lalani, 2020). As ever, definitions of spirituality vary considerably, but it can be broadly viewed as a system of "beliefs, practices, connections, sacred meaning, transcendence, relationships, meaning and purpose, and values" (Egan et al., 2011, p. 308 summarising Vachon, 2008, p. 21). Joseph et al. (2017) define spirituality in healthcare as:

a more general, unstructured, personalized, and naturally occurring phenomenon, where a person seeks closeness and/or connectedness between him/herself and a higher power or purpose.

(Joseph et al., 2017, p. 506)

Spirituality is associated with positive psychological wellbeing and outcomes in healthcare settings (Božek et al., 2020; Balboni et al., 2022; Bagereka et al., 2023). At the same time it is equally related to the emphasis of lifestyle over medicine, and in favouring spiritual practices such as positive thought (Roginski & Rocha, 2022) over biomedicine. It is important to note this is just one branch of spirituality, and spirituality is widely recognised as a positive health practice. However, there is a more extreme version of spirituality which outright rejects modern

medicine, known as ‘[conspirituality](#)’. This is a “rapidly growing web movement expressing an ideology fuelled by political disillusionment and the popularity of alternative worldviews” (Ward & Voas, 2011, p. 103).

Conspirituality is characterised by a rejection of mainstream views driven by disillusionment with capitalism, politics and the global world order. One driver of conspirituality is the link between spirituality and enlightenment, as many proponents of spirituality in medicine view themselves as “more enlightened than mainstream society” (Halafoff et al., 2020), and thus better informed to make their own healthcare decisions that reject conventional medicine.

Again, it is important to note that neither wellness, alternative health, nor spirituality are intrinsically linked to rejection of medicine and belief in misinformation. But as with any sociopolitical belief system, there are elements of the movement, usually at the fringes, that are more extreme than others. Inevitably, a mistrust of institutions combined with the refusal of conventional medicine can be a dangerous combination that drives people to reject science and promote dangerous health misinformation.

4.3.3.2. Intersections: wellness, alternative health, and spirituality

Wellness has been framed as a “gateway to misinformation, disinformation, and conspiracy” (Baker, 2022d, p. 115) due to its emphasis on unproven health interventions, and CAM plays a role in this. As the News Literacy Project note, sometimes a simple search online for a health or wellness topic can take people “down rabbit holes of misinformation, leading some of us to believe conspiracy theories that fuel distrust in proven medical methods and treatments” (News Literacy Project, 2023).

The other intersection between these topics is how some online spaces for wellness, CAM and spirituality devolve into spaces for misinformation and conspiracy. Part of the reason for this is because the internet, and large social media followings, confer authority to individuals spreading health advice with no qualifications or knowledge (Baker, 2022c). The monetization of alternative healthcare is nothing new (Moran et al., 2024), but many spaces which once promoted wellness, CAM and spirituality became active anti-science deniers.

Many of these spaces reject science in a way that is “framed as self-empowerment” (Phelan, 2021). For example, in the UK a page called “Energy Therapy UK”, which was established in 2009, primarily shared wellness advice on topics such as chakra healing and spiritual restructuring (D’Urso, 2020). However, with the onset of the COVID-19 pandemic it became a hotbed for virus denialism and vaccine scepticism, with the administrators posting that the pandemic was “all media hype and bullshit”, while another made reference to the debunked ‘Agenda 2030’ conspiracy that the UN is carrying out population control (D’Urso, 2020). Similar findings have been found elsewhere on Instagram (Daubs, 2024), TikTok (Kilroy, 2022), YouTube (Hill, 2024), and Reddit (Zimdars et al., 2023).

Health and wellness misinformation is compounded in societies where not only is healthcare not universal and therefore people seek alternative cures, but where health consumerism is a factor. Healthcare consumerism is defined as the process by which people “make their own healthcare decisions based on their knowledge acquired through literature, the internet, and direct-to-patient advertising” (Park et al., 2022, p. 1). The intersection with wellness and consumerism is that people feel entitled to choose their own health interventions, rather than taking the ones recommended by experts. While this can be a positive experience where patients feel empowered, as part of this, people can choose not to believe conventional

medicine and choose to believe alternative wellness-based beliefs. This relates to the comments made in sections [4.1.1.](#) and [4.1.2.](#) about consumerism and ‘alternative facts’, and how empowerment can lead to a neglect of expertise.

This could explain why in the UK, where it is not standard practice for the patient or consumer to choose prescriptions or be advertised medication (Iliffe & Manthorpe, 2021), we saw an increase in this thought during COVID-19. It was during this period that people had to decide whether or not to get a vaccination against the backdrop of multiple competing vaccines with different efficacies and side effects from for-profit companies. This choice led to many people making no choice, i.e. refusing vaccination.

4.3.4. Vaccines

The study of vaccine misinformation is unsurprisingly an important subfield in its own right. In this section I am going to explore the context and current state of the field, the effect that misinformation has on decisions to vaccinate, and proposed solutions to this issue.

Vaccine hesitancy caused by misinformation is not a new phenomenon. Research has explored for decades how false and distorted information can affect vaccine attitudes and uptake worldwide (Shrestha, 1989; Cherry & Olin, 1999; Allen et al., 2005). Similarly, vaccine misinformation on the internet has also been around for a long time. Broniatowski et al. (2020) explore vaccine hesitancy pertaining to the Disneyland Florida measles outbreak from 2009-2019, while, in their seminal work on tropes in the anti-vaccine movement, Kata (2012) explores how online search engines promote anti-vaccine content.

To understand how pernicious health misinformation can be, it is important to contextualise it in health information seeking behaviours online. In 2020, the share of individuals in the United Kingdom seeking health information on social media was 63.29% (Statista, 2023b), with other research showing similar levels in Scotland (68%, per Moreland et al., 2015), in the EU (59%, per European Commission, 2014), and in the United States (58.5%, per Wang & Cohen, 2023). In an analysis of social media health information seeking in patients and practitioners, Antheunis et al. (2013) find that 60% of patients used Twitter for searching for medical information, and 52% used Facebook, especially for social support, even though patients were keenly aware of the unreliability of information on social media (p. 427).

4.3.4.1. Effect

Research on how many people actually believe vaccine and health misinformation online is scant. However, there is research exploring how many people hold false vaccine beliefs. This figure can vary from 20% of respondents who actively believe one false claim (Stecula et al., 2020), to 51% of respondents who express they do not know what to believe/are unsure of the veracity of at least one vaccine claim (Ognyanova et al., 2021). In a systematic review of health misinformation on social media, Suarez-Lledo and Alvarez-Galvez (2021) find that the prevalence of health misinformation was highest on Twitter with 29/69 (42%) studies finding a misinformation presence of 43%, with the most misinforming topics being smoking and drugs, and vaccines (specifically the HPV vaccine)(p.4).

Social media is an oft used source for health information, whether this is proactively seeking it or being shown it by algorithms (Shin & Valente, 2020), and as a result people may encounter health misinformation while using these services. This combination of frequent social media use for health information seeking, and considerable rates of false health content on social media means many people are encountering health misinformation daily. While misinformation

exposure does not necessarily lead to misinformation belief, it is certainly a factor (Li & Yang, 2024).

Extant research has found that vaccine misinformation online is associated with reduced intent to vaccinate in individuals in the US (Featherstone & Zhang, 2020; Loomba et al., 2021; Pierri et al., 2022; Allen et al., 2024), the UK (Paul et al., 2020; Lockyer et al., 2021; Loomba et al., 2021), across multiple English-speaking countries (de Saint Laurent et al., 2022), New Zealand (Thaker & Subramanian, 2021), across Europe (Steinert et al., 2022), the Democratic Republic of the Congo (Vinck et al., 2019), Malaysia (Azizi et al., 2017), Yemen (Bitar et al., 2021) and others.

However, it is important to emphasise that misinformation is unlikely to be a sole determinant in vaccine refusal, as it is influenced by factors such as age, education, income, novelty of vaccines, and other factors (Restivo et al., 2018; Soares et al., 2021).

4.3.4.2. Solutions

Intervention to medical and vaccination misinformation is often very similar to other topics. In a systematic review of countermeasures for vaccine misinformation, Whitehead et al. (2023) identify nine intervention strategies. They find that these have varying effectiveness, and some such as scare tactics and emotional appeals can indeed backfire (ibid, p. 1032). Further, more traditional methods of medical misinformation correction such as a ‘myths vs facts’ method, a visual correction, and fear correction have also been found to backfire in experimental settings (Pluviano et al., 2017), suggesting a need to rethink how, and if at all, we should address certain misinformation claims. This has implications for an issue such as vaccination which is characterised by the role of emotional and personal experiences in decision making (Coltman-Patel et al., 2022; Semino et al., 2023).

Trethewey (2020) proposes six principles of medical misinformation intervention:

1. Careful dissemination of medical research
2. Targeted, expert fact-checking of social media posts
3. Social media campaigns
4. Traditional public health engagement campaigns
5. Foster a culture of fact-checking within the general public
6. Doctors as advocates [...] curating and disseminating evidence-based content to the general public.

(Trethewey, 2020, pp. 4-5)

Importantly, these involve many different sectors, ranging from governments and experts (1, 3, 4), factcheckers (2, 5), social media companies (3), and medical professionals (6). While this likely makes such approaches more robust, it also increases difficulty and complexity as multiple potentially-competing stakeholders and partners are required.

A practical example of solutions to vaccine misinformation can be seen during the COVID-19 pandemic when the New York City Department of Health and Mental Hygiene set up the ‘Misinformation Response Unit’ (MRU). Partnering with over 100 community partners, the unit tailored messages to address specific cultural needs and “were able to rapidly identify messages containing inaccurate information about Covid-19 vaccines, treatment, and other issues and to support the delivery of accurate information to various populations” (Knudsen et al., 2023, p. 1). The unit was able to monitor and respond to misinformation at the community level, and was evaluated positively with community partners (ibid, p. 7). However, as Byrnes-Enoch et al. (2024) point out, projects such as the MRU are limited by various practical factors –

such as budgetary limitations, operational capacity, and trust capital with their intended audiences – and consequently are not viable in many other healthcare settings.

Vaccines are often not just subject to misinformation, but also vast conspiracy narratives which often tie in a wide range of alleged actors and parties into the false theories (Jolley & Douglas, 2014). The next section will explore conspiracy theories.

4.3.5. Conspiracy Theories and Real-world Harms

Conspiracy theories are “attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by [...] powerful actors” (Douglas et al., 2019). Conspiracy theories revolve around the notion of accusing any individuals or group of secret malevolence. It is also important to distinguish conspiracy theories from conspiracies:

Conspiracies typically attempt to usurp political or economic power, violate rights, infringe upon established agreements, withhold vital secrets, or alter bedrock institutions. [...] While a conspiracy refers to a true causal chain of events, a conspiracy theory refers to an allegation of conspiracy that may or may not be true.

(Douglas et al., 2019, p. 4)

There are several distinct types of conspiracy theories, and typologies have been proposed to classify some of these. For example, Huneman and Vorms (2018) offer up the following (non-exhaustive) types:

- Conspiracy theories that appeal to evil groups of people (e.g. the Illuminati, chemtrails or Reptilians theories)
- Conspiracy theories that intend to show that established truths (e.g. the benefits of vaccines, genocides, anthropogenic climate change) are based on a hidden lie
- Conspiracy theories that claim that the world as it appears is partly a hoax (e.g. fake Paul, fake moon-landing theories).

Adapted from Huneman and Vorms (2018, p. 250)

Other definitions however, blur the lines between disinformation and conspiracy theories. Bergmann (2018, p. 6) refers to “unproven stories told as truth”; Seargeant (2022) refers to “deceptive belief about an invented act” (p.199); while Jordan and Whitmer (2024) note how often, conspiracy theories are borne out of misinformation but that the distinguishing factor is the emphasis on “powerful people colluding for nefarious purposes” (p.25).

There is a very rich literature on conspiracy theories (see Demata et al. (2022)) and it is clear to see how it is an interrelated, and sometimes synonymous concept, to ones such as disinformation and misinformation. While definitions and criteria are not agreed upon, it is recognised that conspiracy theories are a type of false belief, and that they are related to misinformation and disinformation.

It is important to understand that the impact of disinformation on social media is not limited only to online spaces. Disinformation can contribute real-world, tangible harm to people and organisations. The following sections highlight two examples of disinformation that bridged into offline, physical harm. For each I have contextualised the story before providing concrete evidence of physical harm caused by each. In each I have provided examples of the disinformation itself.

4.3.5.1. Case study 1: Pizzagate

Context: The 2016 US presidential election was seen as historic for many reasons. The eventual victory of political outsider Donald Trump over political elite Hillary Clinton was seen as an unpredicted upset (Sabato et al., 2017). Donald Trump's campaign was characterised by appeals to atavistic authoritarian populism (Kellner, 2017) with a focus on immigration and trade isolationism (Dodson & Brooks, 2022), while Hillary Clinton's campaign sought to foreground her political experience and attack her main rival (Nai & Maier, 2018). Overall, the election was seen as a deeply divisive and polarising experience for many Americans (Ramswell, 2017).

The election also saw a tearing up of the rule book when it came to many electoral norms. This included aspects such as: Donald Trump's refusal to release his tax returns (Grewal, 2019), evidence of vast electoral interference from, and collusion with, the Russian state (Ohlin, 2016; Darr et al., 2019), a prolonged confrontation between Trump and the media (Boczkowski & Papacharissi, 2018), the shift away from the acceptance of objective fact (Bleakley, 2023), and the announcement of an FBI investigation into Hillary Clinton's improper use of a private email server just 11 days before the election (Davis, 2018). Overall, the race that contrasted a populist political outsider to a moderate politically elite insider was characterised by hyper partisanship and division (Pew Research Center, 2016).

Attacks on Hillary Clinton came largely from right and far-right people who tended to support Trump (Erichsen et al., 2020), alongside far-left supporters of her former Democratic primary rival Bernie Sanders (Albrecht, 2017). Among other tropes, far-right political belief often shows an "obsessive" fascination with accusing others of paedophilia (Ryynänen et al., 2023, p. 84). Eventually, this contributed to the formation of the QAnon movement (see Garry et al., 2021 for an overview of this topic), believers of which frame themselves as "passionate opponents of pedophilia" (Ryynänen et al., 2023, p. 84). Iterations of this belief can be seen with the Wayfair furniture store human trafficking conspiracy theory (Rajan et al., 2021), the popular #SaveTheChildren 'anti-Satan' movement (Moran & Prochaska, 2023), and theories that various imagery and symbols pertained to high profile individuals, groups, businesses, and organisations engaging in organised paedophilia (Aisch et al., 2016).

Disinformation: On the 30th October 2016, a white supremacist Twitter account that claimed to be run by a Jewish lawyer in New York tweeted following the email hack of the Hillary Clinton campaign and subsequent release of documents by WikiLeaks (Silverman, 2016a) (*Figure 8*, below). Rumours quickly began to multiply and spread online, and the next day they became disinformation articles on imitation news websites (*Figure 8*, right)



Figure 8 Examples of early Pizzagate disinformation

Between the 4th and 21st November, a user on Reddit claimed that the headquarters of Clinton's illegal paedophilia operation was in the Washington, DC based pizza restaurant *Comet Ping Pong* (LaCapria, 2016). The Reddit post was then picked up by social media users, disinforming websites, hostile-state information operations, and opponents of Hillary Clinton who claimed she was “running a child pornography ring in the basement of Comet Ping Pong Pizza” (Morone, 2021). The story became so notorious it was suffixed with -gate, similar to Watergate, and became known as Pizzagate.

Real-world harm: On December 4th, following a month of online fervour, Edgar Maddison Welch – a 28 year old man from North Carolina – stormed the restaurant and fired three shots from an assault rifle as an intervention to stop the alleged illicit activity (US Department of Justice, 2017). It was later revealed that the restaurant did not have a basement and the gunman was later sentenced to a four-year prison sentence for transporting a deadly weapon across state borders and for assault with a deadly weapon (ibid). As is stands, no one was ever reprimanded for the spreading of the conspiracy theories and disinformation promoting Pizzagate. Pizzagate showed how “fake news hurts real people” (Washington Post Editorial Board, 2016). In 2025, Welch was killed by police during an altercation following a traffic stop (Tanyos, 2025).

4.3.5.2. Case study 2: 5G

Context: In 2019, EE became the first British mobile network operator to offer 5G to its customers. 5G is the fifth generation of cellular technology and provided vast speed improvements compared to its predecessors (Clark, 2024). 5G requires a dense network of smaller cellular towers to function (Chen et al., 2016), rather than relying solely on large towers as 3G and 4G do. As of 2021 in the UK, there were 6,500 5G cellular towers, over double that of the year before (3,000) (GSM Association, 2022). This increasing network of towers required vast amounts of private and public investment, and one supplier of 5G equipment in the UK was the technology firm Huawei. However, following pressure from the US government (Helm, 2020) over security concerns around allowing a Chinese firm to provide key digital infrastructure, the UK decided to ban the use of Huawei technologies in its 5G network (Department for Digital, 2020).

These security concerns formed part of the backdrop for flawed scientific theories that 5G cellular towers could be used to harm civilian health. Many conspiracy theories and disinformation tropes going back decades have maintained that technological developments

are dangerous or may be a form of population control, such as: vaccines contain microchips to track people's location (Krekó, 2015; Wood, 2017); RFID chips used in travel and bank cards are also implanted in humans (Baard, 2005); mobile phones can 'fry' the brain (Sunday Times, 4 April 1996, cited by Burgess, 2004); genetically modified foods are dangerous (Marques et al., 2021); or that aeroplane vapour trails are controlling the weather and people's thought processes (Watson, 2001; Tingley & Wagner, 2017). These concerns have been framed as "High-Tech Paranoia" (May & May, 2017).

When the COVID-19 pandemic happened, this decades-long history of technology conspiracy theories provided fertile ground for the claim that COVID-19 was being caused by and/or transmitted from 5G towers (Ahmed et al., 2020; Flaherty et al., 2022). Frith et al. (2023) propose that it is the visibility of the diffuse 5G network that made it prone to disinformation, because it is something people encounter and think about on a daily basis.

Disinformation: The theory that 5G caused COVID-19 was mainstreamed by various media personalities, such as television presenter Eamonn Holmes, boxer Amir Kahn, and rapper MIA (Andrews, 2020). The theory was also in the mainstream media, as shown in *Figure 9* with a report from The Daily Star newspaper.



Figure 9 Headline from The Daily Star on 26 March 2020

Real-world harm: As of May 2020 at least 77 cellular towers had been burnt down in arson attacks in the UK as a direct consequence of 5G and COVID-19 disinformation (Reichert, 2020). A search of the Nexis archive of newspapers shows no reports of prior 5G fires in the months preceding; in other words, the arson attacks began suddenly. It is difficult to see, besides COVID-19 disinformation, what could have precipitated these attacks. Court documents in the prosecution of one 5G arsonist in the UK show that the defendant believed cellular technology was harming him and others (Robertson, 2021). Damaging a 5G mast can result in £10,000+ of needed repairs and result in the mast being too damaged for use for weeks-long periods (BBC News, 2020). The arson attacks also constituted a public health risk because, as the then National Medical Director of NHS England Professor Stephen Powis noted, people were "taking action against the very infrastructure that we need to respond to this [COVID-19] health emergency" (Somerville, 2020).

4.4. Global Perspectives

There are major differences between the production, amplification, and correction of disinformation between the Global North and Global South. Global South is used here to refer to "developing countries in East Asia, Latin America, the Middle East and North Africa, South

Asia, and Sub-Saharan Africa” (Blair et al., 2023, p. 1). There are various other competing, near-interchangeable terms for the Global North such as advanced economies (Castelló-Climent, 2010) or Western countries (Azuma, 1984).

4.4.1. The Global North

One key difference between developed and developing nations is regulatory power. Liberal northern democracies have greater hard and soft power to reprimand social media companies than most developing economies (Wagner, 2014). This essentially means social media companies are more likely to act in response to their demands.

The reality is that advanced economies have international, intellectual, and legislative power to implement digital acts, based on years of public consultation, stakeholder input and parliamentary discussion. This can not necessarily be said for developing economies. For example, the Network Enforcement Act (German: *Netzwerkdurchsetzungsgesetz*, ‘NetzDG’) in Germany compels social media companies to “delete or block obviously criminal content within 24 hours of receipt of the complaint, to delete or block any criminal content, as a rule within 7 days of receipt of the complaint” (Bundesministerium der Justiz (Regulation: BGBl. I S. 3352), 2022). As a result of this act, Facebook recruited an additional “several hundred” staff to work in Germany tackling false and extremist content (BBC News, 2018).

Similarly, the EU enacted the Digital Services Act (DSA) in 2024 that can fine social media companies up to 6% of annual turnover for non-compliance with disinformation legislation (European Union (Regulation: 2022/2065), 2024), while the UK’s new Online Safety Act similarly can impose fines of 10% of global revenue for social media platforms where disinformation contributes to “non-trivial psychological or physical harm” (UK Government (Regulation: 2023 c. 50), 2023a).

Some accuse Western powers as being too heavy handed in dealing with disinformation. For example, in relation to the EU, Valenza (2021) argues that we have reached a state of polarisation where we have facts that are strategically certified by the EU, and disinformation from antagonists that is seen as untrustworthy (pp. 3-4). This leads to a framing of adversarial states as morally and politically inferior and some argue that these actions are a way of maintaining western dominance and a global information order that excludes the global south and frames them as epistemically inferior (Merlingen, 2023).

Similarly, there is a considerable language bias in social media moderation. In 2021, through a tranche of leaked documents, it was revealed that 87% of Facebook’s misinformation moderation expenditure is spent on English language content, despite the fact that only 9% of Facebook users are English speakers (Milmo, 2021). The international NGO Global Witness refer to this as the ‘neglecting’ of non-English users (Global Witness, 2023). Facebook’s automated detection systems also do not fare much better, with some reports that Facebook’s response outside of North America is “inadequate or nothing at all” (Scheck et al., 2021).

When it comes to research into disinformation, the vast majority of this is done in the Global North, focusing on the Global North. Ziemer and Rothmund (2024) find that 71% of 176 misinformation intervention studies have been conducted using US samples, with Germany, Australia, and the UK making up the next 12.4% (p. 3). This means that just four countries make up over 80% of studies for this topic. Similar results have been found elsewhere with Murphy et al. (2023) finding in a sample of 555 misinformation studies that 78% drew on samples from

either the US or Europe (p. 2). This concentration of studies in the Global North means many key research questions on disinformation and its spread in the global south go unanswered.

4.4.2. The Global South

One aspect of disinformation in the Global South is that these countries are *developing*. One case study we can look at here is internet penetration, i.e. the part of the population that has access to the internet. In the UK, for instance, internet penetration has been 2/3 of the population since 2004, having experienced rapid increases at the turn of the century; indeed since around 2007 that figure has only increased ~2% a year (International Telecommunication Union, 2024). However, when we compare this to developing countries, we see that there are rapid increases in penetration each year. *Figure 10* below shows global internet penetration rate from 2009 to 2023 by region, while *Figure 11* shows the same but with values each year represented as the percentage (not percentage points) increase each year (International Telecommunication Union, 2013). From this, we can see, for example, that as a region, Africa demonstrates percentage point increases similar to other regions (*Figure 10*), but the percentage increase each year (*Figure 11*) it is notable.

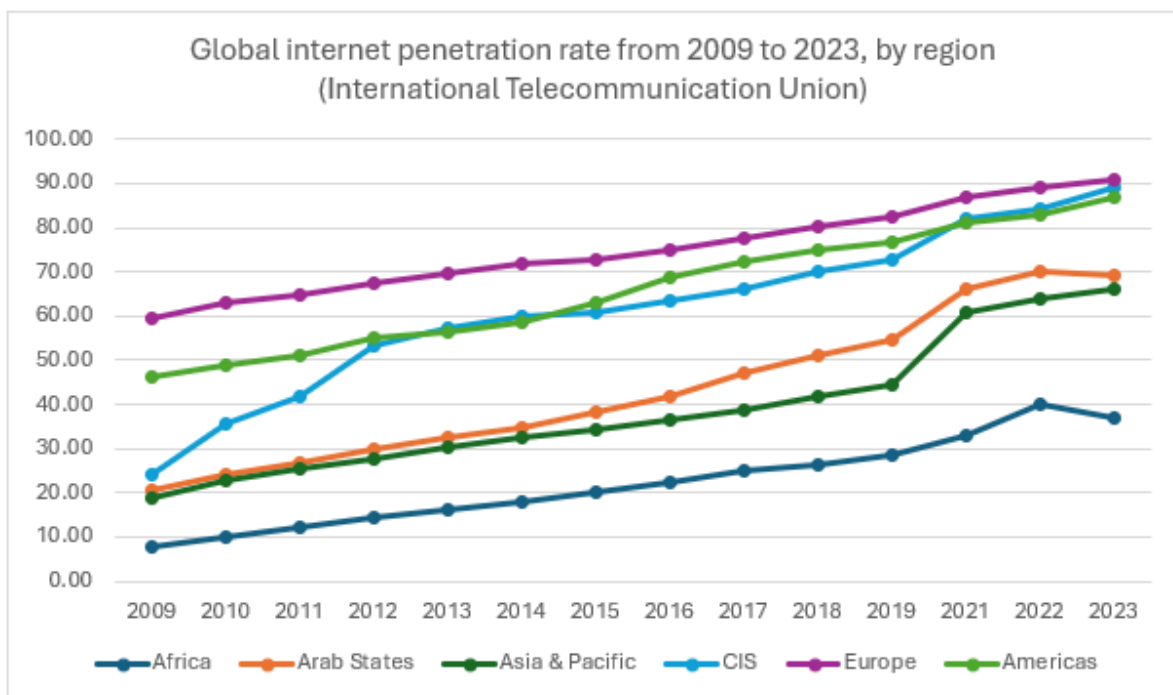


Figure 10 Global internet penetration rate from 2009 to 2023, by region (International Telecommunication Union)

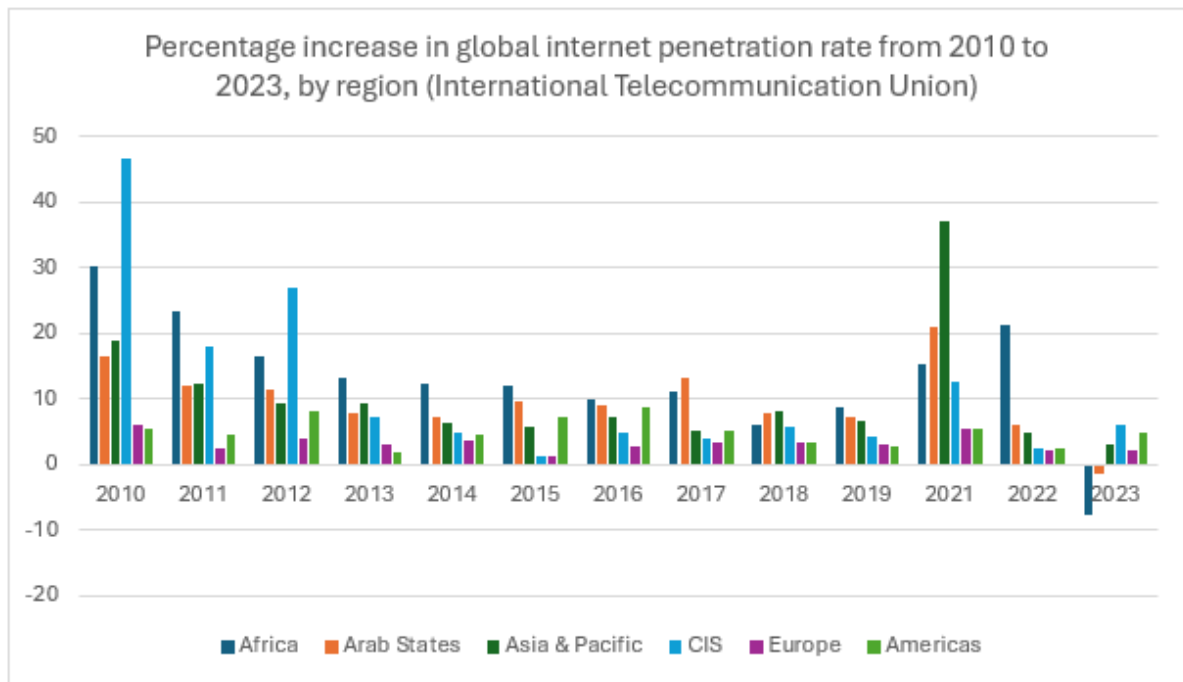


Figure 11 Percentage increase in global internet penetration rate from 2010 to 2023, by region (International Telecommunication Union)

While Europe and America experience fairly stable growth year on year, regions such as Africa and the Asia Pacific experience increases of nearly 50% in some years. This rapid expansion in internet penetration, as opposed to a slow, stable increase means that vast swathes of the population suddenly have internet access. This, in the social media age, means that many people will be using technologies such as social media for the first time without having ever used the internet before. It is this rapid development that not only outpaces citizens' digital literacies but also the data and digital legislation in those countries too. In other words, it is not level of penetration, but the rate of acceleration at which the penetration expands.

For example, in Kenya there was no form of data protection regulations until 2019; this was despite having 11.5 million internet users (22.67% internet penetration) at this point in the country (International Telecommunication Union, 2023; Statista, 2024a). This level of internet penetration coupled with absent protections allows for vast electoral manipulation. Despite publicly denying having done so, in private, the executives of the now defunct Cambridge Analytica 'boasted' of playing a role in swinging the Kenyan election in favour of the incumbent president Uhuru Kenyatta in both the 2013 and 2017 general elections (Lee, 2018). This included carrying out market research, writing party manifestos and producing videos to smear rival campaigns (Lee, 2018). This was done legally in the context of the (lack of) Kenya's regulatory framework. However, one key issue here is that it is not just a case of 'catching up' with new laws; introducing new laws does not suddenly remedy these issues. As the CEO of the Kenyan political coalition the National Super Alliance (NASA) Norman Magaya said in an interview: disinformation in Kenya has "planted seeds of discord that will take generations to heal" (Miriello et al., 2018), showing the damage that increasing internet penetration but limited regulation can have.

4.5. Counter-disinformation Approaches

There are many different approaches to countering disinformation, and broadly speaking these can happen pre-disinformation and post-disinformation, i.e. before and after individuals are exposed. This section will start with exploring pre-disinformation measures such as education and improving literacies, and will then move onto discussing post-disinformation measures such as factchecking and social media moderation, before discussing topics such as detection and legal interventions which bridge the divide.

4.5.1. Education and Literacies

A key counter-disinformation approach that has been operationalised worldwide is one of education and improving people's literacies related to disinformation. Beyond just pre-bunking (see section 4.5.4.), educational measures seek to teach people how to assess and evaluate the information they consume online.

Adapted from Lankshear and Knobel (2015, p. 10), *literacy* is understood here as *the ability to use, organize, evaluate, and communicate information*. This is, admittedly, a simplification. It is also important to understand the “pluralities of literacies” (Collins & Blot, 2003), and the interconnected nature of various types of literacy.

Literacies are a case of resilience. As Gillen (2014) notes, increasing literacy does not mean “improved cognitive capacities in the individual that cannot otherwise occur” (p.20), it is about empowering individuals and helping them by increasing awareness so they are prepared for disinformation when they encounter it, rather than having to learn as they go. In this sense it is proactive, not reactive. Literacies of this kind are also culturally bound and will vary by country or even by region.

There are various literacies at play when it comes to online communication and news:

Contrasting approaches – more instrumental or cultural, more individual or societal, more focused on the digital or more inclusive of all forms of communication – have long been debated. A host of terms are in use, from the very specific and new (for example, digital or data or gaming literacy) to the most inclusive and long-established (for example, media literacy or critical literacy). In different languages and theoretical traditions, different approaches are taken, often focusing on the concept of competence or competencies or, more recently, capabilities. There are also debates over the relation between digital literacies and all that such literacies enable – creativity, participation, communication, safety and so forth.

(Livingstone et al., 2022, p. 1)

When it comes to disinformation, the focus is largely on the following literacies: information, news, media, digital, emotional, and critical. It is important to note that each of these has fuzzy boundaries and may overlap, especially as online communication becomes more sophisticated and traditional boundaries such as ‘online’ and ‘offline’ are blurred. They can also all be combined. For example, Pangrazio (2018) refers to *critical digital literacies*, while Cohen et al. (2022) refer to *digital news literacy*, and Higdon (2020) talk of *critical news literacy*. Table 5 gives an overview of these and how they can apply to disinformation.

Table 5 Types of literacies

Literacy	Description	Relevance to disinformation
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Information	The ability to “seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals” (UNESCO, 2023)	The ability to understand not just how to use information, but how information may be used to influence. The awareness that information affects how we think.
News	“knowledge of the personal and social processes by which news is produced, distributed, and consumed, and skills that allow users some control over these processes” (Tully et al., 2022, p. 1593)	Understanding that the news constructs representations of reality as influenced by a range of beliefs, biases and exterior forces is important in understanding news.
Media	<p>“the ability to decode media messages (including the systems in which they exist); assess the influence of those messages on thoughts, feelings, and behaviors; and create media thoughtfully and conscientiously.” (Media Literacy Now, 2014)</p> <p>“Proficiency in the evaluation, analysis, and understanding of mass media; esp. the ability to analyse critically any story or event presented in the media and to determine its accuracy or credibility.” (OED, 2023e)</p>	Understanding the mass media landscape including biases and source verification allows individuals to be more astute media consumers.
Digital	The “confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It is defined as a combination of knowledge, skills and attitudes.” (European Commission, 2019)	Equipping individuals with the skills to navigate, evaluate, and responsibly use digital platforms is important in encountering disinformation in different online spaces.
Emotional	“The ability to understand ourselves and other people, and in particular to be aware of, understand, and use information about the emotional states of ourselves and others with competence. It includes the ability to understand, express and manage our own emotions, and respond to the emotions of others, in ways that are helpful to ourselves and others.” (Weare, 2004, p. 13)	Enables individuals to recognise and manage their emotions when encountering disinformation. Disinformation exploits fear, anger, and other emotions, and understanding emotional responses can reduce impulsive reactions, promote critical thinking, and prevent the spread of false information driven by emotional manipulation.
Critical	“evaluating and analysing texts to identify the choices made in constructing texts, the worldviews they represent and the social impact of those text” (UK Literacy Association, 2020)	Helping individuals to examining underlying messages, power dynamics, intentions, and biases will help them understand when they are being manipulated.

There are, of course, disputes and tensions across all of these definitions from various competing theories and frameworks (Pangrazio et al., 2020), and the ones presented here are intended to give a sense of what they might entail. It is also important to be aware of who we are trying to educate. In this sense, as we talk about literacies in the plural, I think it also useful to speak about *publics*.

When we talk about educating the public, or making the public more resilient to false information, it overemphasises the homogeneity of a given population. Publics in the plural refers to “loose, transitory, and heterogeneous social collectives” (Chandler & Munday, 2011), and acknowledges that a unified, general public might not actually exist because the singular *public* presupposes that we all “(1) have an equal opportunity of receiving and acting upon the message, and (2) care about the message enough to feel a need to respond or act on it” (Wakefield & Knighton, 2019).

For example, publishing a message through social media reaches a different audience to linear broadcasting, and consequently different publics are informed. This is relevant to literacies because they also vary considerably, depending on whether we are interested in, for example, children’s literacies (Kumpulainen et al., 2020), immigrants’ literacies (Emosda & Annisa, 2020), elderly literacies (Castilla et al., 2018) or disability literacies (Ruppar, 2017). Different literacies apply differently to different publics, and it is important to remember this in education. However, there is still the fundamental question: does education and improving literacies to build resilience against disinformation work?

4.5.2. Does Education Work?

There is some experimental evidence that shows interventions in the form of education and developing literacies can improve people’s ability to identify and resist disinformation. Research has shown that not only can education and training improve detection of false content (Guess et al., 2020; Reem, 2022; Soetekouw & Angelopoulos, 2024) but it can also lead to a decrease in sharing false stories too (Dame Adjin-Tettey, 2022). More fine grained research however has shown that certain literacies are more effective than others in this matter.

Jones-Jang et al. (2021) find that while information literacy increased fake news³ identification, news, media and digital literacies did not (p. 382). They conclude that this could be because information literacy has “attended more to the identification, location, evaluation, and use of information” (p. 382), something that may transcend digital or media landscapes. In other words, information literacy is not context bound to a certain type of content (news) or mode of delivery (online; social media) and therefore equipping people with general information verification and gathering skills equips them for a wide range of environments.

Given the dynamic media and technological landscape, some have suggested a so-called ‘metaliteracy’ that integrates elements of different literacies and technologies. Mackey and Jacobson (2011) argue that the transient, dynamic nature of social media requires a literacy that educates people on evaluating, producing and sharing content. They suggest that we need to move beyond literacies of comprehension, and focus also on literacies of production, which requires us to “rethink information literacy as active knowledge production and distribution in collaborative online communities” (p.64). Similar calls have been made where metaliteracy is seen as a form of “literacy development in [...] fluid and networked spaces” (Jacobson & Mackey, 2013, p. 84) and as a means to encourage people to be “active in the construction and

³ The term used by Jones-Jang et al. (2021).

distribution of knowledge” (Cooke, 2018, p. 19) as opposed to simply passive processors of information.

4.5.3. Literacy and Power

Social media has fundamentally changed our “traditional static understanding of media power” (KhosraviNik, 2017, p. np), and literacies should acknowledge power relations, and also reflect this shift in power. One literacy that does this is critical literacy. The UK Literacy Association (2020) describe critical literacy as a literacy that “examines the relationship between language, literacy and power”, and one that allows individuals to “interrogate texts and contexts to address injustices” (Pandya et al., 2022, p. np).

This is especially pertinent to disinformation, given that this content often seeks to deceive by imitating legitimate news, often to the detriment of protected, marginalised groups. Given recent shifts from mainstream media to social media, it is important to understand how media power works. Improving critical literacies through education allows publics to develop “a state of vigilance towards information that enables people to understand that information is socially constructed and to use it to produce new information in a creative and contextualized way” (Brisola & Doyle, 2019, p. 274). This literacy encourages individuals to acknowledge the *why* behind false content, mirroring my emphasis in [Section 1.5](#) of using disinformation rather than misinformation to allow us to focus on false content in a way that acknowledges the “context in which it is presented – and the narratives, networks and actors behind it” (GDI, 2019).

4.5.4. *Bunking And Factchecking

Related to belief of disinformation is the process of correction and correcting beliefs, which largely falls into two types: debunking, and prebunking. Debunking refers to the process of “presenting a correction message with arguments that showcase a prior message as misinformation” (Bhargava et al., 2023, p. 2); it is a way to correct erroneous misinformation belief and is implemented post hoc. It is carried through various means, such as “fact-checking, rebuttals, counterarguments” (Bertolotti & Catellani, 2023, p. 1). It is thought that by providing a factual account that complicates an earlier message, individuals may reduce belief in false information. Examples of debunking includes classic factchecks that label false stories. Factchecking essentially proposes that we can disabuse people of their mistaken beliefs.

Prebunking however, as the name suggests, refers to addressing misinformation pre-emptively before the individual encounters it. Prebunking functions by attempting to “anticipate misinformation by making potential targets aware of its existence, and providing them the necessary knowledge to recognize and counterargue it” (Bertolotti & Catellani, 2023, p. 1). It is a pre hoc form of intervention and is largely based on so-called ‘inoculation theory’: the idea that, like a virus, exposing people to a weakened version of an argument prepares them for when they later encounter that argument (McGuire, 1961). The goal is that they will then critically engage with any misinformation rather than accepting it as truth. Prebunking is carried out through means such as infographics, explainers, and teaching people how to factcheck claims, such as

the UNESCO #ThinkBeforeSharing campaign (Figure 12).



Figure 12 UNESCO's #ThinkBeforeSharing campaign (UNESCO, 2024)

The extant literature on debunking and prebunking and their respective efficacy is mixed. While some studies have found debunking to be more effective, others have found that prebunking is more effective (Ecker et al., 2022, p. 19). Overall, however, both are seen as successful interventions compared to not acting (Blank & Launay, 2014; Chan et al., 2017; Walter & Murphy, 2018). Various experimental studies retrieving different results show that is likely to be the factcheck structure (Kenix & Manickam, 2020; Lewandowsky et al., 2020; Lewandowsky et al., 2021; Swire-Thompson et al., 2021), the topic at hand (vaccination, climate change, politics, etc.) (Asberger et al., 2021), and the mode of the factcheck (Kessler & Bachmann, 2022), that all act as variables affecting successful intervention. Overall, these interventions have been shown to reduce or counter belief in specific (often experimental) contexts but may be limited in terms of both their generalisability to broader contexts and their scalability to wider audiences (Basol et al., 2020).

Debunking is often seen as a more strategic process than factchecking, in that it does not just target individual articles but addresses specific narratives and does not always necessitate a balanced approach to what it does and does not deal with (Pamment & Kimber, 2021). The following section however will focus on the specific practice of factchecking in-depth, examining how factchecking is carried out and the various formats it can take.

4.6. Factchecking

Factchecking is the process of publicly verifying and validating factual claims (Graves & Glaisyer, 2012; Nieminen & Rapeli, 2019; Silverman, 2020). Factchecking is “grounded in core principles of truth-telling and impartiality, and practices of verification and clarity” and can be part of a media outlet or a standalone entity (Singer, 2019, p. 976).

Factcheckers select a claim (usually based on selection criteria or due to public request) and publish a factcheck rating. These ratings vary considerably between factcheckers. Some factcheckers opt for text-based judgements, such as ‘true’ or ‘false’, while others opt for visual ratings. These visual ratings again vary considerably, as shown in the figures below.

Figure 13 shows the review system used on El Sabueso ('The Hound'), the factchecking service offered by Mexican news outlet Animal Politico. English translations are shown in the second image. The rating scheme combines textual categories (true, almost true, etc.) with images of increasingly alarmed bloodhound dogs (a reference to Sir Arthur Conan Doyle's Sherlock Holmes). Others use purely pictorial scales, such as the Washington Post, as seen in Figure 14. The scale ranges from one Pinocchio – which indicates minor manipulations – to four Pinocchios, which indicates 'whoppers' (substantial errors).

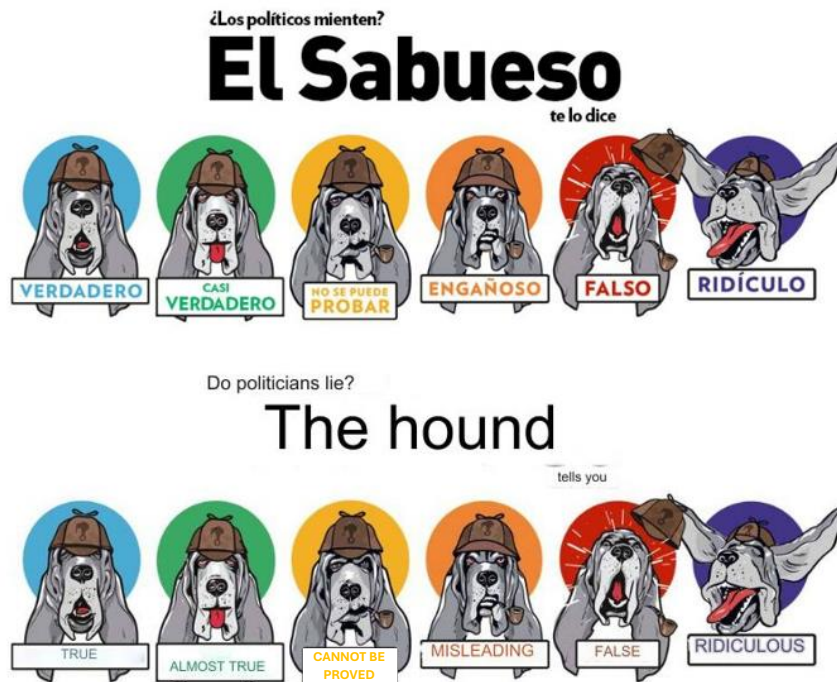


Figure 13 Animal Politico's 'El Sabueso' Rating System (Animal Politico, 2024)

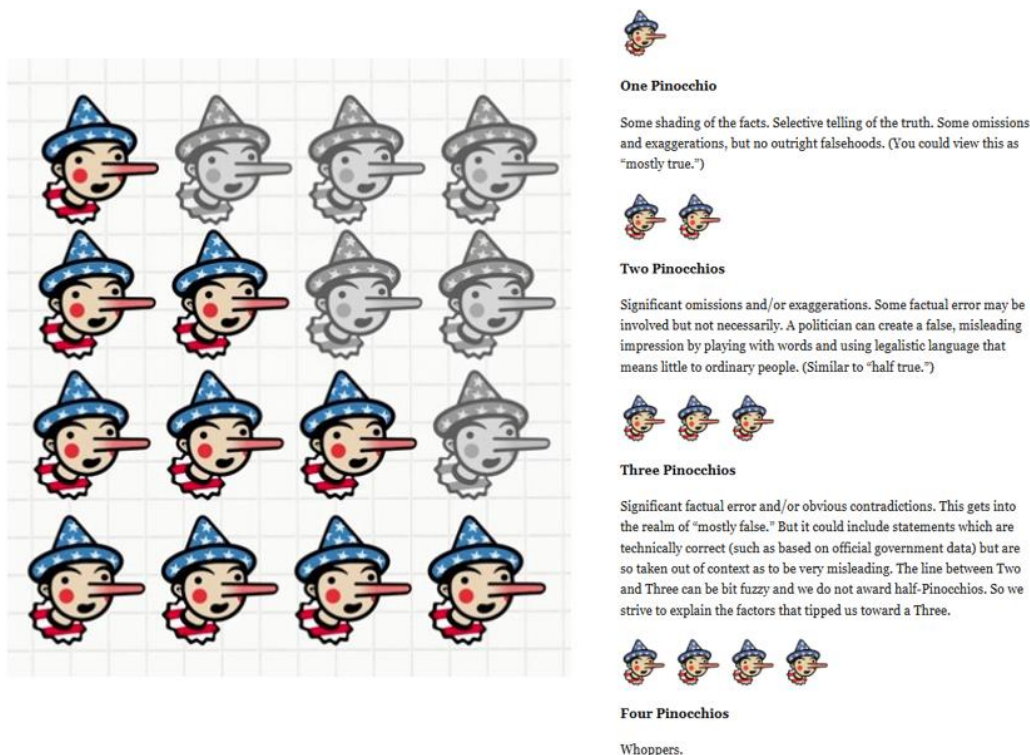


Figure 14 The Washington Post's Pinocchio rating scale (The Washington Post, 2024)

According to the Duke Reporters' Lab factchecking census, in 2023 there were 417 factcheckers actively working in 69 languages across 100 countries (Stencel et al., 2023). Despite growth in previous years, this number is similar to 2021 and 2022, suggesting that “[f]act-checking’s growth seems to have leveled off” (Stencel et al., 2023, n.p.). There has specifically been considerable growth in the Global South, something that has in part been made possible through schemes such as CrossCheck that provide digital infrastructure allowing newsrooms worldwide to create their own factchecking desks in their own language (Smyrniaios et al., 2017). Other schemes include the Google News Initiative which provides factcheck tools to journalists and educators (Google News Initiative, 2024), and the edited Verification Handbook guide for factcheckers (Silverman, 2020).

Factchecking can be rolled out in many ways. Many factcheckers publish their factchecks on their social media feeds, but factchecks can also be integrated into social media posts in the form of post labels, the process of “applying a label, factcheck, or tag directly on or alongside content that some moderating entity (e.g., third-party factcheckers) has identified as false or misleading” (Martel & Rand, 2023, p. 1). The purpose of these labels is to reduce the credibility of misleading information and to correct the misinformation at the point of consumption, rather than as a correction after reading it (Mena, 2020). Figure 15 shows two examples of factchecking labels: the left is taken from the Community Notes feature on X (X, 2024a), while the right is taken from Facebook (Facebook, 2021).

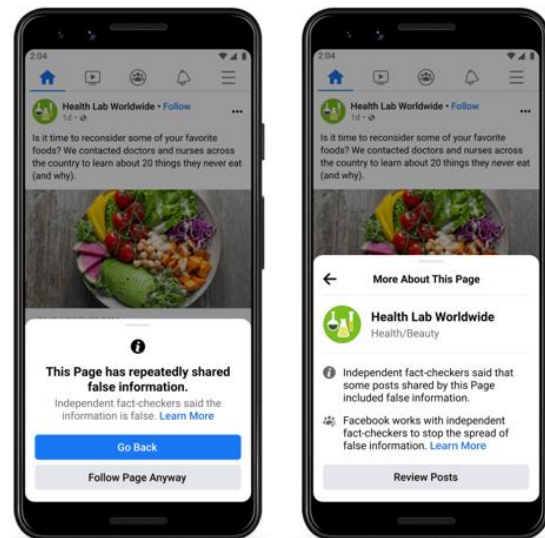
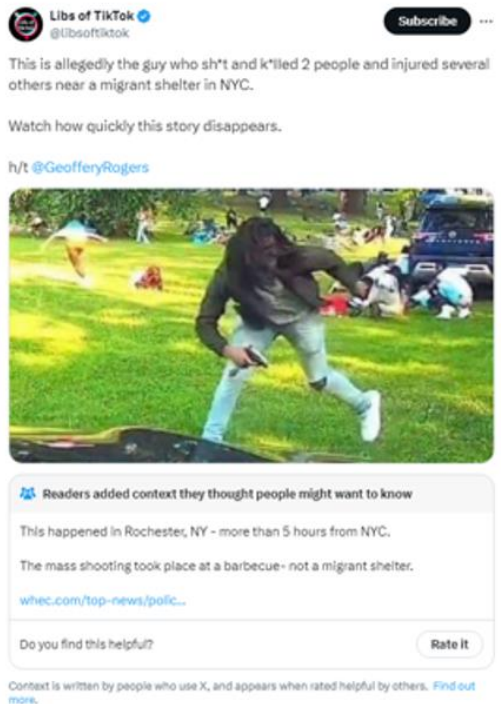


Figure 15 X and Facebook's factchecking labels

4.6.1. Benefits of Factchecking

Research has shown that factchecking can be an effective tool for correcting misinformation belief. In a metanalysis of factchecking effectiveness, Walter et al. (2020) find that “fact-checking has a significantly positive overall influence on political beliefs” (p. 350) but that this effect can be weakened by other measures, such as using truth rating scales, addressing only part of a claim and factchecking political campaign content (ibid). Various studies have shown that labels decrease misinformation belief (Chan et al., 2017; Mena, 2020; Carnahan & Bergan, 2022), even in cases where people have an explicit distrust of the factcheckers themselves (Martel, 2023).

In a study of four countries (Argentina, Nigeria, South Africa, United Kingdom), Porter and Wood (2021) find not only do factchecks reduce misinformation belief, but also importantly the effects are still present two weeks later (p. 5). Similarly, Ecker et al. (2020) find that short-format (140 characters) factchecks are more efficient than simple false labels, but that they are more effective after one week rather than one day (p. 43). This perseverance of correction is important and also may be something that confounds many experimental studies. That is, factchecks may take time to work and do not act immediately. Some studies, however, have shown minimal effects of factchecking labels, such as Oeldorf-Hirsch et al. (2020) in a study of memes and news articles.

When it comes to changing how people use social media to decrease the likelihood they engage with disinformation, there is one key principle: resistance. It is important to note that we cannot always stop the spread of disinformation but we can decrease its resonance by increasing resistance along the way so that it does not spread as easily or quickly. One example of this is so-called ‘nudges’, defined by Thaler and Sunstein (2009) as:

any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not. (2009, p.6)

In the context of social media and disinformation, nudges are optional features that increase resistance between passive and active engagement. That is to say, they make going from passively engaging (reading) to actively engaging (sharing) more difficult. This includes factchecking labels and notifications. This proactive *ex ante* intervention targets disinformation and deceptive content before it is engaged with, rather than reactively moderating and removing disinforming content or chasing people up with factchecks at a later time.

In specific relation to disinformation, Fazio (2020) finds in an online experiment with participants from the US (n=501), that asking people to explain why a headline was true or false before sharing it can impact the dissemination of disinformation. In relation to false headlines, for example, "participants who first explained why the headline was true or false indicated that they would be less likely to share the story" (p. 3) when compared to the control group (39% compared to 57%). These findings are consequential and could be operationalised in a nudge similar to the ones presented above, from Twitter; again, to increase the amount of resistance and duration between passive and active engagement.

Nekmat (2020) found that in an assessment of the interaction between factcheck alert nudges and (non-)mainstream news, participants who received a factcheck alert were less likely to share news compared to a non-exposure control group – something that applied to both non-/mainstream news (p.7). Using a social norms nudge, where participants (n=1,003) were told "Most responsible people think twice before sharing content with their friends and followers", Andı and Akesson (2021) report a decrease of 27.5% in the likelihood to share false news compared to a control group (p. 115). Again, these findings demonstrate the effect that nudges can have. The challenge, however, is mapping this research onto nudges that appear in social media platforms' interfaces – that is, finding a way to integrate these alerts and nudges in a practical, non-obtrusive way.

This is particularly difficult because disinformation interventions (nudges, alerts, moderation) are often poorly understood. Saltz et al. (2021) find that while encounters with interventions was high (49%), social media user's understanding of the information they are seeing is much lower. Specifically, they find that 40% of respondents believed that either all or most of social media content is checked for accuracy (p.6), whereas in reality this figure is considerably lower. For example, on Facebook in January 2020, just 302 factchecks were carried out by Facebook's third-party factcheckers (Legum, 2020). To put this in context, in the period 2017-2019, Bailey et al. (2021) find that the ten most shared news websites on Facebook were represented by 1,290,000 unique URLs (p. 19), demonstrating only a minute amount of news on Facebook is factchecked. This means that a large proportion of users may not understand the need for interventions as they are acting under the assumption that most content is already factchecked.

Further, confidence in social media platforms to make decisions in the 'public interest' also varies between political party (Saltz et al. 2021, p. 22), as does support for interventions overall (p.7). This indicates that a 'one size fits all' approach is not suitable for social media interventions. Furthermore, these differences will be larger when we consider interculturality

and implementing messages in different languages and cultural contexts. For example, Facebook is officially available in 111 languages, with a further 31 ‘widely spoken’ languages also used (Fick & Dave, 2019), making tailoring nudges and messages a considerable task.

However, there are reassuring findings from research that look at the combination of multiple interventions. Bak-Coleman et al. (2022) carry out a simulation of three interventions on a Twitter corpus of 10.5 million tweets: circuit breaking (stopping algorithmic promotion of an item), account banning (removing items), and nudging. They find that while individually these items have their limitations, when used in tandem they are effective at reducing the spread of disinformation. The modest and aggressive versions of the model were found to decrease viral disinformation spreading by 53.3% and 63% respectively (p.6). While these findings are limited by the fact they were retroactively modelled on a dataset and not actually implemented, they demonstrate that combining complementary interventions could help limit disinformation spread.

4.6.2. Criticisms of Factchecking

In a critical review of factchecking practices, Uscinski and Butler (2013) identify ‘methodological criticisms’ of factchecking practices, including “treating a statement containing multiple facts as if it were a single fact and categorizing as accurate or inaccurate predictions of events yet to occur” (p. 162). Their excoriating review of factchecking posits that its very nature has a “tacit presupposition that there cannot be genuine political debate about facts, because facts are unambiguous and not subject to interpretation” (p. 162) and is therefore questionable from an epistemological standpoint. Among their criticism is that factcheckers do not maintain the same rigour as (social) scientists and therefore the methods they employ are not scientifically rigorous.

However, this is not the case. In a response to Uscinski and Butler (2013), Amazeen (2015) designed a study to assess agreement between different factchecks of the same claim. Using the 2008 presidential election as a case study, they identify 36 claims in 18 adverts that were reviewed by at least three factcheckers. They find that when it comes to presence or absence of an inaccuracy, agreement between factcheckers was 98% (p. 12). Similarly, in an assessment of 64 factchecks, Markowitz et al. (2023) identify just one case of disagreement on bottom-line determinations of statement veracity in a comparison of Snopes and FactCheck.org, while Lim (2018) finds a Cohen’s κ of 0.750 for 77 claims factchecked by Politifact and Factchecker, indicating substantial agreement. In other words, baseline claims of (in)accuracy are not the issue, but it is where factchecks become more fine-grained that issues may arise.

These criticisms also do not account for objectively true or false statements. For example, on July 18th 2024 the US presidential nominee and Vice President Kamala Harris said of rival presidential nominee Donald Trump that “Their Project 2025 agenda would even end Head Start to take away preschool from hundreds of thousands of our children”; this statement was factchecked by PolitiFact who note that “The Project 2025 conservative policy blueprint says on Page 482 that it would “Eliminate the Head Start program”” (Jacobson & Penner, 2024). This is a claim that is unequivocally corroborated by black-and-white evidence.

Factchecking is of course far from perfect. It is not free of journalistic bias, and it is valid to argue against selection biases of which claims to factcheck. However, I think in this sense it is best to view factchecking as a partly holistic practice. Factchecks are inherently context dependent and to view them out of context is a mistake. They are responses to what is going on

in the world and while on paper their methods can be criticised, they are not theoretical ideas – they are applied, practical exercises. And with this application comes noise and ‘mess’. In other words, factcheckers face “unprecedented truth-telling challenges” (Singer, 2019, p. 976) which require difficult decisions and innovation. That is to say, a factcheck is greater than the sum of its parts. We may criticise the selection criteria, the rating scale, and so forth, but they provide valuable information and, in my view, have a net positive of disinformation mitigation. This also assumes an educated, Western point of view. In some countries, where access to information is not democratised due to low internet penetration and lower access to education, factchecks provide vital information for their readers.

4.6.3. Reach

One fundamental issue with factchecking is reach. Factchecks rarely go viral the same way (false) news posts do, and they regularly fail to reach the same audience that saw the original content (DiResta, 2020). In reference to reaching the same audience with factchecks, Will Moy, then-executive of UK factchecker Full Fact, stated in 2019 “that game is not capable of being won” (Tobitt, 2019).

Example of this failed reach can be seen below in *Figure 16*. The two examples show the tweet (left) as displayed on Twitter with a community note, and then more granular information of the Community Note reach on the right. In each instance the reach of the Community Note correction is a small proportion of the original tweet’s audience.

Gentile News Network™
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It's happening

THE JERUSALEM POST

Jerusalem Post > US Politics

Nearly a quarter of Americans believe 'Hitler was a good person' - poll

By JERUSALEM POST STAFF
Published: NOVEMBER 9, 2024 00:37
Updated: NOVEMBER 9, 2024 08:54



Readers added context they thought people might want to know

This claim is incorrect. The YouGov poll surveyed 1,077 people. Of these, 1% viewed Hitler as completely good, and 4% considered him a good person who did some bad things. Additionally, 7% viewed him as equally good and bad. Combined, these figures total less than 12%.

[...ts-websites-editorial-emea.yougov.net/documents/View...](https://ygo-assets-websites-editorial-emea.yougov.net/documents/Views_on_Hitler_poll_results.pdf)

Do you find this helpful? Rate it

Context is written by people who use X, and appears when rated helpful by others. [Find out more.](#)

5:07 pm · 10 Nov 2024 · **1.8M Views**

Currently rated helpful · 10 Nov · [View details](#)

Shown on X · **107.4K+ views**

Directly addresses the post's claim · Provides important context

This claim is incorrect. The YouGov poll surveyed 1,077 people. Of these, 1% viewed Hitler as completely good, and 4% considered him a good person who did some bad things. Additionally, 7% viewed him as equally good and bad. Combined, these figures total less than 12%.


https://ygo-assets-websites-editorial-emea.yougov.net/documents/Views_on_Hitler_poll_results.pdf

[Translate note](#)

AFPost
@AFpost

Minnesota man Anthony Nephew kills himself, his ex-partner, his wife, and their two sons over Trump winning the election.

Follow: @AFpost



Readers added context they thought people might want to know

In the article AFPost cited, it mentions there is no motive for the murder suicide.

x.com/DissidentSlaps...

Do you find this helpful? Rate it

Context is written by people who use X, and appears when rated helpful by others. [Find out more.](#)

2:20 am · 10 Nov 2024 · **146.6K Views**

Currently rated helpful · 10 Nov · [View details](#)

Shown on X · **24.5K+ views**

Directly addresses the post's claim · Provides important context

In the article AFPost cited, it mentions there is no motive for the murder suicide.

<https://x.com/DissidentSlaps/status/1855438858973814997>

[Translate note](#)

Figure 16 Disparity in audiences between an X post and X Community Note factchecks

In the first example, the post has been seen by 1.8m people but the Community Notes have been viewed by 107,000 people⁴, just 6% of the original audience. In the second example, 146,600 people have seen the post and 24,500 have seen the Community Note, a higher proportion at 17%. However, this is still the minority in both cases. This demonstrates that factchecking labels by themselves are not enough, and they must be rolled out in a more effective way. For example, one commonsense measure for social media companies would be for them to show factchecks to the original audience of a factchecked post. This is a simple, cost-free measure social media companies could take to ensure the same audience is reached and to minimise widescale deception on their platforms.

4.6.4. Resistance to Correction and Perseverance of False Belief

Debunking and prebunking are not without their risks. A key concern of both these interventions is the backfire effect, where correction causes an individual to entrench their views rather than changing them. Defined by Swire-Thompson et al. (2020, p. 286) as the phenomenon “when a correction leads to an individual increasing their belief in the very misconception the correction is aiming to rectify”, backfire can essentially worsen the situation by making people less likely to abandon false beliefs. There are several key types of backfire, and these are summarised in *Table 6* below.

Table 6 Types of backfire effect

Type	Description	Example
Worldview	A backfire effect that “can occur if a correction attacks a worldview-bolstering belief” (Prike et al., 2023, p. 2). Related to in-groups and out-groups.	In Nyhan and Reifler (2010)’s seminal study on correction backfire, their experiment found that “conservatives who received a correction telling them that Iraq did not have WMD were more likely to believe that Iraq had WMD than those in the control condition.” (p. 315)
Familiarity	An effect where “correction effectiveness is reduced if the correction repeats the to-be-debunked misinformation, thereby boosting its familiarity” (Ecker et al., 2023, p. 1). Repeating a claim, even during a correction, can give it currency.	Torsten Kleditzsch, editor of the Chemnitz daily newspaper Freie Presse, addressed how tackling false rumours about the fair-right protests in Chemnitz, Germany can actually give them currency: “When you are disputing a rumour with facts, you are also automatically broadcasting the rumour. At the end, it's not the denial that sticks, it's the rumour.” (Pieper, 2018).
Overkill	The reluctance to understand a complicated explanation because “a simple myth is more cognitively attractive than an overcomplicated correction” (Jacobson et al., 2022, p. 14). It is easier to stick with what we already believe than to learn something new that corrects it.	Opt for messages such as “Study shows that MMR vaccines are safe” rather than those explaining the scientific intricacies of how vaccines work (Alda et al., 2012).

⁴ These figures are the privilege of people who have enrolled in X’s Community Notes programme, which I have. They are not readily available to members of the public.

All these effects are related in a way to cognitive dissonance: the discomfort an individual feels when a piece of information is at odds with the pre-existing beliefs (Harmon-Jones & Mills, 2019). It is also important to note that the existence of each of these in experimental conditions has been questioned, with many studies failing to find a backfire effect for each.

For example, Wood and Porter (2019) do not find evidence of a backfire effect in a large study (10,100 subjects); Sanderson et al. (2022) find that the opposite of the familiarity backfire effect is true; while Ecker et al. (2019) find no evidence for an ironic overkill effect when counterarguments are presented. The mixed state of the field suggests that these effects are heavily context dependent and are likely influenced by mode of delivery and topic. Similarly, it is very difficult to replicate the real-world organic and diffuse spread of misinformation in experimental settings, so there may also be an issue of observer's paradox at play too. Overall, while there is debate over whether these effects exist, the reality is we may often be doing more harm than good when correcting/factchecking false information and therefore we need to carefully consider how to address false claims.

4.7. Social Media Interventions

There are various interventions that social media companies can make to mitigate the spread of misinformation via social media. 11 salient interventions identified in the misinformation literature have been identified and described below in *Table 7*. For each, real-world examples of their implementation have been included.

Table 7 Social media interventions

Type	Description	Implemented/Example
Demonetise	Social media posters can generate income from their social media posts through ad revenue sharing schemes. Platforms can remove people who share false information from these schemes as punishment. (European Digital Media Observatory, 2024)	YouTube removed a video by One America News Network from its monetisation partner program for spreading false COVID-19 cures (Gold, 2020).
Downrank	The process of limiting the distribution of a post or poster by excluding it/them from algorithmic promotion and search results (Narayanan, 2023). Downranking is sometimes done without notifying the poster. It is also known as shadowbanning or demotion.	Facebook began downranking the content of Facebook pages that repeatedly shared false information. Page administrators were told "Your group's distribution is reduced due to false information." (Vincent et al., 2022, p. 4). TikTok announced it was to exclude repeat posters of conspiracy theories from its algorithmically produced For You page (TikTok, 2024).
Label: contextual	Labels that provide related contextual information relating to the contents of the labelled post. These	TikTok automatically labelled any video that mentioned COVID-19 with a banner that directed users to reliable information sources (TikTok, 2020).

	normally link to authoritative sources such as government webpages.	
Label: credibility	Labels that implement information from factchecks. Also known as veracity labels (Morrow et al., 2022).	Meta updated its factchecking labels to include ratings such as 'Altered', 'Missing Context', alongside pre-existing labels like 'False' or 'Partly False' (Meta, 2020).
Label: provenance	Provenance labels give information on where a post has come from. Such as location, the affiliation of the posters, and other information. Also known as source alerts (Arnold et al., 2021).	YouTube began labelling accounts that "receive some level of government or public funding" to inform users of news bias (YouTube, 2018). Facebook began labelling accounts that are "wholly or partially under the editorial control of their government" (Facebook, 2020).
Nudges	Combatting inattentiveness to post veracity by introducing pop-up messages when users engage with a misinforming post (Butler et al., 2024). Also known as prompts or friction (Johansson et al., 2023).	Twitter implemented nudges that appeared when they retweeted a link they had not clicked/read. The nudges say: "Headlines don't tell the full story. You can read the full article on Twitter before retweeting." The goal of this was to prevent people sharing information they do not know the context for (Hatmaker, 2020).
Removal: post	The removal of a post that contains misinformation or violates a platform's terms of service.	Facebook banned all posts claiming that COVID-19 was man-made. They later reversed this (Hern, 2021).
Removal: account	The removal of a poster/account that contains misinformation or violates a platform's terms of service. Also known as banning or permanent suspension.	YouTube, Facebook, Apple, and Spotify removed all content posted by conspiracy theorist and InfoWar's owner Alex Jones (Hern, 2018). Twitter permanently removed Donald Trump's account (Twitter, 2021g).
Temporary restriction	The temporary restriction of a user's ability to post. Also known as account locking or suspension.	Twitter temporarily prevented congresswoman Marjorie Taylor Greene (R-GA) from posting due to baseless claims of election fraud. The restriction lasted for 12 hours (Al Jazeera, 2021).
Token banning	When the use of certain words in posts or query searches is banned or leads immediately to a label. Also known as hashtag banning.	TikTok began blocking QAnon hashtags such as 'QAnonTruth'. When users would search or tap on these hashtags, no results would be displayed (Spring, 2020).
Post disclaimer	When a post is not taken down, but users must view	In 2020, many of Donald Trump's tweets appeared as "This Tweet violated the Twitter Rules about spreading misleading

	and acknowledge a message before viewing it.	and potentially harmful information related to COVID-19. However, Twitter has determined that it may be in the public's interest for the Tweet to remain accessible. Learn more". Users could then click the 'View' button to see the original tweet (Sanderson et al., 2021).
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None of these measures is a silver bullet and they may work more effectively as separate measures depending on context, or in tandem. For example, while demonetisation can be effective, it relies on singling out individual sources of misinformation. It also is ineffective on social media channels that are part of wider media networks and do not rely on money from a single platform. For example, One America News Network (OANN) do not rely on money from YouTube to fund their operations, and therefore demonetisation will not stop them producing false content. Demonetisation also does not stop false content from spreading – though, it may act as a deterrent for others. Labels and post disclaimers work well with downranking as they exclude algorithmic promotion of the content while also ensuring those who do read the posts by seeking them out are warned about contextual, provenance, or veracity information.

4.7.1. Detection

Disinformation detection plays an important part in the counter-disinformation landscape. The identification of disinforming items means they can be factchecked or moderated to reduce future deception. Disinformation detection involves identifying disinforming articles using various types of context, such as the body of the article and how this compares to real-world events; the article's producer; how the article was disseminated and whether this shows signs of inauthentic activity, and the language of the article.

There are various guides for spotting disinformation, often aimed at children or the elderly. These often include steps such as check the source, assess for modified media (photos; videos) and consider our own emotions and biases. Three examples are presented in *Figure 17* below.

1. Check the source

Look at the website where the story comes from. Does it look real? Is the text well written? Are there a variety of other stories or is it just one story? Fake news websites often use addresses that sound like real newspapers, but don't have many real stories about other topics. If you aren't sure, click on the 'About' page and look for a clear description of the organisation.

2. Watch out for fake photos

Many fake news stories use images that are Photoshopped or taken from an unrelated site. Sometimes, if you just look closely at an image, you can see if it has been changed. Or use a tool like Google Reverse Image search. It will show you if the same image has been used in other contexts.

3. Check the story is in other places

Look to see if the story you are reading is on other news sites that you know and trust. If you do find it on many other sites, then it probably isn't fake (although there are some exceptions), as many big news organisations try to check their sources before they publish a story.

4. Look for other signs

There are other techniques that fake news uses. These include using ALL CAPS and lots of ads that pop up when you click on a link. Also, think about how the story makes you feel. If the news story makes you angry, it's probably designed to make you angry.

If you know these things about online news, and can apply them in your everyday life, then you have the control over what to read, what to believe and most importantly what to share. If you find a news story that you know is fake, the most important advice is: don't share it!

Not everything posted online is real or true. But there are lots of ways to spot fake news:

- 1. Don't react straight away**
Fake news is often designed to make you scared, worried or angry. And this can make it hard to think. Take a few minutes before you react or comment on something.
- 2. Think about whether it could be a hoax or made-up**
Lots of people spread rumours online. Sometimes a picture could be posted with a made-up story, or with language to try and grab your attention.
- 3. Check the source**
Look at the name of the website and see whether it looks real. Try to find out whether there's any evidence to back up what's being said, or if it's been confirmed on news websites you trust.
- 4. Look at the date and other information**
Lots of older posts and news articles might have out of date information. If you're looking at a picture, check to see if there's anything that doesn't make sense or that doesn't look real.
- 5. Ask an adult you trust**
Always get a second opinion when you're not sure. Try asking someone you trust, or speak to a Childline counsellor.

If you've been sent something and you're not sure if it's real, don't share it.



Figure 17 Example of disinformation detection guides. From left to right: British Council, Childline, International Federation of Library Associations and Institutions

Hamed et al. (2023) propose that factchecking can be done in three main ways: expert-oriented, crowd-sourced, and computationally (Hamed et al., 2023). Expert oriented refers to factchecking at the individual level where a person, for example a topic matter expert, factchecks the veracity of an article. However, I would argue that expert-oriented would be better labelled as ‘individual’, as given the accessibility of information on the internet in the modern age, one does not need to be an expert to access specialist information and factcheck an article. Crowd-sourced factchecking refers to teams of factcheckers. I would also extend this to include features such as Twitter’s Community Notes, where although corrections are written by individuals, they are only shown publicly if they are approved by the community. Finally, the computational approach refers to the use of an “an automatic system that categorizes a news item as having true or false material” (Hamed et al., 2023, p. 4). These resultant types, with my updated definitions, would be:

- Individual: when an individual, who may be a topic matter expert, assesses the veracity of a news article and shares their findings. The most time consuming form of factchecking.
- Crowd-sourced: a collaborative form of factchecking where either the claim is factchecked as a group, or the factcheck itself is assessed by a larger community before publication.
- Computational: the use of automated approaches to factcheck the content of an article by cross-referencing it to other online sources.

The latter of these types, automated disinformation detection, is largely seen as the ‘holy grail’ of disinformation research. As it stands, manual identification of false items is useful for analysing context-dependent content but is “too slow to cover big information spreaders such as social media platforms” (European Data Protection Supervisor, 2024). Consequently, a great deal of attention has turned to automating the process and making it scalable to the vast amounts of information hosted online. There are several benefits and drawbacks of these approaches that will be outlined below. Alongside these, I will give an overview of the field, types of detection, and efficacy. I will refer to this as ‘fake news detection’ as that is the terminology most of the extant literature uses.

4.7.2. Automated Detection

There are two key types of detection: knowledge based, and features based. Knowledge based refers to the factchecking discussed above where we compare the contents of an article to other available information to see if its claims are repeated, corroborated, supported, or refuted elsewhere. (Hu et al., 2021; Seddari et al., 2022). This often involves the use of knowledge graphs, networks of interrelated entities (such as facts, other stories, events, etc.) that can be implemented in computer models to verify or debunk claims (see Ciampaglia et al. (2015) for discussion of knowledge graphs in factchecking).

Features based (sometimes called objects based) detection refers to looking at elements of a suspect article that may help identify it as false. A feature is any information that might characterise a piece of disinformation in some way (Lancaster et al., 2018; Garg & Sharma, 2022). This definition is deliberately broad because ‘feature’ can refer to many different items. These can include, but are not limited to, textual features (title, number of words, outlinks, etc.), multimodal aspects (images, videos, graphics, etc.) and network features (who has shared the article online, how often has it been shared, are there signs of inauthentic activity (cf.

computational propaganda), etc.). Features based detection is the most linguistic based aspect of disinformation research, as a great amount of work has focused on understanding what linguistic features occur in disinformation.

There are various proposed typologies of disinformation detection. For example, Seddari et al. (2022) use a three way distinction between social context based (using social media cues), content based (linguistic features) and knowledge based, while Hamed et al. (2023) contrast knowledge based to features based, with the latter acting as an umbrella term for linguistic and social context based features. Overall, it seems useful to have multiple frameworks as these allow for creativity – such as with the integration of new techniques, including artificial intelligence – as we are not bound by a rigid, single framework.

4.7.3. Evaluation of Automated Detection

There are many benefits and problems with automatic disinformation detection. First and foremost is one about definitions. Most of the research refers to ‘fake news’ detection, but there is the fundamental issue of intentionality (i.e. disinformation vs misinformation). That is to say, even if an automated system can detect false content, it cannot discern the intention behind that content. As a result, are these systems trained to find innocent errors, malicious false content, or anything that does not match reality? For example, biased opinion pieces that are not factually incorrect because they are opinion could fall into that latter category.

Efficacy, scalability and availability of these systems is also important. Studies have shown that fake news detection⁵⁵ performs better when the algorithm or programme is trained on a larger dataset (Mridha et al., 2021), but procuring these datasets is challenging. Various different models have demonstrated detection accuracy in the high 90% range (see Yuan et al. (2023)) but the issue is these models are specific, not general. They can, admirably, achieve very high accuracy on their specific training sets but their rollout to general use is more complicated. In a meta-analysis of online fake news detection, Thompson et al. (2022) discover there is a great amount of heterogeneity in the research field, and that there is a “trivial publication bias” (p.14).

This heterogeneity may also indicate a level of overfitting, when a “model cannot generalize and fits too closely to the training dataset instead” (AWS, 2024). Overfitting happens when the model can only function accurately on its training data and not on a wider, general dataset, which subsequently “prevents us from perfectly generalizing the models to well fit observed data on training data” (Ying, 2019, p. 1).

This further compounds the issue of a general fake news detector because the extant research is too varied and too individually specific, with too little replication. The result is we have many useful case studies, but these are bound by their specific datasets and do not work towards a general fake news detector. Many of these studies are limited in scope by genre, language, mode, culture, and topic, and while the field has some promise, it is in its infancy and has a long way to go. One of these facets will be discussed further here: mode.

Disinformation can take many forms, including text, images, videos, audio, and combinations of all of these. For example, a screenshot (image) can show static text, while a video can be used to show text and bypass simple textual detection methods. The analysis in this thesis concerns textual discussions of ‘disinformation’ and ‘misinformation’ on Twitter. However, this platform, alongside all others, is not purely text based. The dissemination of disinformation does not take

⁵⁵ I use the term ‘fake news’ here to mirror the terminology in the cited literature.

place purely through textual means but instead can be carried out through various types of media. Below I will outline these different types of media and the challenges they pose.

Social media platforms have become increasingly multimodal. In 2013, Facebook announced the service would become more photo-centric (Facebook, cited by Robertson, 2013), while in 2023, X revealed that tweets with images are boosted and shown to double the audience compared to purely textual tweets (X, 2023). Further, with the rise of short-form video sharing services such as TikTok and Reels, there have become more ways through which people can spread disinformation. As *Table 8* shows, of the top ten social media platforms when ranked by number of monthly active users (MAUs), 4 (highlighted) are media based.

Table 8 Top ten social media platforms ranked by monthly active users (MAUs) (Statista, 2023)

Rank	Platform	MAUs (billions)
1	Facebook	3.05
2	WhatsApp	2.78
3	YouTube	2.49
4	Instagram	2.04
5	WeChat	1.32
6	TikTok	1.22
7	Telegram	0.8
8	Snapchat	0.75
9	Kuaishou	0.673
10	Weibo	0.599

One concern is that these non-textual media can be more pernicious as a form of disinformation delivery. Here I will highlight two core reasons: 1) multimedia disinformation is more difficult to detect; 2) multimedia disinformation may be more convincing.

4.7.3.1. Audiovisual disinformation

When looking at visual false information, Yang et al. (2023) find that 23% of political images on Facebook contain some form of disinformation, a figure that was slightly lower for images that just contained a political figure (20%). This is perhaps unsurprising in a context of the rapidly increasing popularity of audiovisual content. For instance, between 2016 and 2018, the number of photos uploaded to Instagram increased from 100 million to 400 million per day (Ofcom, 2019), while platforms such as TikTok have experienced significant jumps in users (Singh, 2024). *Table 9* below gives examples of different types of audiovisual media on social media platforms. The primary issue here is not just one of quantity. Simply put, image and video moderation is much more difficult than text based moderation, to the extent that it is often done by hand (Gillespie, 2018; Dan et al., 2021).

Table 9 Audiovisual media on social media platforms

Platform	Audiovisual features
Facebook	Videos, images, voice.
Instagram	Videos, images, voice.
Messenger	Videos, images, voice.
WhatsApp	Videos, images, voice.
TikTok	Videos, images.

Twitter	Videos, images, voice.
YouTube	Videos, images.
Telegram	Videos, images, voice.
Snapchat	Videos, images, voice.

The reason for this is because images, videos and audio are not inherently searchable. For example, text can be searched very easily. In this document for example, a simple Ctrl+F command will retrieve any string of characters that the user searches for. But the same functionality is not currently available with audiovisual data. This is because to make audiovisual data searchable it must first be processed. Images can have text detection (optical character recognition, or ‘OCR’) carried out (see Hardaker et al., 2023 for discussions and challenges of OCR) or be tagged using computer vision image detection methods (Christiansen et al., 2020). Videos equally must be processed using frame-by-frame OCR as well as computer vision analysis. Finally, audio must be transcribed. Each of these is not only very resource intensive but are also unreliable (Roy & Roy, 2009; Tian et al., 2021) leading to false positives and false negatives (VidalMata et al., 2023). As a result, audiovisual disinformation can bypass detection more easily. This is then compounded by the creation of doctored videos such as [deepfakes](#) that imitate others or show individuals in fictional scenarios.

Audiovisual disinformation may not just be harder to detect but also is amplified and consumed differently to textual content. Generally speaking, images are more persuasive than text (Wittenberg et al., 2021), more credible than text (Hameleers et al., 2020), and diffuse further in social media (Zannettou et al., 2018). Images and videos are also more attention grabbing than text (Counts & Fisher, 2011; Hsieh & Chen, 2011), while video content is more readily believed than textual content (Sundar et al., 2021) and more likely to be shared with others (Sundar et al., 2021), and audio is more persuasive than text alone (Schroeder et al., 2017; Mariadassou et al., 2023). This, combined with the fact that a great deal of audiovisual disinformation goes unmoderated, creates the pernicious effect of more content going unchecked.

4.7.4. Criticisms of Social Media Interventions

By far the most common criticism of social media interventions are those relating to freedoms of speech and expression. The balance between content moderation on social media and free speech has been described as a “moral minefield” (Kozyreva et al., 2023, p. 1).

Many who are against social media moderation, including the social media companies and CEOs themselves, position moderation as something that infringes free speech. On Facebook content moderation, Meta CEO Mark Zuckerberg said in 2019 that “the values of voice and free expression are enshrined deeply into how this company is governed” (Zuckerberg, 2019) and reiterated the need for social media companies not to make these decisions on their own. However, Mark Zuckerberg has also since chastised the US federal government for pressuring the platform to remove COVID-19 misinformation (Korte, 2024), so it is unclear whether the platform wants more or less autonomy.

A key concern is that social media moderation will lead to the silencing of certain voices or opinions, or will be weaponised by the state. Mitigating the spread of misinformation helps prevent online harms but may fundamentally be at odds with the right to communicate and receive information (Kozyreva et al., 2023), and consequently there is a careful balancing act. However, arguments of free speech absolutism and communicative libertarianism that maintain there should always be inaction (i.e. deciding not to moderate) have the consequence

of disproportionately negatively affecting those who most need help from content negatively impacting them, such as minority protected groups and people with disabilities (Kaniklidis, 2015; Chakrabarti, 2023). While social media interventions are largely optional and up to the discretion of the company, some countries also have legal requirements for the spread of disinformation on social media.

4.8. Legal Interventions

Legal and regulatory responses to disinformation are common with at least 50 countries enacting 98 different anti-disinformation actions as of 2019 (Flamini & Funke, 2019). Other reported numbers list this as high as 78 countries (Lim & Bradshaw, 2023). Funke (2021) splits state-level misinformation measures into two types:

1. Hard regulation: bills, laws, law enforcement, internet shutdowns (p. 452)
2. Soft regulation: media literacy initiatives, government reports, government task forces (p. 455)

Regulation in the EU and UK is discussed in [Section 4.8.1.](#) below.

One issue with so-called hard regulation is that it can be designed not as a measure to inhibit disinformation, but as a means for authoritarian governments to crack down on press freedoms and to discourage negative reporting. The punishments for hard regulation vary considerably, and Lim and Bradshaw (2023) identify four types which can hinder press freedoms:

1. Excessive monetary fines, which impose a range of financial penalties on journalists or media organizations
2. Imprisonment, which involves arresting and imprisoning journalists and editors
3. Content controls and corrections, which require journalists and media organizations to remove content or post state-approved corrections
4. Increased administrative burdens, which include measures like licensing regimes, data localization, transparency requirements, or mandated press or media councils.

(Lim & Bradshaw, 2023, pp. 1-2)

The ‘weaponization’ of such regulation leads to the oppression of journalists (Thomson Reuters Foundation, 2023). As Papadopoulou and Maniou (2024) note, “alongside explicit forms of threats such as physical attack or murder, legal threats are rapidly expanding as the law is being increasingly manipulated, abused and weaponized” and the threat of legal ramifications is being used to silence dissenting voices (p. 2).

One issue with disinformation laws is that they are often poorly defined and lack independent oversight, allowing them to be used by autocratic governments to limit press freedom. A report by the Center for News, Technology & Innovation (CNTI) found that in 32 pieces of disinformation legislation, just 7 defined what ‘fake’ or ‘false’ means, allowing the laws to be wielded for whatever purposes the government desires (CNTI, 2024). The result can be an ‘over criminalisation’ of disinformation (Asia Centre, 2019) with punishment varying ‘dramatically,’ from fines to imprisonment (CNTI, 2024).

The following section will carry out a case study focusing on the regulatory landscape in one country: the UK.

4.8.1. Disinformation Regulation and Policy in the UK

The UK currently has legislation specifically designed to target online disinformation, as well as older legislation that can be retrofitted. These are:

- Malicious Communications Act 1998
- Communications Act 2003
- Online Safety Act 2023

The Malicious Communications Act 1998 (MCA) originally addressed “information which is false and known or believed to be false by the sender(27). In 2024, this was repealed by the Online Safety Act. The Communications Act 2003 (CA) stipulates that the conditions for improper use of public electronic communications network may be met if:

(1)A person is guilty of an offence if he—

(a)sends by means of a public electronic communications network a message or other matter that is grossly offensive or of an indecent, obscene or menacing character; or

(b)causes any such message or matter to be so sent.

(2)A person is guilty of an offence if, for the purpose of causing annoyance, inconvenience or needless anxiety to another, he—

(a)sends by means of a public electronic communications network, a message that he knows to be false,]

(b)causes such a message to be sent; or]

(c)persistently makes use of a public electronic communications network.

(UK Government (Regulation: 2003 c. 21), 2003. Section 127 Improper use of public electronic communications network)

The CA could cover online disinformation that harms a third party, but it is unclear whether it has ever been used to enforce this. The CA has been used to prosecute online abuse and hatred – for example in 2011 when a Facebook user invited others to “smash up a police car” (BBC News, 2011). Section 2(a) above covering false information was repealed by the Online Safety Act.

The Online Safety Act (OSA) is the UK’s main regulatory tool for online disinformation. It carries out two main tasks:

- Establishes additional protections for children online
- Establishes the media regulator Ofcom as the body responsible for enforcement.

Pertaining to false communication, the Act states:

(1)A person commits an offence if—

(a)the person sends a message (see section 182),

(b)the message conveys information that the person knows to be false,

- (c) at the time of sending it, the person intended the message, or the information in it, to cause non-trivial psychological or physical harm to a likely audience, and
- (d) the person has no reasonable excuse for sending the message.

(UK Government (Regulation: 2023 c. 50), 2023b.
Section 179 False communications offence)

Those exempt from section 179 are recognised news publishers and those who hold a licence under the Broadcasting Act 1990 or 1996, when the communication is in a film made for cinema or the public, or transmitted on an on-demand programme service (Section 180). The punishment for a false communication offence is a fine and/or up to six months imprisonment.

The act covers social media platforms, search engines, and pornography websites and requires them to work on stopping the spread of illegal content on their platforms (Sections: 9, 10, 21), to protect children from harm (Sections: 12, 13, 29, 30), and to ensure platforms enforce their own terms of service (See sections: 10, 71, 72, and others).

The OSA is designed not to guarantee that all offending content is removed, but instead to ensure there is a system to reduce the presence of such content (Judson et al., 2024, p. 7) and it compels social media companies to act on illegal content but does not impose how much action must be taken. Regulation and policy should be seen as part of the resilience package of education, platform interventions, etc., but not a sole fix for disinformation, its spread, and effects.

4.9. Post Truth

At this point it is important to make one key observation about this chapter, which is that it has focussed largely on false content and false news. This of course makes sense for the topic at hand but it means I have not yet said enough about legitimate news. This brings up a core question: does disinformation and legitimate news spread in the same way? In other words, is disinformation unique?

Falsehood flies, and the Truth comes limping after it
(Jonathan Swift, 1710)

This question of the differences between legitimate news and false news could be a confounding variable in research, because we may not know whether we are analysing distinct patterns of disinformation sharing, or just generic news sharing.

In their seminal work comparing the spread of true and false news online, Vosoughi et al. (2018) find that “falsehood diffused significantly farther, faster, deeper, and more broadly than the truth in all categories of information” (p. 1). They find that this effect was further amplified for political content and suggest one driver could be novelty, as false stories tended to be more novel. Interestingly however, they find that automated accounts such as bots shared false and true news in similar proportions, suggesting that disinformation is a uniquely human problem (p. 5).

This novelty bias may not be unique to disinformation as previous research has found novelty affects information and news consumption, as well as reactions to information and news

reactions (Mendelson, 2001; Berger & Milkman, 2012; Han & Arpan, 2017). However, disinformation is likely to be more novel because it is fabricated. In other words, we are unlikely to have heard of the story before because it is not based in reality, and therefore disinformation producers have infinite potential stories to pick from.

This issue may also be getting worse; Rogers (2020) finds that between the same periods in 2016 and 2020, the proportion of disinformation to legitimate news engaged with has shifted towards greater engagement with disinformation (disinformation:legitimate information, 2016 = 1:4, 2020 = 1:3.5). While this shows that the majority of engagements are with legitimate news, it shows a concerning direction of travel and is “an admonition that the measures undertaken to date have not lessened the phenomenon” (p. 2).

A term often used to reconcile the notions of disinformation and legitimate news with each other is ‘[post truth](#)’. The phrase post-truth was popularised in 2015 and 2016 in response to, chiefly, the rise of Donald Trump to president of the United States (Lewandowsky et al., 2017) and the word being named as word of the year by Oxford Languages (Oxford Languages, 2016). As shown in [Figure 18](#) below, post-truth is the notion that many people no longer believe in facts, instead choosing to believe information that confirms their pre-existing beliefs. The term is closely linked to the spread of disinformation and how many people choose to believe what they want, rather than believing things that are evidenced in reality.

Post: Subsequent to, later than; following, since. (OED, 2023i)

Truth: Something that conforms with fact or reality. (OED, 2024e)

Post-truth: Relating to or denoting circumstances in which objective facts are less influential in shaping political debate or public opinion than appeals to emotion and personal belief. (OED, 2023h)

Figure 18 Definition of 'post', 'truth', and 'post truth'

Post-truth holds that facts have “lost their currency in contemporary political and public debate” (O’Callaghan, 2020, p. 339), ceding ground to alternative facts, unproven conspiracies, and disinformation. In the post-truth lens, truth is seen as relativistic (Aspernäs et al., 2023) and something that is “considered the truth because of its utility to one person is not the truth for the other person” (Brahms, 2022, p. 7). Central to post-truth is a disregarding and indifference to the objective truth. However, I would suggest that post-truth actually misrepresents the current sociopolitical climate. I believe we are not post-truth, but actually truth obsessed, and I will explain the rationale for this below.

Post-truth holds that people disregard the truth in order to believe what they want to believe. But that is not always the case. In many instances people “are not disinterested in truth, but are hyper-concerned with it — especially the idea that it’s being hidden” (Shane, 2020). For example, the 9/11 Truth Movement is a group of activists and conspiracy theorists who believe the September 11, 2001 terrorist attacks were not carried out by Islamist terrorists, but instead were acts of domestic, government-organised terrorism (Sampson, 2010). Proponents of the movement refer to themselves as ‘truthers’. Various polls have found this belief is common, with some reporting that anywhere between 10-15% of people believe the US government was responsible for the 9/11 attacks (WorldPublicOpinion.org, 2008; Richey, 2017). These are people who in their own words are not disinterested in the truth, but in fact dedicated to finding it.

This moniker has been used by other groups since. In the 2020 US presidential election and 2022 US midterm elections, “election truthers” took it into their own hands to carry out vigilante-style election safeguarding (Hasen, 2024), fuelled by disinformation claiming electoral fraud. In 2022, Donald Trump launched ‘TRUTH Social’, a social media platform similar to Twitter that “in effect, functions as a kind of right-wing Twitter, but without the content regulation that is typically found in mainstream social media platforms” (Gerard et al., 2023, p. 1034). TRUTH Social “seeks to create a free speech haven” (TRUTH Social, 2024). Again, neither 9/11 truthers, election truthers, nor TRUTH Social shun the truth, instead they wholeheartedly endorse it and make seeking it out their *raison d’être*. They believe the truth is being suppressed, whether by powerful governments, ‘left wing’ big-tech moderation policies, or other forces. Consequently, post-truth is a misnomer. People are not post-truth, they are truth-obsessive. They believe the truth is hidden from them and form social groups, enterprises, and other organisations to root it out.

One issue with the post-truth label is that it excuses dishonesty and sets lower moral standards for partisans (Effron & Helgason, 2022). This siloing of certain people or groups as post-truth almost enables their truth-denying behaviour because we come to expect it of them as we have framed them as ‘post-truth’. This then allows groups to polarise further and fester on the fringes of society. The idea of post-truth neatly sums up some of the philosophical challenges associated with disinformation. Namely the need of many to not just label what they see as a new phenomena but as a form of linguistic nomination that siloes, and almost writes off, certain individuals as post-truth, implying they are separate from ‘ordinary’ society. This ironically sums up the feeling by many that they are excluded from mainstream society and media and therefore must seek alternative news sources that profiteer from producing disinformation.

4.10. Conclusion

Post-truth is just one component of the wider disinformation landscape and this literature review has explored the complex ways in which disinformation can be believed ([section 4.1.](#)), can spread ([section 4.2.](#)), how it relates to key issues such as health and politics ([section 4.3.](#)), affects different people and areas differently ([section 4.4.](#)), can be mitigated ([section 4.5.](#)), the role factchecking plays ([section 4.6.](#)), how it can be detected ([section 4.7.](#)), and the role of regulation ([section 4.8.](#))

Through this, the literature review has shown that disinformation is a social, political, electoral, technological, cultural, and psychological issue. In other words, disinformation affects, and is affected by, many aspects of our everyday lives both at the individual and collective level. Throughout the literature review I have deliberately included authentic examples of disinformation and the types of technologies that affect disinformation to ground the literature review in real-world experiences and to show the varied ways in which disinformation can manifest.

Equally however, throughout the literature review there is one consistent issue that scuppers the advancement of disinformation research again and again: [transparency](#). Whether it is the effectiveness of interventions, reach of content, how many people share false content, the impact on elections, the differences in global effects, or how and why people share content, the lack of transparency from social media companies obfuscates research. This is because a great deal of this research is carrying out experimental studies to replicate real-world conditions, or using circumventory measures like classifying ‘fake news URLs’ because we do not have access to social media company’s metrics on how false content spreads online. The result is, our

understanding of disinformation is being intentionally limited and restricted. This is reflected in *Policy Insights* at the end of this thesis.

While the previous chapters have introduced disinformation as a concept and explained how and where it can occur, I will now turn my attention to the data and methods used in this thesis.

5. Data and Methods

He was surprised that so much misinformation should exist with respect to the outrages perpetrated in different parts of the country.

House of Commons, 'Petition From Birmingham Against The Orders In Council'. (Hansard, 1812)

This chapter introduces and discusses the sources of data and the methods of analysis used in this thesis. First, it begins with contextualising the data by defining key terms such as 'social media'. Then, it details and discusses the rationale for the data selection and the parameters chosen in the creation of the corpora. The characteristics of the social media platform Twitter are then discussed, paying particular attention to group dynamics and site norms. Details are then provided on the format of the data including how it is presented and any data that has been omitted from the corpora. The data section concludes with a discussion of the legal and ethical considerations of this project. Finally, the methodology section discusses the methods, tools and frameworks used to respond to each RQ.

5.1. Defining the Data

This section defines key terms relevant to computer-mediated communication (CMC) and social media data. More importantly though, this section details how these terms will be used in this thesis. A fuller [Glossary](#) is provided at the end of this thesis offering definitions and explanations of additional technical terms. Words with an entry in the glossary will appear underlined when they are used throughout the thesis, and those accessing this document in electronic format will be able to click on the word to go directly to the glossary entry.

This following section consists of two main sub-sections: social media in its broadest sense; and Twitter as a specific example of social media. The purpose of these sections is to both describe the online context and its affordances, and to define some of the most important terminology as it relates to this thesis.

5.1.1. Social Media

It is useful to start out by disentangling terms like social media, social network, and social media platform, especially since these are often used interchangeably.

The term 'social media' is widely used to refer to both user-generated content that appears on websites (or apps) as well as the social media ecosystem as a whole. For example, Howard and Parks (2012) define social media as:

- a) the information infrastructure and tools used to produce and distribute content
- b) the content that takes the digital form of personal messages, news, ideas, and cultural products
- c) the people, organizations, and industries that produce and consume digital content (p. 362)

Howard and Parks (2012) recognise how social media is increasingly used as an umbrella term to refer to the social networking websites, their contents, and their operators (owners). After discussing various permutations, Carr and Hayes (2015) define social media as:

Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others (p. 50).

This definition foregrounds user-generated content (UGC) as a distinguishing feature of social media. UGC is distinguished from, for instance, business-generated content (BGC), where (the representative of) a company (such as a news broadcaster) produces content, typically for a general audience to consume. Those audience members may in turn produce UGC on the basis of that material, or disseminate their own content while consuming content from other users. The video-hosting platform, YouTube, for example, epitomises the concepts of both user-generated and user-consumed content. In 2021, YouTube claimed that “500+ hours of content [is] uploaded every minute” (YouTube, 2021), combining UGC and BGC. And four years earlier, in 2017, users were already watching one billion hours of video every day (YouTube, 2017). Relative to the ever-growing amount of UGC, YouTube itself creates a miniscule fraction of content, and the little it does produce tends to be limited to advertising and promotional materials.

UGC is an important development that marks a transition from Web 1.0 to 2.0. It is beyond the scope of this thesis to fully explore the history of the development of the worldwide web, however a short and extremely simplistic chronology is presented here to contextualise the rise of UGC.

Web 1.0, the original iteration of the worldwide web (WWW), was designed to be a “a medium for the broadcast of read-only material” (Berners-Lee, 1996) whereby users primarily consumed but largely did not produce content. Web 2.0 was the first participatory web, and this important step heralded a significant restructuring of mass media. The ability for ordinary users to generate their own content challenged the centralised production of mass media and opened up “opportunities for participation by ordinary users” so that they could become “producers of content in a way that is impossible without the Internet” (Blank & Reisdorf, 2012). It is important to note that Web 1.0 and 2.0 are not formal iterations of the web, but rather reflective categorisations of internet usage. The transition from Web 1.0 to Web 2.0 can be characterised by users transitioning from consumers into hybrid consumer-producers.

Web 2.0 saw an ever-increasing transition into the internet as a repository of user-generated content. However, while this meant that Web 2.0 was traditionally seen as a way of moving power from large mass media producers (governments; media organisations) to individuals, the reality is that a huge quantity of user-generated content, where individuals supposedly take power, is actually controlled, hosted, and in some cases, owned in perpetuity by large corporations such as Alphabet Inc. (Google; YouTube) and Meta (Facebook; Instagram). In this sense, Web 1.0 and Web 2.0 have merged to create a system whereby individual users have the appearance of control but there is still an overarching system of mass media hegemony operated by a tiny minority of highly select, privately operated (social) media companies.

For the purposes of this thesis, ‘social media’ will be used interchangeably to mean user-generated content itself, the infrastructure, and the operators that surround this UGC. As is found in general discourse, the context of the usage itself should make clear which definition is occurring at any given moment.

5.1.2. Social Media, Social Networks, and Social Platforms

Three further terms often used interchangeably are ‘social media’, ‘social network(ing)’, and ‘(social) platform’. Each can be defined as:

Table 10 Definitions of social media, social network, and social networking

Term	Definition(s)
social media	“websites and applications which enable users to create and share content or to participate in social networking” (OED, 2021) “The messages and resources created and shared within social networking and content-sharing website” (Chandler & Munday, 2016)
social network	“a system of social interactions and relationships; a group of people who are socially connected to one another; (now also) a social networking website; the users of such a website collectively” (OED, 2021)
social networking	“the use or establishment of social networks or connections; (now esp.) the use of websites which enable users to interact with one another, find and contact people with common interests, etc. (frequently attributive).” (OED, 2021)
social platform	“a web-based technology that enables the development, deployment and management of social media solutions and services. It provides the ability to create social media websites and services with complete social media network functionality.” (Techopedia, 2021)

Table 11 Social media, network(ing), and platforms

There are several aspects to break down from these definitions. First, it is clear that social media can refer to the means of communication, or to the communications itself.

Prior to the internet, a social network was seen as “a web of relationships between individuals” (Chandler & Munday, 2016) (cf. social network analysis, Scott, 1988). However, the term expanded to become the name for the online spaces that facilitated the development and sustaining of social networks. That is, while social networks previously existed offline, with the advent of social media websites they began to emerge online and as a result, the spaces where people chose to network socially became social networking sites. This was later shortened to social network, and most contemporaneously, shortened even further to simply socials.

The notion of the “platform” is more complex than it seems. Technologically speaking, a platform:

provides markup language for creating native applications, an application programming interface (API) for third-party application integration and a backend admin console for managing the entire user base and preferences. From a user's perspectives, a social platform enables communities, sharing of content, adding friends, setting privacy controls and other native social media network features. (Techopedia, 2021)

A platform is the digital infrastructure for a social media website; it is where the content is hosted. (More recently this may be referred to as being stored in the [cloud](#)). More recently, the term ‘platform’ has come under legal scrutiny from those who believe social media websites such as Facebook and Twitter are in fact publishers and not (just) platforms. The difference here is reflected in the definitions shown in [Table 12](#).

Table 12 Definitions of platform and publisher

Term	Definition
platform	“a company or technology that enables communication and distribution of information” (Subsign, 2018)
publisher	“a company or person that curates and distributes content; legally responsible for the posted content and the source ” (ibid., emphasis added)

To reiterate, a platform is a technology that allows users to communicate and distribute content, in much the same way that a telephone wire is simply a conduit for phone conversations. Just as it makes no sense to hold a phone wire responsible for the words people choose to convey through it, so a platform is seen as not responsible for the content that users choose to generate on it. A publisher, however, is a content distributor and it is legally responsible for that content. This distinction is important. If a social network is deemed a platform, this places the responsibility for hate speech, abuse and legal transgressions on the user who generated the content. However, if a social network is (also) regarded as a publisher, this places the burden on the social network owners.

Table 13 summarises the definitions that are applied in this thesis

Table 13 Definition of social media and platform used in this thesis

Term	Definition	Example
social media	The ecosystem of user-generated content, the tools used to share content, and the practices and norms involved	<i>Social media have grown considerably in the last decade</i>
social media platform (or simply, platform)	An organisation or company that hosts user-generated content	<i>Facebook is the world’s largest social media platform</i>

Given that the data in this thesis largely comes from the US (or at least, a US platform), it is important to make reference to the two seminal platform v publisher cases that sparked a lot of the debate in this area. In the United States, Section 230 of the Communications Decency Act of 1996 has given organisations “broad immunity from liability arising from user-generated content” (Citron & Wittes, 2018, p. 453) and protects companies from what is said on their platforms. This was not always the case for Section 230, and two key cases, *Cubby, Inc. v. CompuServe, Inc* and *Stratton Oakmont, Inc. v. Prodigy Servs. Co.*, brought about Section 230 amendments. Broadly speaking, this happened because these cases resulted in a situation where a platform was compelled to moderate a number of messages that simply was not possible. Consequently, online platforms were allowed to implement their own standards and moderation, and free speech was allowed to flourish uninterrupted online.

One platform that has been offered these protections under Section 230 is Twitter, the source of data for RQs 2 and 3.

5.1.3. Twitter

At the time of writing, Twitter is a [microblogging](#) social media platform that allows users to post 280-character delimited messages (or [tweets](#)). While Twitter capitalises the names of functions on its platforms, such as Tweet, as these are not proper nouns, nor verbs derived from proper nouns, in this thesis they will be presented in lowercase, i.e. tweet. This will also apply to [retweets](#), [likes](#), [replies](#) and [quote retweets](#). In 2022, Twitter was sold to Elon Musk and later re-named X, with tweets relabelled as ‘posts’ along with many other changes. As the data was collected pre-Musk when X was Twitter and posts were tweets, they will be referred to in this way.

Twitter is a social network whereby registered users post (hereafter: tweet) content from their account. The typical audience for a tweet is that account’s followers – other users who subscribe to that account’s profile. However, tweets are not exclusively shown to followers, and algorithmic [recommender systems](#) will promote tweets to non-followers if that content is deemed relevant. Indeed, tweets can and sometimes do reach far beyond the audience that the user may have expected or intended, perhaps because they are unusually funny, prescient, emotive, and so on. When tweets are very widely picked up and republished (retweeted), this is described as going “viral” – an important phenomenon in the field of disinformation.

5.1.4. Twitter’s Format

In both its browser and app format, Twitter is primarily made up of three spaces: the home timeline (hereafter just ‘timeline’), the explore (or trending) page, and the profile page. The timeline is the default landing page for logged-in Twitter accounts, and it is primarily algorithmic. That is, contrary to its name, users are shown tweets that Twitter’s algorithm has deemed most relevant based on the user’s behaviour on the platform, rather than the most recent tweets. Through this lens, it provides the user with an aggregate of tweets and content from the accounts that they follow, as well as adverts and other tweets outside of their follower list that Twitter’s recommender system thinks may be of interest to that user. The timeline can also be set chronologically to show the most recent tweets first so that time is prioritised over relevance, however this setting cannot be made permanent and even within the chronologically ordered tweets there is still advertising and non-follower content.

The explore page contains the search tool for Twitter, as well as [trends](#), trending topics and [hashtags](#), and Twitter-curated news stories and other content. There is also a great deal of other functionality on Twitter and X, but that will not be discussed further here due to their (ir)relevance to the data collected here and subsequent analysis.

The account profile page comprises a mixture of required and optional information that loosely corresponds to the biography of a unique identity – though notably this does not have to be a human. An account can be publicly available (i.e. viewable by anyone) or private (only an approved follower can see tweets). I will only discuss features as they pertain to public profiles, as the types of profiles collected in the methods described in [Section 5.3.](#) below. Mandatory fields include a display name, which does not have to be unique (e.g. William Dance), and a username which must be unique, e.g. @williamdance. This is preceded by the @ (or “at”) symbol, and tweets can be directed at users by tagging or *atting* (@-ing) their unique username. Depending on their account settings, the atted user will then be notified of this interaction. Twitter profile pages also display the month and year the user joined Twitter, a follower count, a following count, and a tick to show whether that user is “verified”. This verification is

designated by Twitter and indicates to other users that “an account of public interest is authentic” (Twitter, 2021c). The account page also provides a living record of a user’s tweets, likes⁶, retweets, media, non-hidden lists, and other activity.

How any part of Twitter is presented is dependent on the device used, such as a desktop computer or a vertical format smartphone. Optional information includes a profile picture, a landscape cover picture, a biography limited to 160 characters, a link (e.g. to a personal website), a user-defined location (which does not have to be real), and a date of birth.

5.1.5. Anatomy of a tweet

The primary form of interaction, and indeed purpose of Twitter, is to send tweets. It is therefore important to describe the relevant features and limitations of this particular function.

Tweets can contain a variety of media, and must have at least one element, i.e. they cannot be left blank. At the time of writing, the currently available media formats include text, links, images, videos, polls, emoji, location check-ins, and self-recorded audio. Tweets can also be in [threads](#) where they appear as “a series of connected Tweets from one person” (Twitter, 2021e). Up until 2020, users could reply to their own tweets (thus making a thread) or to other user’s tweets. After 2020, however, Twitter introduced an option for new conversation which allowed users to limit who could reply to their tweets. Twitter also introduced “fleets” and “spaces” in 2020. A merge of *fleeting* and *tweet* (i.e. a tweet that lasts for a short time), a fleet is a portrait-oriented photo, text, or video that lasts for 24 hours. Fleets can contain “photos, GIFs, Stickers, videos, links, or text” and are designed for mobile use (Twitter, 2021b). These were later discontinued due to poor uptake. Following the success of the audio chatroom platform Clubhouse, Twitter introduced spaces – a feature that lets users set up a virtual, audio only chat room where they can broadcast live audio from their device to an audience. These are still part of X.

If an account is public, that user’s tweets can be retweeted by others. In this way, if Account A is retweeted by Account B, then A’s content will now appear in the timeline of B’s followers. A retweet retains the original author’s name and information. Tweets can also be quote retweeted whereby the original tweet is nested and the re-posting user adds their own tweet on top. Quoted retweets can feature text, images, GIFs and emoji (note that accounts set to private do not allow these features.)

5.2. Data – Norms and Characteristics

This section narrows down to look at the functions, norms and characteristics of the tweets sent on Twitter. These terms have already been defined in the previous section ([Section 5.1.](#)) and now their functionality and communicative purposes are discussed. This section details not just the different functions available on Twitter, but the motives and purposes behind using them.

5.2.1. Mentions

A [mention](#) is a tweet “containing another account’s Twitter username, preceded by the “@” symbol” (Twitter, 2021a). Depending on the recipient’s settings, they may be notified that this tweet has been sent. Traditionally on Twitter, mentions were deprioritised by newsfeed algorithms; this means the tweet by User A mentioning User B would not be shown as often to

⁶ A public like list was removed in 2024.

Users C, D, and E in their timeline. The early assumption was that only Users A and B would be interested in the message. In response to this, when users wished to start their message with another account's username, it became widespread practice to include a full stop '.' directly before it. This would trick the algorithm into thinking that the tweet was not specifically directed at one single user but was more general content that simply happened to mention someone in passing. This demonstrates how mentions are not just simply used to send a notification to other users, but that users may want to include someone in their tweet (in an initial position) and still broadcast that content more publicly, whether for positive or negative reasons. Mentions are similar to replies, which were described previously in [Section 5.1.3](#).

5.2.2. Retweets

Just like mentions, retweets also have a variety of uses. While the purpose of a retweet is to share another account's tweets to one's own followers, the function of this varies. In a 2014 user survey of Twitter users (n=316), Metaxas et al. (2015) found that when retweeting, for Twitter users it is important that the tweet is interesting (94% of participants), trustworthy (78%), informational (77%), something the user agrees with (73%), entertaining (66%), or emotionally resonant (45%). While these results are derived from a very small sample of Twitter users, they serve the purpose of highlighting the multitude of reasons why people may retweet content.

Importantly here, some of these characteristics may seem at odds. For example, a tweet which is emotionally resonant or entertaining may not be trustworthy or informational. However, while there are identifiable patterns across groups of Twitter users, individual variation (depending on the tweet being viewed) is also substantial and, to date, has not been assessed in the likelihood of retweeting content.

Retweets can also be viewed as a form of information sharing across the "network as a whole, since it is used to spread information that may interest all users" (Recuero et al., 2021, p. 307). Retweets can also be a form of endorsement that benefits the original sender of the tweet through tacit approval of their content. Retweets can function as endorsements by "allowing individuals to rebroadcast content generated by other users, thus raising the content's visibility" (Conover et al., 2011, p. 192). This constitutes an interpersonal function of retweeting. In recognition that retweeting is widely seen as an act of endorsement, it is common for users to convey that "retweeting does not equal endorsement" or "retweets ≠ endorsement" in account biographies. This can be further compounded by adding statements such as "personal views only", where a Twitter user wishes to distinguish personal views from professional content.

This type of disclaimer can be seen below in an example user description (bio) from Associate Professor in Public Health, Dr Nisreen Alwan (@Dr2NisreenAlwan; accessed 10/12/2021):

Associate Professor in Public Health @unisouthampton MBE MBChB FFPH
MRCP MPH. MSc PhD in Epidemiology. My words=my personal views.
RT≠endorse

Other users extend this to all Twitter functionality, such as the U.S. Department of Defense (@DeptofDefense; accessed 10/12/2021):

The official account of the U.S. Department of Defense. Following,
RTs, links, and likes ≠ endorsement.

Finally, there are also examples where ‘≠ endorsement’ is extended even further, such as with biologist Richard Dawkins (@RichardDawkins; accessed 10/12/2021):

UK biologist & writer. Science, the poetry of reality. Good-humoured
ridicule of religions. RTs don't imply endorsement, nor exhaustive
research of tweeter's CV

That it is required to explicitly state that “retweets ≠ endorsement” implies that retweets usually do suggest endorsement. There is also the factor that to avoid professional-personal conflict, Twitter users add these disclaimers to protect themselves from professional criticism.

Retweets also play a role in the curation of content for users. Users can retweet content to turn their personal accounts into an archive of content they agree with or that supports their position. This in turn can contribute to a potential echo chamber effect where users are only consuming media they agree with (Guess et al., 2018). This retweeting also has a social function, that can signal to others that a user’s account is dedicated to a particular cause (i.e. the content of the retweets or the types of accounts retweeted) and can be done to indicate awareness and in-groupness to other users (Rudat & Buder, 2015).

This list of motivations is not exhaustive, and given how creative users are at adapting technological affordances to fulfil social practices, no list realistically could be. The main point, however, is that these functions are complex, they have many purposes, and they are not mutually exclusive. These features can be used in complementary, contradictory, or even a deliberately ambiguous ways, making any definitive taxonomy impossible.

5.2.3. Hashtags

A hashtag, shown by a # symbol, is “used to index keywords or topics on Twitter” (Twitter, 2021f). Hashtags must be one continuous token minimally consisting of alphabetic characters. Optionally they can also contain cardinal numbers or underscores, but no other characters, including spaces, are permitted – there must also be at least one non-numeric character in a hashtag. For instance, sequences like #One2One and #1_to_1 will function as legitimate hashtags, but #1_2_1 would not. Hashtags can appear anywhere in a tweet and once live, they appear in blue and become interactive in the same manner as a hyperlink: [#TwitterTips](#).

Hashtags are a form of “collaborative metadata [...] embedded in social media texts” (Zappavigna, 2015) that users can access and use. For example, interacting with a hashtag will take the user to the Twitter search page and show other tweets also using this hashtag. In this sense, hashtags function like a channel for a particular topic, genre, individual, issue, or conversation in that they provide an index of tweets discussing that broader topic.

Another function of hashtags is that they contribute to the trending topics, or “trends” on the platform. Trending topics are identified by Twitter’s algorithms as those that are “popular now, rather than topics that have been popular for a while or on a daily basis, to help [users] discover the hottest emerging topics of discussion on Twitter” (Twitter, 2021i). Trends are shown in the “Explore” section of Twitter, and a word or hashtag that has undergone a sudden increase in frequency of use is described as “trending”.

Hashtags can also be manipulated and coopted as part of information operations, including disinformation campaigns. This can happen in several ways. People may use popular or current hashtags in tweets that form part of their information operations so people are more likely to stumble across the content. This has been seen for example with hashtags such as

#blacklivesmatter in so-called ‘counter-framing’ efforts (Klein et al., 2022). In other instances, tweets can include hashtags so that other tweets using hashtags in a meaningful way are less visible, i.e. harder to find. This practice, known as [zone flooding](#), functions by overloading the information environment with all types of information to obfuscate the legitimate information (Illing, 2020; McRae et al., 2022).

While hashtags may provide searchability at the functional level, at the communicative level they do far more. Hashtags can be used to provide additional linguistic commentary in a tweet. For example, a user who tweets “I’m planning on going back to sleep at 1 #tootired” (Zappavigna, 2015) is probably not trying to index their tweet for searchability, but is instead “making an emotionally charged metacomment” (Zappavigna, 2015, p. 275). Zappavigna (2015) also notes other communicative functions of hashtags such as “indicating the semantic domain of the post” with #knitting, and “linking the post to an existing collective practice” with #FF (Follow Friday) (Zappavigna, 2015, p. 275) (see previous discussions in [Section 2.9.](#)).

5.3. Twitter Data Collection

The data gathered in response to RQs 2 and 3 were collected using Twitter’s Academic Research API which allows access to all Twitter API v2 endpoints. The API allows researchers to “access Twitter’s real-time and historical public data” (Twitter, 2021d), to a limit of 10,000,000 tweets per month. To answer RQs 2 and 3, two corpora were built. Both corpora span the same ten-year period (2012-2021) and each was built to specific parameters. The sections below detail the parameters and construction of each corpus. This API was regrettably shuttered in 2023 and is no longer available for free to researchers.

5.3.1. RQ2: Disinformation Discussion Corpus

The Disinformation Corpus was designed to include discussions of the term ‘disinformation’, while also specifically excluding discussions of misinformation. This was so the corpus could be used to identify patterns unique to the discussion of intentional factually incorrect news (i.e. disinformation). The query used was:

lang:en -is:retweet disinformation -misinformation -fake news

This query excludes non-English tweets (lang:en) and any tweets containing ‘misinformation’ or ‘fake news’ (-misinformation -fake news). Tweets are in world Englishes, not only British English. The corpus of tweets was collected by randomly sampling for this query to retrieve a dataset that would not be too massive for analysis. To do this, random points in time were generated using PHP’s Mersenne Twister implementation (Joulain-Jay, 2021). 150 random points were generated for each month, with a collection target of 100 tweets for each point, ideally totalling 15,000 tweets per month. In practice, not all tweets that fulfilled the query and time-point parameters could be retrieved due to, e.g. being sent from private accounts.

Retweets were excluded from the original query (shown by the search operator ‘-is:retweet’) but this still left a substantial number of duplicates and near-duplicates in the data, such as:

Table 14 Example of duplicate tweets in the RQ2 corpus

Date	Tweet
2021-05-27	Biden pick for ATF pushes back against GOP senators and disinformation https://t.co/SpDBcXKID6

2021-05-27	Biden pick for ATF pushes back against GOP senators and disinformation https://t.co/u5RpoqcQJz via @nbcnews
2021-05-27	Biden pick for ATF pushes back against GOP senators and disinformation https://t.co/X4NF0wB38Z via @nbcnews
2021-05-27	Biden pick for ATF pushes back against GOP senators and disinformation https://t.co/x6wnRFRAEf via @nbcnews

These tweets all come from different accounts and only differ in the unique link at the end of the tweet (which links to the same news article). A Python script was used to remove both full and near-duplicates. Near duplicates were defined as tweets that match with up to 10 characters of leeway. The corpus size before and after deduplication are detailed below:

Table 15 Disinformation Corpus Size

Corpus	Tweets	Tokens
Original	2,387,416	35,220,952
Deduplicated	203,080 (-92%)	5,699,641 (-84%)

These duplicates, which comprised mostly news articles (see [Table 14](#)), were removed because the focus of this thesis is to investigate the discourses produced by individuals on Twitter and not by media organisations. The aim of this is to gain an understanding of how everyday individuals represent disinformation, rather than the narrative constructed by hegemonic media organisations. This meant a reduction in tweet count of 92% and a reduction in token count of 84%. This is a finding in its own right – the vast majority of data are repeats and duplicates. Namely, it demonstrates the dominance of institutional narratives on social media, that can drown out individual voices in discussions about disinformation. The purpose of this analysis was to foreground and analyse those individual voices.

[Appendix A](#) shows the tweet and token count for each month in the corpus. There is an uptick in both tweet and token count in 2017_11. This coincides with when tweet length was increased from 140 to 280 characters, suggesting that the lengthening of tweets led to more unique tweets. This could be explained by the fact that greater tweet length allows a greater range of linguistic features to be used, and that text length increases the likelihood a text is unique (Coulthard, 2004, p. 3).

The decision was made not to include variants such as the truncated ‘disinfo’ or to broaden the query and find versions with incorrect spellings such as ‘dsinformation’. There were three motivations for this. The first was that the aim of this thesis is to gain the most foundational understanding of how the terms ‘disinformation’ and ‘misinformation’ are used, and focusing only on the full terms allows me to gain these top level findings. Secondly, a term like ‘disinformation’ will differ to ‘disinfo’ in its use stylistically, meaning treating the two as equal could lead to conflating potential findings, acting as a confounding variable. A way to remedy this would be to collect both forms and then split them into different corpora, results, analysis, and discussions – something simply beyond the scope of this thesis. Finally, when it comes to collecting variations with typos it is difficult to capture all possible variations and some will inevitably be missed, especially given Twitter queries are limited to 512 characters, meaning multiple concurrent queries would have had to have been carried out. The same rationale applies to the ‘misinformation’ corpus (RQ3).

The Disinformation Corpus and the Misinformation Corpus (see below) were both part-of-speech (POS) tagged. POS tagging is the process of “enriching a corpus by adding a part-of-speech category label to each word” (Atwell, 2007, p. 1). Specifically, I used TreeTagger (Schmid, 1994) as implemented in LancsBox X (Brezina, 2018a) (full tagset [here](#)). According to Horsmann et al. (2015), TreeTagger has an accuracy of 94% on written texts, with an accuracy of 86.6% for social media data specifically, and it regularly outperforms other taggers. Other research has found an accuracy of around 97% for TreeTagger (Rehbein et al., 2012). POS tagging, and subsequent analysis of POS in the corpora, was intended for complementary purposes; that is to say, they do not comprise a core part of my analysis, but are used where suitable. For example, [section 8.2.1](#) explores the use of demonyms such as ‘Russian’ and uses the POS tags to distinguish between ‘Russian’ as a noun (i.e. a Russian person/language) and ‘Russian’ as an adjective. This distinction allows for more precise analysis of how specific terms are used in different contexts, particularly in relation to national identity and attribution of agency.

5.3.2. RQ3: Misinformation Discussion Corpus

Identical procedures were used on the Misinformation Corpus, except that in this case, the query was modified to:

lang:en -is:retweet misinformation -disinformation -fake news

The corpora counts below show that, similar to the Disinformation Corpus, when the Misinformation Corpus was deduplicated, the token count dropped by approximately two thirds.

Corpus	Tweets	Tokens
Original	2,191,543	35,695,684
Deduplicated	273,049 (-88%)	7,363,633 (-79%)

5.4. Ethics

As mentioned previously, Twitter data was accessed using Twitter’s Academic Research API. This API is for academic researchers (master’s students, doctoral candidates, post-docs, faculty, or research-focused employees at academic institutions or universities) and was made available to me through an application based on this PhD thesis.

Research ethics approval from Lancaster University’s FASS-LUMS Research Ethics Committee (FASS-LUMS REC) was not sought, as it was not required for a project dealing with publicly-available data. This was for several reasons. First, as Twitter notes in its privacy policy, that all users must agree to, Twitter is “public and Tweets are immediately viewable and searchable by anyone around the world” (Twitter, 2021h). To protect users who may not want their information to be publicly available, Twitter offers non-public ways of communications, namely through protected tweets and direct messages.

Second, there is already a convention in the research literature for this. Studies using publicly available Twitter data have discussed how “Twitter users are informed of the instant and broad nature of the dissemination of any public tweets” (Hardaker & McGlashan, 2016, p. 86). Vásquez (2021) simply refers to their Twitter dataset as “publicly-available data that any other user of Twitter would have access to” (Vásquez, 2021, p. 44). Finally, the data is provided by Twitter subject to approval. This project (thesis) was approved by Twitter and data was

collected following their limits and restrictions. In this thesis, data are not made publicly available and any time when it is necessary to present a Twitter user's name in the context of a tweet, the name will either be anonymised or replaced by a pseudonym.

5.5. Approach to RQ1

RQ1: What is disinformation?

While disinformation in its various guises has been an issue for hundreds, if not thousands of years, its rise to prominence was prompted by events such as the Presidency of Donald Trump, which led to a radical increase in research and literature on the subject. However, when seeking to synthesise and examine this literature, it quickly became apparent that there was very little – if any – consensus with respect to even the most elementary questions such as, "What is disinformation?". To lay the groundwork for this thesis, it was therefore necessary to undertake a considerable amount of primary data collection and analysis, such that this became a research question in its own right.

RQ1 comprises five parts and these are detailed in *Table 16* alongside the related methods.

Table 16 Focuses of RQ1

Section	Methods	Description
1. Understanding disinformation	Corpus-assisted etymology; historical literature review	This section is answered by using historical corpora, as well as other publications from the 20 th century, to understand the origins of term 'disinformation'.
2. Taxonomy of disinformation	Literature review; qualitative data analysis; historical corpus linguistics	This section combines a review of definitions of bias, satire, and other types of potentially misleading content, with qualitative analysis of disinforming headlines and satirical news. This serves to understand how these types of news crossover. Google Books English (34b words; 1810-2000) and Google Trends (2004-present) are also used to support qualitative findings.
3. Linguistic history of disinformation	Historical corpus linguistics	This section uses the Helsinki corpus (1.5m tokens; 730-1710) and Early English Books Online (EEBO; 1.2b tokens; 1473-1700) to track the token 'disinformation'.
4. Crowdsourced definition of disinformation	corpus linguistics; qualitative data analysis	Using the definitions corpus (Section 5.5.5.) this section carries out semantic domain analysis, supported by manual qualitative analysis.
5. Definitions of disinformation	Quasi-lexicographical	Based on the findings of all of the above, this section forms definitions of: disinformation, n.; disinform, v.; misinformation, n.; misinform, v.

The response to RQ1 necessitates a highly mixed-methods approach. Disinformation (as a concept and lexeme) has a long and complex history, and this made it necessary to devise a toolkit of methods that was responsive to the types of data in question to fully answer the question *what is disinformation?* Each approach is described in detail below. The following sections break down each component of the RQ1 approach.

5.5.1. Understanding Disinformation

This section looked at the historical, social and political background of disinformation as a concept (as opposed to disinformation as a term, see below). It used historical corpora, specifically the Google Books British English corpus (Davies, 2011) to trace fluctuations in usage of the term over time, to allow a focus on particular time periods of high usage. Alongside historical corpora, a historical literature review of disinformation was conducted. This identified sources such as the Great Soviet Encyclopaedia (1952) which would not be found in English-language corpora. The combination of historical corpus linguistics and a historical literature review enabled the identification and combination of resources in a way that provided a more nuanced and complete picture of disinformation than an approach that simply limited itself to select documents.

5.5.2. Taxonomy of Disinformation

This section incorporates studies from journalism alongside qualitative analysis of disinforming headlines and satirical news to explain key concepts such as [bias](#) and satire. The purpose of this is to define disinformation by looking at what it is *not*; that is to say, understanding disinformation by explicitly disentangling and separating it from other concepts it is commonly conflated with.

Given this section is mostly theoretical, Google Books English (34b words; 1810-2000) and Google Trends (2004-present) are also used to support qualitative findings to show how words are used in the real world, and how this can help develop the multiple, dynamic meanings of terms such as ‘fake news’. The section culminates in a disinforming cline which, using real examples, demonstrates the different types of content along a spectrum of intention to deceive.

5.5.4. Linguistic History of Disinformation

This section uses the Helsinki corpus (1.5m tokens; 730-1710) and Early English Books Online (EEBO; 1.2b tokens; 1473-1700) to track the token ‘disinformation’. Given the previous focus on disinformation as a concept, this section instead focuses on the noun ‘disinformation’. The purpose of this was to understand how the word was used before the modern internet era, and if/how the word has changed over time, including any synonyms and near-synonyms that existed and whether these have persisted or disappeared over time.

This part of the research question goes back furthest in time since understanding disinformation in the present requires us to understand how it has been used across centuries.

5.5.5. Crowdsourced Definition of Disinformation

This section explores how other people define disinformation. While looking at the history of a term is valuable, it is also important to survey present-day, contemporary usage of the term. This was included in the thesis to understand how people conceptualise disinformation and to see if there are any widespread misconceptions of the term. What distinguishes this from RQs 2 and 3 is that though contemporary, these are all formal, traditional, non-social-media sources for definitions. The full table of definitions can be found in [Appendix D](#).

The data for this section comprise 51 definitions of either ‘disinformation’ or ‘fake news’. These were taken from a range of sources, which are summarised in [Table 17](#). I will refer to this dataset as the Definitions Corpus.

Table 17 Sources of disinformation/fake news definitions

Code	Source	Details
ACA	Academic	Academic sources such as journal articles, books and journal editorials
INI	Initiative	Factchecking and counter-disinformation initiatives, such as WebWise
GOV	Government	Governmental, intergovernmental and supranational bodies such as the European Commission or the Department for Digital, Culture, Media & Sport
NGO	Non-governmental organisation	Non-governmental or not-for-profit organisations, such as the Atlantic Council
MED	Journalism; Media; Press;	Sources from written, broadcast, or other media, such as BBC Newsround or BuzzFeed News
REF	Reference; Dictionary; Library guide	Dictionaries and library guides, such as the Oxford English Dictionary
OTH	Other	For-profit businesses such as marketing companies or paid-for publications

The sources range from 2013 to 2021, and the distribution according to category and by year are indicated in *Figure 19* and *Figure 20*:

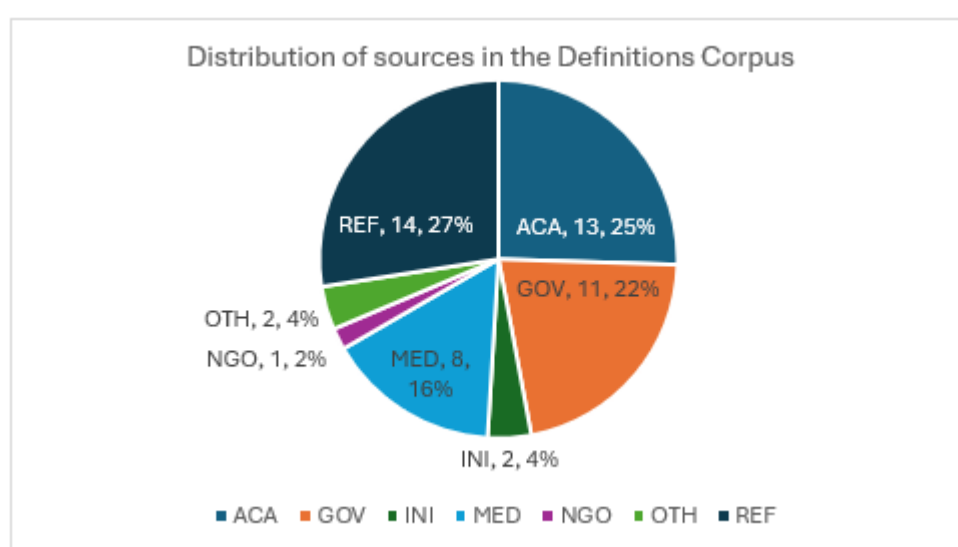


Figure 19 Distribution of sources for definitions of disinformation/fake news

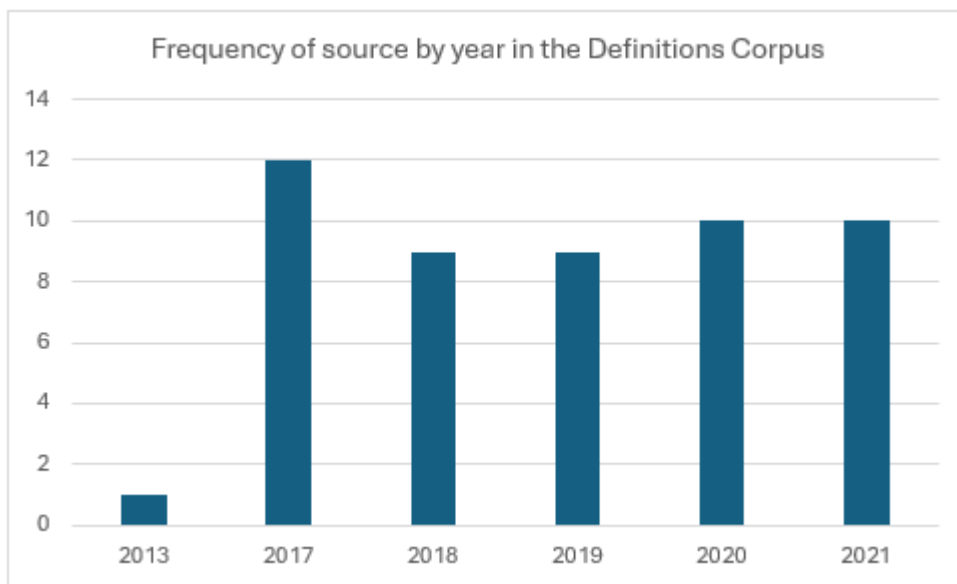


Figure 20 Definitions of disinformation/fake news by year

The largest category of source is Reference (REF) (27%), followed and Academic (ACA) (25%) and Government (GOV)(22%). Media sources comprise 16%, followed by Other and Initiative both at 4%, and finally NGO at 2%. The most recent sources from 2021 mostly comprise REF, such as dictionaries, that are continuously updated. Rather than seeking to have the same number of definitions across years (balance) I instead prioritised finding whatever definitions I could (representativeness) and including these. In this sense, this corpus can be viewed as what Teubert and Čermáková (2004, p. 120) call an 'opportunistic corpus', i.e. a corpus that is not intended to represent perfectly a certain discourse or language variety, but is a corpus comprised of the data "one can lay hands upon" (p.120). This corpus was designed to match the date range of the data used in RQs 2 and 3 (2012-2021 inclusive) but no sources could be found for 2012. This is likely because, as Gelfert (2018) note, around this period terms such as 'disinformation' and 'fake news' normally referred to satirical works and had not taken on their current meaning of false content disseminated largely through social media. Instead the terms have a "mildly progressive" connotation Gelfert (2018, p. 92) and disinformation/fake news was largely viewed as "a blend of information, entertainment, and satire" (Broussard, 2013, p. iii). In any case, the purpose of this was to investigate the sense of disinformation as used throughout this thesis (false content) and not these earlier meanings.

The Definitions Corpus was tagged semantically to identify the common elements of the definitions. Linguistic tagging is the encoding of linguistic information to a corpus and entails adding "descriptive or analytic notations [...] to raw language data" (Bird and Liberman, 2001, p. 23). For this corpus, the corpora were tagged with semantic tags using the web-based corpus analysis tool Wmatrix (Archer et al., 2002; Rayson et al., 2004; Rayson, 2008). Wmatrix produces annotated files that are tagged linguistically using the UCREL Semantic Analysis System (USAS) system (Archer et al., 2002). The result is every word in a corpus is automatically allocated to a semantic category.

While this provides a way to quantitatively analyse common elements of definitions, it is also important to combine this with manual, qualitative comparisons of the definitions to identify features semantic tagging may not tag as similar but which have cultural or social similarities.

5.5.6. Definitions of Disinformation

The purpose of all sections above is to develop a well-rounded, foundational understanding of disinformation. These insights then contribute to a definition of disinformation that is grounded in the linguistic and social/political/cultural history of disinformation.

This section fundamentally answers RQ1 *what is disinformation?* and provides definitions for *disinformation*, n., *disinform*, v., *misinformation*, n., and *misinform*, v.

5.6. Approach to RQ2 and RQ3

Having established a working definition for disinformation in RQ1, RQ2 and RQ3 ask:

1. What are the discourses of the term 'disinformation' on Twitter?
2. What are the discourses of the term 'misinformation' on Twitter?

These RQs investigate the ways that disinformation is discussed and represented on social media. The method for RQ2 and RQ3 was as follows:

1. Disinformation Corpus compared to Misinformation Corpus (and vice versa to generate keywords).
2. Keywords grouped manually using a bottom-up, data driven approach
3. Keyword groupings finalised
4. Results and discussion

5.6.1. Statistics

For any keyness analysis, a log ratio (Hardie, 2014) threshold of 1.00+ was used; this means the item in question is used at least two times more often in the target corpus than the reference corpus (this is calculated using relative not raw frequency). Similarly, a log likelihood cut-off of 15.13 was used, equivalent to $p < 0.0001$. A minimum frequency cut off of 10 was implemented. These measures are used in tandem to account for both effect size (log ratio) and confidence (log likelihood), (see Brezina, 2018 for more) and create a robust set of keyness measures for identifying overused items.

5.6.2. Process

For the Disinformation Corpus, the Misinformation Corpus was used as a reference corpus (and vice versa). Implementing a minimum LogRatio score of 1.00 and a minimum loglikelihood score of 15.13 ($p < 0.0001$), 1,452 disinformation keywords and 857 misinformation keywords were returned. This large number of keywords necessitated a further cut-off, so a minimum reference corpus frequency of 10 was implemented. This eliminates words with a very low frequency in the reference corpus that leads to a high LogRatio in the target corpus, giving the illusion of a large difference that is contributing to the formation of (sub)discourses in the target corpus. This resulted in 699 disinformation and 493 misinformation keywords. These can be found in [Appendix E](#) and [Appendix F](#).

As Baker (2006, p. 71) notes, frequency lists contain valuable information but an approach that combines quantitative and qualitative analysis is more productive than solely relying on tables of ranked keywords. One method of analysing quantitative results (i.e. keywords) is to semantically group words by their meaning (Baker, 2010; Seale & Charteris-Black, 2010; Smith, 2020). While approaches exist for doing this in an automated way, a critical benefit of manual

categorisation is that concordance lines can be examined during the classification process to inform the groupings which leads to a form of analysis that is better informed by contextualised usage in the corpora.

For example, the token ‘farm’ may intuitively sound like reference to agriculture. In practice, it appears most often in the context ‘disinformation farm’ or ‘troll farm’, referring to an “organised group that has come together for the specific purpose of affecting public opinion through the generation of misinformation and/or disinformation on the Internet” (McCombie et al., 2020, p. 97). This is not an immediately obvious keyword and if not investigated further, it could mislead the analyst. In other words, uncritical use of a system such as USAS (Rayson et al., 2004) could risk such items being tagged as F4 Farming & Horticulture, thus failing to capture their metaphorical meaning. While manual grouping of hundreds of keywords is time consuming, it produces results that are firmly grounded in context and corpora-specific use. Similarly, wordlists were not lemmatised (i.e. multiple tokens such as ‘walk’, ‘walks’, ‘walking’ are not represented by a single lemma *walk*) because finer-grained meaning distinction can sometimes be lost to lemmatised words. For example, conflating ‘American’ and ‘Americans’ into one form loses part of the meaning-making process and the constructions of certain discourses. Consequently, these were kept distinct for keyword groupings.

Keyword groups were formed using an inductive, bottom-up approach whereby categories were formed as the keywords were coded. There were two rounds of coding: the first involved forming the categories, while the second involved refining the categories. Any code with less than five keywords belonging to it was subsumed into the Infrequent category⁷. This included categories such as ‘Politics’ and ‘Dates’ which were coded originally but were later scrapped due to infrequency.

Grouping keywords in themes and semantic groups can help to “generalise and distil meanings” but needs to be done carefully because it is inherently subjective (Rayson & Potts, 2021, p. 124). As Mahlberg and McIntyre (2011, p. 207) note, keyword grouping can be text-specific or theory driven. For example, Fischer-Starcke (2009)’s analysis of *Pride and Prejudice* includes groupings such as ‘family and family relationships’ and ‘love, courtship and marriage’, themes which are widely recognised as being central to Austen’s novel. On the other hand, McEnery (2009) who adopts a theory driven approach with these groupings informed by formal concepts from Moral Panic Theory such as ‘consequence’ and ‘corrective action’. I would position my keyword groupings as a mixture of these two in that they are informed by the text type (social media data) and theory (disinformation studies) but also take a more inductive approach. This is because I did not go into this analysis with any pre-formed groupings or categories.

The final codebook used is shown in *Figure 21* (see [Section 6.3.](#)), and a full codebook with descriptions and examples for each code can be found in [Appendix B](#). The keyword codes are mutually exclusive meaning one keyword can only belong to one code, but this does not mean that the keywords are not interrelated or that they may be constructing multiple discourses. For example @MYPILLOWUSA is coded as ‘User’ but simultaneously could be coded as ‘Actor – Entity’ as it is a business. While some words can be used as metonyms, for example ‘Vladimir’

⁷ An exception to this was the COVID sub-code in the Medical code in the Misinformation Corpus keywords. The token (‘COVID19’) clearly belonged to a medical discourse, and so was included as a code despite representing just one token because it captures a very specific health experience that is distinctly important because of its global impact and the time period it covered.

and ‘Kremlin’ could be interchangeable in some circumstances, these have been coded to match their literal use (in this case, Actor – Individual and Actor – Government). For the sake of analysis, a single code has been privileged in each case based on readings of concordances lines. A full list of keywords and their corresponding codes can be found for the Disinformation Corpus keywords can be found in [Appendix E](#) and the Misinformation Corpus keywords can be found in [Appendix F](#).

One potential issue with this method is that it is essentially binary – a keyword, by virtue, can only appear as key in one corpus (in this case, either disinformation or misinformation) when it is compared to the other corpus. However, this is not to say the word does not play an important role in the construction of discourse in both corpora. It is just that is used more often in one than the other. For example, the disinformation keyword ‘Russian’ appears 29.62 times per ten thousand words in the Disinformation Corpus, and 4.66 times per ten thousand words in the Misinformation Corpus. This means it is not a case of presence vs absence, but instead that the use is considerably greater in one corpus than another. For context, comparing this to a general CMC corpus of English, the 1.9 billion word Corpus of Global Web-Based English (GloWbE) of Internet texts (Davies & Fuchs, 2015), shows a frequency across contexts (i.e. different countries) of 0.288 per 10,000 words, a marked difference to the two corpora here. This also shows the benefit of grouping keywords – individually these differences might not mean much, but together as patterns of discourse usage they contribute to meanings and framing.

An additional corpus tool, collocation, was also used in a complementary capacity at certain points in the analysis. While collocation was not used as a primary investigative method in the way that keywords were, at times it proved beneficial to deploy collocational analysis to investigate words further. Collocations are “units of formulaic language” (Gablasova et al., 2017, p.155) that are useful for identifying the “associations and connotations” certain words have by exploring their use and co-occurrence with other words in context (Baker, 2023a, p.136). Examining collocates in discourse has proved useful in previous studies looking at a range of topics, from examining representations of the Windrush Generation in UK (Taylor, 2020), to analysing language ideology (Vessey, 2017) and can help us “uncover meaning connections in text and discourse that may otherwise pass unnoticed” (Brezina et al., 2015) (p.141). The specific parameters used in the collocation analysis are reported in each case.

5.7. Reflections on Data and Methods

The methods used across RQs 1-3 are intended to make use of a range of datasets and means of analysis. RQ1 uses largely pre-existing corpora, it is focused on diachronic analysis of word meanings, and it mostly concerns theory, i.e. definitions of disinformation. By contrast, RQs 2 and 3 solely use a custom-built dataset to look at contemporary understandings of disinformation in the real world and to test the theory and definitions proposed in RQ1. The analysis uses a combination of quantitative statistical cutoffs alongside qualitative analysis to add nuance to our understanding of what disinformation and misinformation are.

These methods and approaches were designed to complement each other. In using a range of data sources and methods of analysis, the following chapters address *understandings of disinformation* from distinct but complementary angles. In so doing, this gives us a fuller picture of what disinformation is not just historically or within scientific literature or formal publications, but at a societal level for the average person today.

6. Descriptive Analysis of RQ2 and RQ3 Results

[...] the public news became the vehicles of falsehood, misinformation, and deception.

James Murray, 'An Impartial History of the War in America'. (Murray, 1782)

The first analysis chapter in this thesis, [Chapter 7](#), explores the linguistic and social histories of the terms 'disinformation', 'misinformation', and 'fake news'. This addresses RQ1: *What is disinformation?* This section culminates in grounded definitions of these concepts and provides a historical account of the terms by exploring their usage over the past 500 years.

To complement these historical accounts, RQs 2 and 3 focus on present day discussions of the terms 'disinformation' and 'misinformation' to answer the following:

RQ2: What are the discourses of the term 'disinformation' on Twitter? (Chapter 8)

RQ3: What are the discourses of the term 'misinformation' on Twitter? (Chapter 9)

To answer these RQs, as laid out in detail in the [Data and Methods](#) section, this chapter will explore large social media datasets of discussion of the two terms. First, simple frequency-based wordlist results will be presented and discussed. Then, keywords will be presented, followed by in-depth qualitative analysis of keyword groupings to identify and explore the dominating discourses in the online discussions. These frequency-based methods allow us to identify not only the words that are most common within a given corpus, but also the words that are statistically unusually frequent in that corpus when compared to other corpora, and that thus contribute to the formations of specific discourses.

The purpose of these analyses is to gain a better understanding around how the terms 'disinformation' and 'misinformation' are represented online, but also how they are used differently. The purpose in doing so is to understand how each term is represented through linguistic means (i.e. discourse) and to assess whether these discourses are homogenous or if there are competing sub-discourses for each term. The aim of this is to inform our understandings of disinformation and misinformation and see if public understandings of the terms are congruent with, or at odds with, dictionary definitions of each terms from academics, governments, charities, and others. Understanding this has ramifications for not just how we talk about each issue, but for how we tackle it too, because if our approaches are not consonant with public understandings of these topics, then there may be a mismatch leading to unsuccessful interventions. In this sense, this chapter is pseudo-lexicographic in that it is trying to understand and define each of these concepts using real-world data.

6.1. Wordlists

The corpora for RQ2 contains mention of the word 'disinformation' but not 'misinformation', while the corpora for RQ3 contains mention of 'misinformation' but not 'disinformation'. A simple way to assess simply what is going on in these corpora is to tally the most frequent words in the corpus by most frequent to least frequent. Word lists are often the first port of call for analysis – they allow researchers to familiarise themselves with a corpus (Bowker, 2002, p. 109) and are “useful as they suggest interesting areas for investigation” (Anthony, 2005, p. 732). It is according to these cursory purposes that I review the wordlists, here.

Table 112 and Table 113 in [Appendix C](#) show the top 200 words ranked by frequency for the Disinformation and Misinformation Corpus. In each list, the most frequent words are closed-class function words, as would be expected (Khamis & Abdullah, 2018). Given the parameters of each corpus (that they centre around a single search term), it is unsurprising that ‘disinformation’ and ‘misinformation’ rank highly in both corpora. To reiterate, wordlists were not lemmatised so that finer-grained distinctions (e.g. between ‘American’ and ‘Americans’) were retained.

Among the top 200 tokens for each corpus, 14 are a direct match for both word form and rank. For example, ‘the’ is the most frequent word in both lists. Of these 14 tokens, 8 appear in the top ten. This shows a level of similarity (and generality) in the most common function words. Of the 200 items in the disinformation wordlist (hereafter DWL), 81 (40.5%) also appear in the misinformation wordlist (hereafter MWL), while 119 (59.5%) do not. Conversely, of the 200 items in the MWL, 111 (55.5%) appear in the DWL, while 89 (62.4%) do not. This shows considerable overlap between the two wordlists, suggesting some degree of similarity. This is relatively unsurprising given that these words tend to be viewed as synonyms, they take the same grammatical form, and are likely to be discussed in relation to comparable topics

Given the high frequency of function words, determiners, prepositions and conjunctions were removed from the list to give a clearer view of the tokens with lexical meaning (Schmid, 2004) and thereby, the fine grained semantic meaning associated with these concepts. Similar approaches have been taken elsewhere, such as Heidari et al. (2020) who omit General Service List (GSL) words from their word list as their goal was to “create an academic wordlist” (p. 5), while Evert (2008) notes that while it can be interesting to analyse function words, it is ‘sensible’ to remove function words in order to foreground more ‘interesting’ words (p. 9). Pronouns, possessive adjectives, and ‘wh- words’ (i.e. ‘what’, ‘how’, etc.) were preserved as these contribute more to semantic meaning, specifically because they can relate to inquiry in forms such as ‘what is disinformation?’ which are directly relevant to the RQs here (Anderson & Open Textbook Library, 2018). This is also a functional decision to help whittle down the potential tokens that are available for analysis. This is not to say the discounted tokens are meaningless, but that they sit lower on the scale of information they convey; they are not “connected with any particular topic” (Baroni & Kilgariff, 2006, p. 90) and they “carry primarily syntactic, rather than semantic, information” (Keith et al., 2015). A future study could include all these tokens, but given this thesis is a pilot study to explore discourses of the terms ‘disinformation’ and ‘misinformation’, the decision was made to discount them for economy.

This left 144 tokens for DWL and 145 tokens for MWL. The content wordlists are shown in [Appendix C](#). 121 words appeared in both lists, while there were 23 (16% of the total 144) unique words in the content DWL and 24 (16.6% of the total 145) unique words in the content MWL. The unique content words for each corpus are shown in Table 18. From this, certain themes characterising each word list become visible – these have been highlighted in blue for the DWL and orange for the MWL.

Table 18 Exclusive Content Words for DWL and MWL

Rank	Word	Freq.	Texts	Word	Freq.	Texts
1	DISINFORMATION	180623	120	MISINFORMATION	242536	120
2	RUSSIAN	16886	108	BECAUSE	9511	120
3	RUSSIA	8415	110	OVER	9354	120
4	WHEN	8387	119	HEALTH	7639	120

5	STATE	5730	108	AFTER	6597	120
6	CAMPAIGNS	4781	103	ARTICLE	5294	120
7	WING	4719	95	HELP	4963	119
8	PART	4465	105	DANGEROUS	4881	114
9	BIDEN	4170	42	CHECK	4687	118
10	DEMOCRACY	4120	90	COVID19	4592	23
11	AMERICAN	4096	102	PANDEMIC	4471	38
12	CHINA	4023	88	VACCINES	4447	96
13	TODAY	3779	111	YOUTUBE	4364	100
14	USED	3740	98	BEFORE	4356	119
15	AMERICANS	3706	97	AROUND	4311	118
16	EU	3566	101	SHE	4271	112
17	YEARS	3490	98	EVERY	4217	118
18	NEVER	3369	109	DAY	4208	118
19	OWN	3301	100	FIGHT	4101	116
20	AMERICA	3300	108	REPORTING	4049	120
21	FED	3283	91	USE	4046	118
22	WHITE	3248	93	CLIMATE	4025	118
23	REALDATILL	3235	9	FIRST	4003	118
24				OFF	3964	117

The words highlighted in the DWL name actors or countries. These can be specific individuals ([U.S. President Joe] ‘Biden’, [his son Hunter] ‘Biden’), countries or regions (‘Russia’, ‘EU’), country-based adjectives or demonyms (‘Russian’, ‘American’) or reference to government (‘state’, ‘fed[eral]’). *Table 19* contains examples of each term to show how they are used in context.

Table 19 Examples of DWL Exclusive Content Word

Example	File	Left Context	Node	Right Context
19.1	disinfo_2012_01	[NA]	Fed	disinformation hides greater inflation
19.2	disinfo_2013_05	Disinformation Life In	America	Is Poisonous For Your Body
19.3	disinfo_2014_03	#Ukraine Min. of Defence:	Russia	spreads disinformation: all troops loyal to Ukraine #Ukraine
19.4	disinfo_2020_04	At what point is this	state	run disinformation network, feeding upon & misleading societies sheep, considered harmful & negligent?
19.5	disinfo_2015_06	Pipeline 'disinformation' causing	EU	division #Slovakia #news
19.6	disinfo_2018_12	years trying to initiate disinformation campaigns upon various parts of	American	society. I am so skittish about non named sources in news stories

19.7	disinfo_2020_10	Ted, you know that the FBI warned that the Hunter	Biden	story was disinformation. Why are you still pushing this DEZA?
19.8	disinfo_2021_01	We must protect	Americans	from disinformation going forward and agree on the same set of facts
19.9	disinfo_2021_03	Considering his employer's history of spreading	Russian	disinformation and telling employees to "like Russia"
19.10	disinfo_2021_10	A shameless #disinformation campaign:	China	is pushing a new Covid origin theory: Maine lobsters

In the case of ‘fed’, only 155 (4.7%) of occurrences are tagged as a noun in the corpus, such as example 19.1. The vast majority of occurrences are verbs (i.e. the past tense of ‘feed’) and so would not be considered related to naming individuals or countries. This is a reminder that wordlists are good for macro-level insights but that each word needs to be checked carefully in context to assess its usage. When we look at concordance lines of ‘fed’, we actually find an interesting metaphorical use of the word and what those named actors are doing, as people are ‘fed’ disinformation.

Table 20 Use of 'fed' in the Disinformation Corpus

Example	File	Left Context	Node	Right Context
20.1	disinfo_2012_03	We're waking up from the matrix of force	fed	distraction and disinformation.
20.2	disinfo_2014_10	How 'playboy' Spanish spy was duped by MI5: MI5	fed	disinformation" to Migel Piernav
20.3	disinfo_2020_02	It's hard to know what to believe, with all of the disinformation we're constantly	fed	coupled with the glorification of celebrities.
20.4	disinfo_2020_10	We will never recover as a country, with deliberate, malicious disinformation being	fed	daily to half the country.
20.5	disinfo_2021_08	MaSkS dOn'T wOrK. You're being	fed	disinformation and lies in order to take advantage of your emotion

There is a clear focus here on how disinformation operations are implemented, and specifically how people are targeted with and given disinformation. Interestingly, there are occurrences of both being the recipient of disinformation (examples 20.1 and 20.3-20.5) and being the provider of disinformation (example 20.2). In example 20.5, the alternating case of the first three words mocks an item of perceived disinformation (cf. ‘Spongemoock’ (Wile, 2021)), using it as an example of the disinformation people are being ‘fed’. When we look at the concordance lines in this way, a key theme across the exclusive content words in DWL seems to be agency and in a broader sense, blame. Individuals, countries and entities are being named and held responsible as the actors supplying (or ‘feeding’) people with disinformation.

Five words in the E-MWL contribute to a discourse of health and science. One word refers to health generally ('health'), two refer specifically to the COVID-19 pandemic ('COVID19', 'pandemic'), one to vaccines ('vaccines') and one to the climate ('climate').

Table 21 E-MWL words relating to health and science

Example	File	Left Context	Node	Right Context
21.1	misinfo_rq2_2014_11	Oh brother! Here we go again? Why does misinformation about	vaccines	spread?
21.2	misinfo_rq2_2018_01	Instead of proposing solutions to protect the environment & fight	climate	change, the Conservative Party is again spreading misinformation.
21.3	misinfo_rq2_2020_02	A president who spreads misinformation meets a	pandemic.	What could possibly go wrong?
21.4	misinfo_rq2_2020_07	Sad to see reality TV stars continuing to spread	health	misinformation.
21.5	misinfo_rq2_2021_08	Lombardi appears to be putting on a sideshow rife with #	COVID19	misinformation where he's incorporating the #QAnonCult slogan "Save The Children"

In these examples there is a clear topic-focused theme: medicine and science. Discussions of health related topics centre around different types of misinformation, such as 'misinformation about vaccines' (21.1) and 'health misinformation' (21.4). Examples 21.2 and 21.3 refer to the context in which misinformation is spreading, referring to pressing issues such as a 'pandemic' and 'climate change'.

6.2. Keywords

This initial analysis of wordlists has suggested possible lenses through which we can continue the investigation into these corpora, including the patterns around, e.g. actors/agents and health/medicine. One approach to test and triangulate these initial insights, however, is to turn to the more advanced corpus method of keyword analysis.

Looking at the exclusive word lists can help identify what items are characteristic of a certain corpus. While the wordlist analysis has already begun to highlight distinct patterns in each corpus (actors vs health), there are more systematic ways of comparing and contrasting corpora. Following the method laid out in [Data and Methods](#) the rest of the chapter will explore keywords in the disinformation and misinformation corpora. Analysis will be presented in turn for each corpus, i.e. first the Disinformation Corpus keywords will be presented and analysed, then the Misinformation Corpus keywords will be presented and analysed.

6.3. Disinformation and Misinformation Keywords

For the Disinformation Corpus, the Misinformation Corpus was used as a reference corpus (and vice versa). Implementing a minimum LogRatio score of 1.00 and a minimum loglikelihood score of 15.13 ($p < 0.0001$), 1,452 disinformation keywords and 857 misinformation keywords were returned. This large number of keywords necessitated a further cut-off, so a minimum reference corpus frequency of 10 was implemented. This eliminates words with a very low

frequency in the reference corpus, which can lead to high LogRatio values, and give the illusion of a large difference that is contributing to the formation of (sub)discourses in the target corpus. Applying this additional frequency threshold resulted in 699 disinformation and 493 misinformation keywords. The Disinformation Corpus keywords can be found in [Appendix E](#) and the Misinformation Corpus keywords can be found in [Appendix F](#). The codebook that was developed is shown in *Figure 21*:

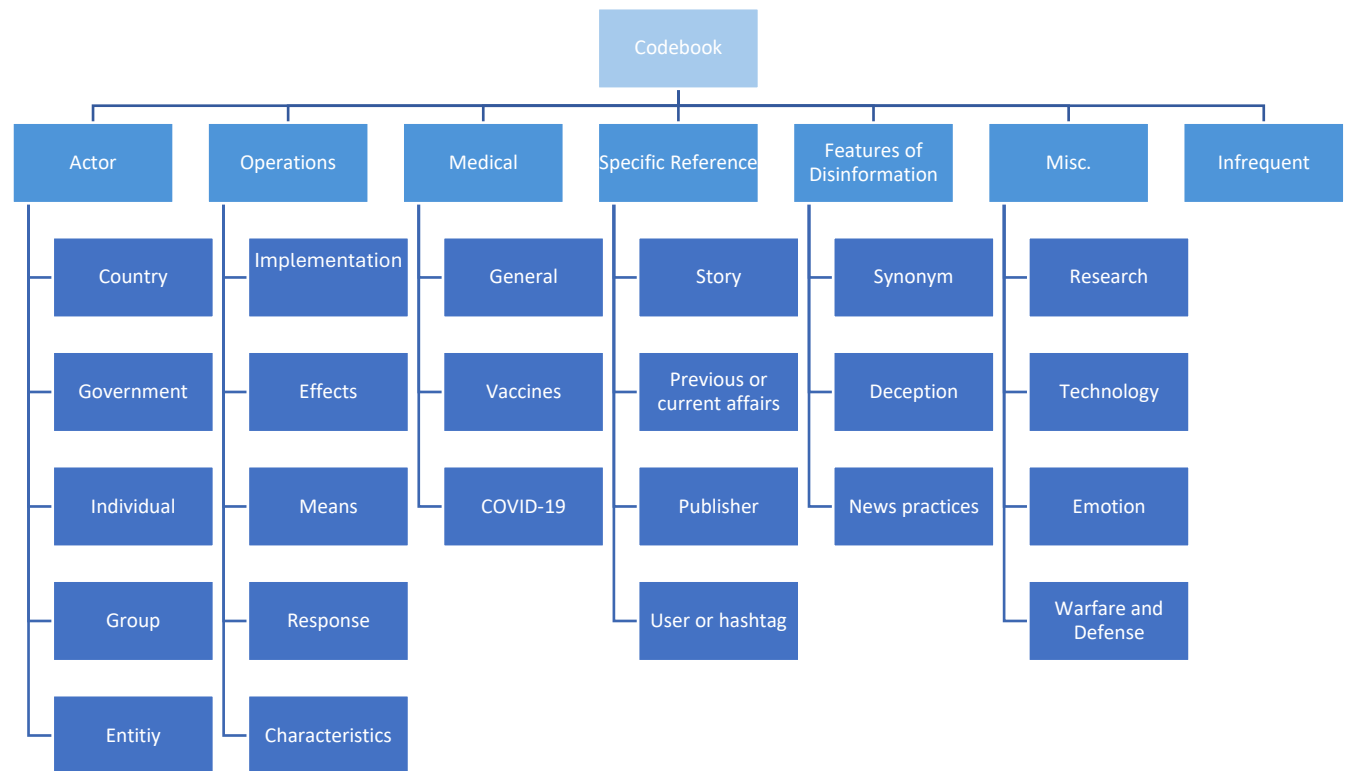


Figure 21 Keyword codebook

6.4. Keywords: Results

Table 22 Disinformation Keyword Themes Results

Code	Sub-code	Number of keywords in sub-code.	% of all keywords	Group Total
Actor	Country	95	13.6	251 (35.91%)
	Entity	8	1.1	
	Government	27	3.9	
	Group	34	4.9	
	Individual	87	12.5	
Operations	Implementation	74	10.6	145 (20.74%)
	Means	0	0.00	
	Effects	42	6	
	Response	17	2.4	
	Characteristics	12	1.7	

Medical	General	1	0.1	1 (0.14%)
	Vaccines	0	0.00	
	COVID-19	0	0.00	
Specific Reference	Story	34	4.9	158 (22.60%)
	Previous or current affairs	27	3.9	
	Publisher	24	3.4	
	User or hashtag	73	10.4	
Features of disinformation	Synonym	9	1.3	42 (6.01%)
	News practices	33	4.7	
Miscellaneous	Research	0	0.00	29 (4.15%)
	Technology	11	1.6	
	Emotion and affect	4	0.6	
	Warfare and defense	14	2	
Infrequent	Infrequent	73	10.4	73 (10.44%)
Total:		699	100%	699

Table 23 Misinformation Keyword Themes Results

Code	Sub-code	Number of keywords in sub-code.	% of all keywords	Group Total
Actor	Country	28	5.7	74 (15%)
	Entity	13	2.6	
	Government	8	1.6	
	Group	0	0	
	Individual	25	5.1	
Operations	Implementation	12	2.4	144 (29.2%)
	Means	20	4.1	
	Effects	47	9.5	
	Response	65	13.2	
	Characteristics	0	0	
Medical	General	78	15.8	95 (19.3%)
	Vaccines	16	3.3	
	COVID-19	1	0.2	
Specific Reference	Story	17	3.5	81 (16.4%)
	Previous or current affairs	14	2.8	
	Publisher	11	2.2	
	User or hashtag	39	7.9	
Features of disinformation	Synonym	25	5.1	25 (5.1%)
	News practices	0	0	
Miscellaneous	Research	12	2.4	24 (4.9%)
	Technology	5	1	

	Emotion and affect	7	1.4	
	Warfare and defense	0	0	
Infrequent	Infrequent	50	10.1	50 (10.1%)
	Total:	493	100%	493

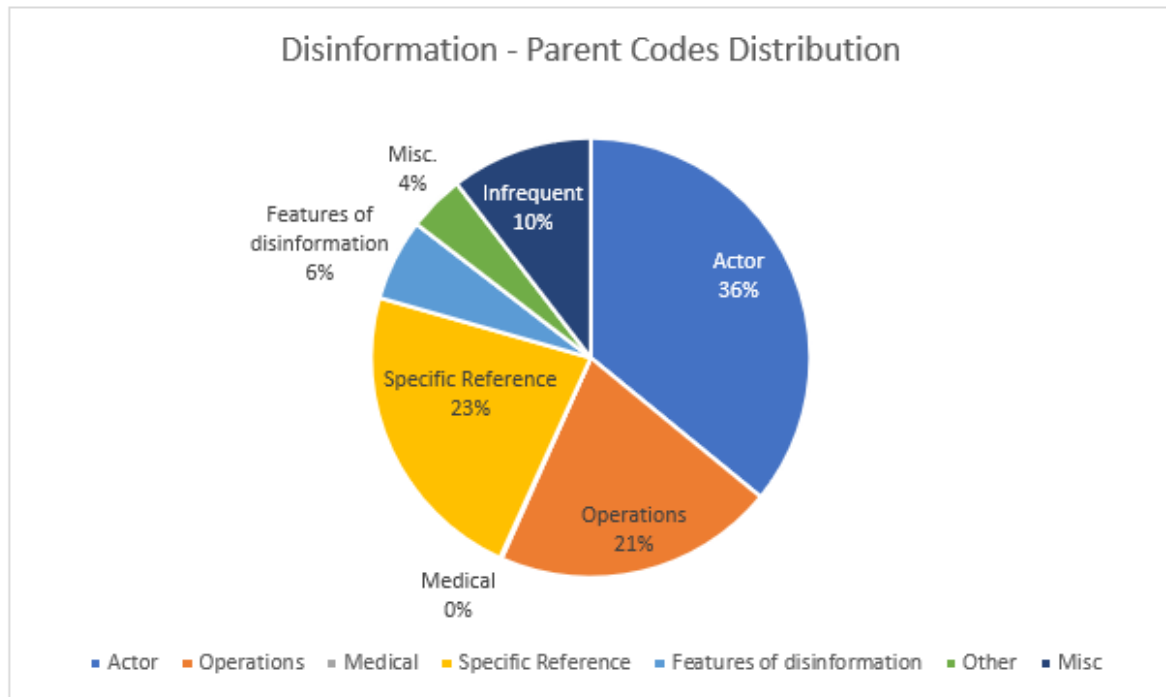


Figure 22 Disinformation - Parent Codes Distribution

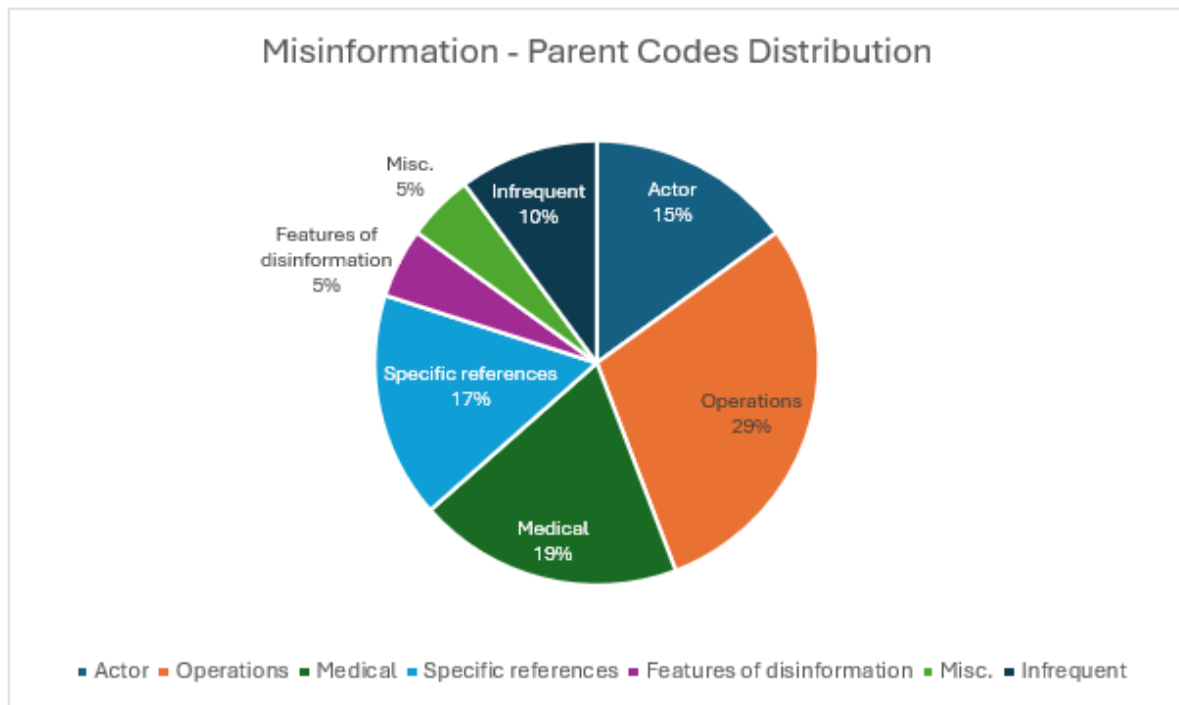


Figure 23 Misinformation - Parent Codes Distribution

6.4.1. Disinformation Descriptive Results

The most represented parent code in the Disinformation Corpus is the *Actor* code, which refers to a “participant in an action or process” (Oxford Learner’s Dictionaries, 2023) and relates to the spread of disinformation and misinformation. Interestingly, this is one of the themes that was identified in the earlier cursory wordlist analysis where I remarked that there seemed to be a focus on naming actors, individuals and entities. That this is borne out in the more statistically rigorous keyword analysis suggests it is a focal theme in the data. Keywords in this code can be both the agent (i.e. the perpetrator) and the patient (i.e. the recipient) of the false content. 251 keywords (36%) are coded as *Actor*, with the following breakdown:

Table 24 ‘Actor’ code frequencies in the Disinformation Corpus

Code	Keywords	% of all codes	% of <i>Actor</i> code
Country	95	14%	38%
Entity	8	1%	3%
Government	27	4%	11%
Group	34	5%	14%
Individual	87	12%	35%

The next most populated code *Specific Reference* (23%, n=158) captures keywords that refer to a particular news item, publisher, Twitter user, or hashtag. Unsurprisingly, given the overall emphasis in the corpus on naming actors, the largest sub-code is *User or hashtag*. The distributions can be seen below in Table 25.

Table 25 'Specific Reference' code frequencies in the Disinformation Corpus

Code	Keywords	% of all codes	% of <i>Specific Reference</i> code
Story	34	4.86	22
Previous or current affairs	27	3.86	17
Publisher	24	3.43	15
Twitter user (@) or hashtag	73	10.44	46

The *Operations* code, can be summarised as “activity; a manner of working, the way in which a thing works” in relation to disinformation (OED, 2023f) and accounts for 21% (145) of all keywords. Within this code however, there is a strong bias towards the *Implementation* sub-code which refers to the spread of disinformation, and accounts for more than half of all the subcodes. Table 26 below shows these patterns.

Table 26 'Operations' code frequencies in the Disinformation Corpus

Code	Keywords	% of all codes	% of <i>Operations</i> code
Implementation	74	11	51%
Means	0	0.00	0%
Effects	42	6	29%
Response	17	2	12%
Characteristics	12	12	8%

The code Features of disinformation refers to keywords that either describe a related concept to disinformation such as ‘propaganda’ or ‘rumours’, or common news reporting words such as ‘expose’ or ‘reveal’. This code accounts for 6% (42) of all keywords for this corpus; the distribution of keywords according to sub-codes is shown in Table 27.

Table 27 'Features of disinformation' code frequencies in the Disinformation Corpus

Code	Keywords	% of all codes	% of <i>Features of disinformation</i> code
Synonym	9	1.29	79%
News practices	33	4.72	21%

Finally, the *Infrequent* codes account for other low-frequency sub-codes that were above the threshold of having more than 5 items but were not homogenous enough that they could be grouped together. For example, words denoting synonyms for disinformation such as ‘mediabias’ and ‘inauthentic’ are not closely related enough to words relating to news practices/journalism such as ‘investigating’ or ‘snow’ (annual stories about freak weather) to be grouped together in the way that, for example, the sub-codes Implementation and Means could be grouped under the parent category of Operations. Consequently, these unrelated sub-codes were put into a separate category (Infrequent). These codes are viewed best in comparison between the two corpora. For example, one code that is over-represented in the disinformation keywords (see [section 8.1.](#) for a comparison of keywords groupings across disinformation and misinformation) is *Warfare and defense*. While no keywords in the Misinformation Corpus were allocated this sub-code, 14 (2%) keywords were in the Disinformation Corpus. Conversely, keywords denoting *Research* are absent in the Disinformation Corpus, but present in the Misinformation Corpus with 12 keywords.

6.4.2. Misinformation Descriptive Results

The most populated code for the Misinformation Corpus is the *Operations* code (29%, n=144). Similar to the Disinformation Corpus, there is a skew within the subcodes. Almost half of keywords in this code (45%, n=65) pertain to the *Response* subcode, which contains words that refer to countermeasures put in place to reduce the spread of false content. Compared to the Disinformation Corpus, the *Means* code, which describes specific means by which false content is spread, is overrepresented in the corpus.

Table 28 'Means' code frequencies in the Misinformation Corpus

Code	Keywords	% of all codes	% of <i>Operations</i> code
Implementation	12	2%	8%
Means	20	4%	14%
Effects	47	10%	33%
Response	65	13%	45%
Characteristics	0	0%	0%

The second-most frequent code is *Medical*, referring to either general medical terms, vaccination or COVID-19. This category accounts for 19% (95) of all keywords, compared to just one keyword in the Disinformation Corpus. This suggest that's the Misinformation Corpus is much more health focused than its disinformation counterpart, a major finding for how we understand either term.

Table 29 'Health' code frequencies in the Misinformation Corpus

Code	Keywords	% of all codes	% of <i>Medical</i> code
General	78	16%	82%
Vaccines	16	3%	17%
COVID-19	1	0%	1%

The category *Specific references* accounts for 16% (81) of keywords, with similar distributions to the Disinformation Corpus. Reassuringly, in both corpora, references to a specific story shared into the corpus (code: *Story*) account for less than 5% of keywords, suggesting a low number of duplicates following the duplicate removal process laid out in [Section 5.3.1.](#) Keywords belonging to the *Actor* code account for the fourth-largest category, comprising 15% (74) of keywords. The *Actor* code is underrepresented compared to the disinformation results, and only the *Entity* code (reference to a non-sentient entity such as a business, legislative act, etc.) appears as a slightly higher proportion.

Table 30 'Actor' code frequencies in the Misinformation Corpus

Code	Keywords	% of all codes	% of <i>Actor</i> code
Country	28	6%	38%
Entity	13	3%	18%
Government	8	2%	11%
Group	0	0%	0%
Individual	25	5%	34%

While the *News practices* subcode is not present in the Misinformation Corpus, the *Synonym* code appears much more frequently than in the Disinformation Corpus (5% vs 1%). Similarly, mentions of *Research*, while absent in the Disinformation Corpus, account for 2% of all codes in the Misinformation Corpus. This could be related to overall emphasis on health and medicine in the corpus. In the Misinformation Corpus, there are no keywords belonging to the *Warfare and defense* category.

6.5. Section Conclusion

The results in *Table 22* and *Table 23* above highlight a range of differences between discussions of disinformation and misinformation. These are summarised below, and will provide the basis for the qualitative analysis that will explore these differences in greater detail.

- Discussions of disinformation focus on the spread of disinformation online and the actors responsible for this.
- Discussions of misinformation focus on discussions of medical issues, and the means by which misinformation spreads, the effects this has, and countermeasures to reduce the spread of false content.

The following analysis will incorporate the corpus procedures laid out in [Chapter 5](#) (concordances; keywords; collocates; POS tagging) to explore how the codes summarised in *Table 31* are used. In doing so, the aim is to understand *why* these differences are present and to individual strands of discourse that are contributing to overall discourses of disinformation and misinformation discussion.

Table 31 Items for Qualitative Analysis

Disinformation	Misinformation
Actor – Country	Medical
Operations – Implementation	Means
Warfare and defense	Effects
	Response

7. A History of Disinformation

What is the reason there is so much ‘false news’ spread abroad, and that many delight to make others believe strange things?

George Pellisson, ‘A Miscellany of Divers Problems’.
(Pellisson, 1662)

Chapters 1, 2 and 3 have so far introduced disinformation as an issue, then explored the interface between CMC, deception and disinformation in the literature. These chapters situate disinformation into a wider research context, but it is necessary to further break down what is meant by the concept of disinformation beyond just surveying the current literature. To discuss disinformation it is critical to explore what does, and what does not, constitute disinformation. This chapter therefore builds on the discussion in Chapter 6 in addressing RQ1: what is disinformation?

The following chapter investigates various terms in the repertoire of online deception (disinformation; misinformation; fake news) and compares disinformation with similar, but distinct, concepts such as satire, parody, bias and misreported news. The chapter then presents a diachronic historical corpus study to understand how usage of terms relating to disinformation has developed over time. Then, to understand contemporary usage of the term ‘disinformation’, [section 7.4.](#) will present results from a range of definitions taken from research literature, journalism and the press, dictionaries, and various governmental organisations. Finally, based on these discussions, working definitions of the terms ‘disinformation’ and ‘misinformation’ will be formulated to be used throughout this thesis.

A brief etymology citing select demonstrative historical examples for the terms ‘disinformation’, ‘misinformation’ and ‘fake news’ is given at the start of this chapter (sections [7.1.1.](#), [7.1.2.](#) and [7.1.3.](#)) to offer context for subsequent discussions, then a full-in depth linguistic historical analysis of various terms for disinformation in multiple historical corpora and how this developed into ‘fake news’ is given in [section 7.3.](#) The terms discussed in this historical analysis were entirely derived from the data, and were not known prior to analysis, rather they were derived from the data.

Finally, based on this data-driven corpus-based analysis and theoretical untangling of key concepts, a response to RQ1 “what is disinformation?” is presented. This response not only provides clarity for the concepts within this thesis but seeks to serve as a standardised definition for other disinformation research.

7.1. Understanding Disinformation

This section examines salient terms relating to false information online: disinformation; misinformation; satire; parody; bias; misreported news. The purpose of doing this is to first clarify the terms that will be used throughout this thesis, and secondly to dissect fundamental concepts such as the intention to deceive. The section will culminate with a disinforming cline – a figure which, based on these discussions, demonstrates the gradations of low-high intentionality.

[Chapter 3](#) conceptualised what disinformation is and is not, but here it is important to emphasise one thing: not all disinformation is *solely* disinformation. There is invariably a mixture of truth and deception in disinformation. Russian journalist Vladimir Yakovlev refers to

this as the '40/60 principle' (Yakovlev, 2015, 2022), whereby news contains 60% truth with 40% disinformation. This method works by establishing the trust of the reader to then later betray it, as well as blurring the lines between legitimate news and disinformation to confuse readers. While this 60:40 ratio is not absolute, and varies depending on the article/news producer, it demonstrates how disinformation is not always clear cut. Even if we can define what disinformation is, it is not a standalone phenomenon and it exists in tandem with legitimate news and other practices of news reporting and news distortion. This chapter will now explore the history of disinformation and its development over the centuries alongside these complementary concepts.

7.1.1. A Brief Etymology of 'Disinformation'

The first term discussed here is 'disinformation': the intentional sharing of false content.

From a morphological and semantic perspective, when broken down into its component parts, 'disinformation' is made up of the prefix 'dis-' and the root 'information'. The privative prefix 'dis-' denotes "removal, aversion, negation, reversal of action" ("dis-, prefix," 2020) and is used to modify 'information' to show "negative information", or false information. Where 'information' is "knowledge communicated concerning some particular fact" ("information, n.," 2020), 'disinformation' is information that is communicated not concerning facts.

While 'disinformation' appears to be a loan word from outside of English, the exact origins of its borrowing are uncertain. One theory holds that 'disinformation' is a cognate for the Russian 'dezinformatsiya' (дезинформация) (Marwick et al., 2021) and entered into British and American English use in the 1950s ("disinformation, n.," 2020). The basis for these claims comes from the Russian, and former Soviet Union's, [active measures](#). These are offensive political warfare campaigns that can be traced back as far as the 1920s ("CIA-RDP91-00901R000600200001-2," 2005).

Krivitsky (1939), a former Soviet intelligence officer and defector to Western Europe, writes that in World War One "the German General Staff even had a Bureau known as the "Disinformation Service."" (1939, p. 234), a department dedicated specifically to supplying foreign powers with false intelligence and information. Whaley (1969) reports that the Soviet secret-police, or Cheka (The All-Russian Extraordinary Commission [VCHK]; operational 1917-1922), used both the technique of disinformation and the term 'disinformation' in the 1920s. This shows the term may have been in regular usage in 'inner circles' before it was a term used by the public.

Manning and Romerstein (2004) claim that, as part of Soviet active measures, the Russian GPU (the precursor to the KGB and modern FSB) created a "special disinformation office" in 1932 (p. 83). In KGB era Russia (post-1954), the federal Department A was the "the nerve centre for [Russia's] global network of disinformation" (Cull et al., 2017, p.20) and was known informally as the "Department of Disinformation" (Barron, 1983, p. 443). Department A later evolved into the Active Measures Service, or "Service A" (Kramer, 2017, p.2). It seems plausible, then, that 'disinformation' is a Russian borrowing, given that 'disinformation' and 'dezinformatsiya' have the same linguistic derivation and based on the USSR/Russian Federation's complex history for disinformation and active measures.

The 1952 *Great Soviet Encyclopaedia* included 'disinformation' ['dezinformatsiya'], defining it as "dissemination (in the press, on the radio, etc.) of false reports intended to mislead public opinion". We should be wary, however, of how references to such concepts and operations are translated and, subsequently, the extent to which the use of 'disinformation' corresponds with

our own. Kux (1985:20) writes that “finding an appropriate English phrase to describe active measures is difficult”, and quotes former US Under Secretary of State for Political Affairs Lawrence Eagleburger as saying “no phrase in English conveys precisely the meaning of active measures.” (Eagleburger, 1983:6). Indeed, ‘psychological warfare’ is posited as the most similar term (ibid).

In British English, according to the OED the verb ‘disinform’ appears between the 1970s and 1980s, as a derivative back-formation – with uses such as “deceiving and disinforming” and “in their efforts to disinform” (“disinformation, n.,” 2020). A search of the Google Books British English corpus of 34-billion words of historical texts however shows the term dates further back to the late 1800s. Examples are presented in *Table 32*.

Table 32 Uses for ‘disinformation’ and ‘disinform’

Year	Source	Use
1891 [earliest use]	Check 2134 by Edward Sylvester Ellis – Page 191 and 192	“I is, sah; can I gibs ou any disinformation ?” [...] " You is correctly disinformed ; hab you been down dar ? " asked Roorback in turn
1919	The International Tailor... Volumes 7–9 - Page 9	[...] showing practical methods for overcoming this universal disinformation
1931	Philological Monographs - Issue 37 - Page 135	[...] there may be an element of propaganda, even disinformation , here, but there is no sign of any serious water shortage on the Roman side at this stage
1937	The Brewer's Digest - Volume 67 - Page 14	[...] government’s campaign of exaggeration and disinformation is paying off
1939	The Saturday Evening Post - Volume 211 - Page 74	[...] the evidence against Tukhachevsky and could even tell how some of it has been framed by his own disinformation service

We can see from these early uses that ‘disinformation’ has for a long time been used in tandem with terms such as ‘propaganda’ (1931) and ‘exaggeration’ (1937). It is useful here to consider a few examples of disinformation. With both disinformation and misinformation (discussed below) there is a phenomenon similar to the observer effect in quantum physics, “that observing a situation or phenomenon necessarily changes it” (Baclawski, 2018, p.83). In this analogy, the observation of disinformation or misinformation relies on one thing: knowledge of the truth. If an individual knows what they are saying is false it is disinformation; if they do not, it is misinformation. Knowledge, or poverty of knowledge, determines whether something can be labelled as disinformation or misinformation. This then introduces a fundamental issue: unless there is a truthful acknowledgement on the part of the sharer that they are deliberately disseminating false content (disinformation), we cannot know whether they are doing this.

Table 33 Example of fabricated headlines

Website	Headline of article
World Net Daily	Lawmakers Charge Hillary, Obama With Lying, Cover-Up
Ending The Fed	Pope Francis Shocks World, Endorses Donald Trump for President, Releases Statement

For instance – both headlines in *Table 33* present stories that appear to be false. *World Net Daily's* headline claims that, following a Senate inquiry, Barack Obama and Hillary Clinton were charged with “lying” and a “cover-up”. Based on a careful and extensive factcheck, there is no evidence that this actually happened. Similarly, in the latter headline, there is no evidence that the Pope released a statement endorsing Donald Trump’s then presidential candidacy. It is therefore reasonable to infer that both of these headlines are false. In both cases, these news outlets have fabricated news – these articles are not just biased or misconstruing real events but are entirely fabricating them. In doing so they are disinforming others. However, these articles may not have been the original sources of the story and the authors may have been unwitting misinformers, basing their reporting on others. This again highlights the inherent complexity of assigning intention.

7.1.2. A Brief Etymology of ‘Misinformation’

The term ‘misinformation’ describes the unintentional sharing of false information, and perhaps surprisingly, it has a much longer history than its more recent counterpart, ‘disinformation’.

Again, morphologically and semantically, it is comprised of the root ‘information’ with the prefix ‘mis-’. Similar to ‘misattribute’ or ‘misidentify’, *mis-* is used to denote “[the] sense ‘badly’, ‘wrongly’, ‘perversely’, ‘mistakenly’, ‘amiss’” (“*mis-*, prefix1,” 2020), more precisely to show a noun or verb as being wrong or improper (“*mis-*, prefix2,” 2020). Misinformation therefore refers to the inadvertent, or accidental, sharing of false information. Thus, while ‘disinformation’ is intentional, ‘misinformation’ is unintentional.

While records of ‘disinformation’ can be found dating back to 1891, the noun, ‘misinformation’ is used as early as the 16th and early 17th century. The verb, ‘misinform’, predates this nominal form, and can be traced back to the 14 and 15th century. Uses from this period however take forms such ‘*mis enforme*’ and ‘*mysinfourmyd*’ (“*misinform*, v.,” 2020). Uses are also not as clear cut as the current misinformation-disinformation dichotomy, and the term was previously used to cover both unintentional and intentional false information – as indicated in the examples in *Table 34*.

Table 34 Uses of ‘misinformation’ and ‘misinform’

Year	Source	Use
1547 [earliest use]	Journals of the House of Commons Volume 1 (1547)	[...] his Majesty oft, by Misinformation , misguided.
1584	J. Dee Jrnl. in <i>True & Faithful Relation Spirits</i> (1659)	You may also mark how the Devil at this time did mis-inform
1643	William Fenner <i>The souls looking-glasse [...]</i>	like some foolish clients who misinform their counsel, making their case better then indeed it is
1974	<i>Physics Bull</i>	Those attempting to misinform the World Scientific Community are fully aware of my real circumstances.

(OED, 2025; EEBO, 2025; Google Books English, 2025)

The examples above show the importance of defining both the verbal and nominal forms of misinformation (and disinformation). Their uses are often misunderstood and conflated, and it is therefore of consequence to ascertain what is meant by each.

7.1.3. A Brief Etymology of ‘Fake News’

The term ‘fake news’ is complex. A relatively new name for an old concept, the phrase saw a meteoric rise into the public consciousness primarily due to the 2016 United States Presidential Election. As Egelhofer et al. (2020) note, ‘fake news’ developed two distinct meanings:

- 1) to describe online disinformation
- 2) as a term to discredit legacy news media

(Egelhofer et al, 2020, pp. 1323-1324)

This second use covers ‘fake news’ used as an insult, which includes instances where “actual news [...] is claimed to be untrue” (“‘Fake news’ is 2017 American Dialect Society word of the year,” 2018). Despite emerging more recently, ‘fake news’ is the most frequent variant: in the 14-billion-word iWeb corpus (Davies & Kim, 2019), ‘fake news’ occurs at a rate of 1.91pmw, while *misinformation* occurs at 1.87 per million words (pmw), and ‘disinformation’ at 0.57pmw. There are also probably multiple variables at play here regarding use of ‘fake news’ over ‘misinformation’/‘disinformation’, including formality, its uptake by extremely well-known figures like Trump, and the fact that this corpus is built from modern web content. As such it does not show the wider historical use of ‘misinformation’/‘disinformation’.

7.1.4. Disinformation and News

One potential issue with both the terms ‘disinformation’ and ‘misinformation’ is that neither of them refer explicitly, nor exclusively, to news in the way that ‘fake news’ does. In this thesis, both terms will be used to refer to the dissemination of (imitation) news, intentional or otherwise, while terms such as ‘false content’ will be used for items such as online rumour and untrue Facebook posts.

The reason is thus: for something to be classified as disinforming news within this thesis, the content has to issue from an institutional source; that is, it needs to be – or seem to be (if the intention is to look like a legitimate news source) – produced or published by a news outlet or the press arm of a non-news organisation. It cannot issue solely from an individual⁸. For example, a social media post that makes erroneous claims, but that is authored by a single person, is not classified here as disinformation. This is, however, complicated by the discussions in Chapter 2 regarding media decentralisation and symbolic power, as even individuals can wield immense (social) media reach.

Subsequently, in this thesis, the following will apply:

<i>disinformation</i>	deliberately false content published as news, but intended to mislead or deceive
<i>misinformation</i>	unintentional false content published as news, but not intended to mislead or deceive
<i>false content</i>	erroneous claims by individuals or organisations from non-media outlets irrespective of veracity; not presented as news articles, e.g. memes, screenshots, etc.

⁸ There are exceptions for when an individual is, or acts on behalf of, an institution such as a president or religious leader, or a news figure such as a journalist.

This distinction is not always clear cut and inevitably there will be examples that potentially fall into both these categories, and these will be labelled at the time.

In *Figure 24* and *Figure 25* we see examples of false content and disinformation, respectively.

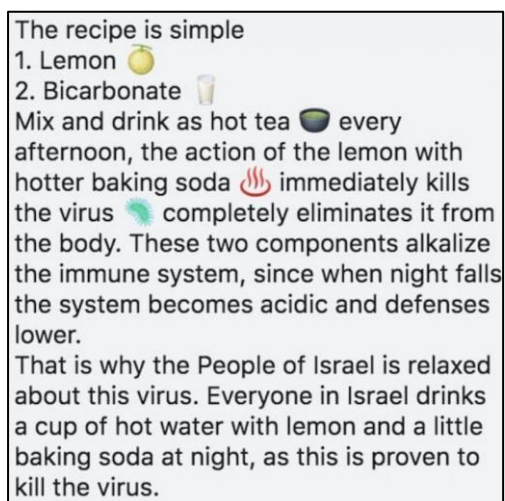


Figure 24 Apple iPhone Notes document screenshot



Figure 25 Disproven Natural News headline

Figure 24 shows an Apple iPhone Notes screenshot taken from a viral Facebook post claiming that a combination of lemon juice and bicarbonate of soda “kills the [COVID-19] virus”. This image was widely shared across Facebook. *Figure 25* shows a news article from Natural News, a website recognised by the Institute for Strategic Dialogue (ISD) as a website “promoting conspiracy theories and disinformation” (Institute for Strategic Dialogue, 2020). The article claims that a combination of baking soda (UK: bicarbonate of soda) and lemon juice can cure cancer.

In this thesis, the first example is classified as false content as it is not claiming to be news, nor does it come from a source that could be perceived as a news outlet. The latter example is classified as disinformation because it is a news network, albeit one that has been described by the Institute for Strategic Dialogue (ISD) as a source of harmful disinformation (Institute for Strategic Dialogue, 2020). While *Figure 24* may be turned into an article and then published by a news outlet, or while *Figure 25* may be distilled into a social media post by an individual, it is still important to recognise that these are different in the formats presented here.

7.1.5. Disinformation Versus Misinformation

The discussions above aim to highlight one main difference between disinformation and misinformation: intentionality.

Table 35 A comparison of properties of disinformation and misinformation

Property	Disinformation	Misinformation
The writers/sharers know that the content they are creating/sharing is false	✓	✗
The writers/sharers are intentionally deceiving others	✓	✗
It is possible to prove whether writer/sharer is intentionally deceiving	✗	✗

Table 35 illustrates some of the properties that differentiate disinformation and misinformation, though it is not definitive. For example, a sharer may actively decide not to factcheck an article or seek to verify its veracity, even if they have some doubts, perhaps because they strongly prefer to believe the story. In doing so, they are still somewhat accountable for sharing a false article. In other words, sharers can knowingly reproduce content that they may themselves have suspicions about, but rather than investigate, they may choose wilful ignorance about the veracity of the content. This is discussed in [section 4.1.2.](#) in relation to kayfabe and the suspension of belief.

7.2. A Taxonomy of Disinformation

The following section will discuss concepts that are closely associated with disinformation, namely: [misreported news](#), [parody](#), [satire](#), [bias](#), [selective reporting](#), misleading news, and fabricated news. Each concept will be discussed in the ensuing sections and I will then provide an overall summary of each in the form of *Figure 29 A disinforming cline*. Each section will include real examples of each phenomenon and how it relates to disinformation.

7.2.1. Misreported News

According to the Oxford English Dictionary (OED), information is ‘misreported’ when it has been “falsely or inaccurately reported” (2017). This definition is only a starting point, however, since this would, in theory, not separate misreported news from misinformation or disinformation. For the purposes of this thesis, then, misreporting is news that is erroneous, inaccurate, or otherwise *unintentionally* incorrect, and that has been published because these mistakes were not known about or noticed at the time of publication. It is crucial to note that intention separates disinformation from misreporting, since disinformation *deliberately* misleads the reader while misreported news *unintentionally* misleads.

What separates misreported news from misinformation is that it is often corrected, and is a news practice common enough in journalism that many major news outlets have dedicated clarifications webpages that correct misreported news. Many major news platforms also annotate articles with headers or footers that note changes and corrections in the content, often with explanations. These will tend to be minor points such as misspelled names, but some are much more serious and can change the complexion of the story entirely. The act of correction demonstrates that not all factually incorrect news can be labelled as deliberately disinforming, since (some) actors take measures to redress – and make visible – errors in their

original reports. This, once again, acts to show the importance of intention in classifying disinformation.

A common example of misreported news is reported deaths, as shown in *Figure 26* below .



Figure 26 Examples of premature obituaries

In the first example from Reuters, American businessman George Soros is reported to have passed away at ‘XX’. The presence of the ‘XX’ and ‘XXX’ placeholders where Soros’ age and his manner of death would otherwise appear strongly suggests that the article was a template that had been prematurely published. In the second article, the German magazine *der Spiegel* published an article in 2012 entitled ‘Der bessere Bush’ (literally: The better Bush) that incorrectly reported the then hospitalised George H. W. Bush’s death.

Misreported news, and subsequent corrections, can be weaponised too. For example, a news organisation may claim to have misreported something when actually this was done intentionally. Some articles will be deliberately disinforming and then use the “correction” as cover, knowing full well that the correction will be read by a fraction of the people that consumed the first news output. Correction, therefore, does not always mitigate the success of the original disinforming article achieved in disinforming readers.

Finally, misreported news exemplifies a vital feature of disinformation: any classification is subjective. For example, some people might allow the benefit of the doubt for news producers for publishing misreported content whereas others may immediately classify the article as intentional disinformation. At present there is no research assessing whether particular variables (age; ideology; education) impact an individual’s likelihood to classify misleading news in certain ways.

The reality is that from the academic’s perspective, we are often on the outside looking in, so even with the benefit of experience, analysis, and careful thought, we must operate from the position of educated guesswork. We should not take positions regarding the absolute truth of content, but instead should take our position based on whether it appears to be seeking to [disinform](#) based on the evidence and information we can realistically gather from the world at large, while allowing for the fact that that information could contain its own inaccuracies and errors.

7.2.2. Satire

A type of news with interesting overlaps to disinformation is satire. Satire is a work whose purpose is “to expose and criticize prevailing immorality or foolishness, esp. as a form of social or political commentary” (OED, 2017). Satire uses humour and irony to point out the flaws in society (Salas-Zárate et al., 2017, p.20) by providing criticism.

Satire can be identical to disinformation in form. Stories are fabricated and appear to come from legitimate news outlets and are based on real life figures, often referring to recent current events. The distinction between disinformation and satire lies once again in intentionality and

purpose – satire does not wish to be taken as truth but instead aims to provide a critical or comedic commentary, whereas disinformation is intended to be believed by the news consumer. Nevertheless, as Salas-Zárate et al. (2017) note, “news satire is often mistaken for legitimate news, especially when it is disassociated from its original source” (p. 20) showing that satire may be interpreted as disinformation when it is not viewed in context or when there is no clear disclaimer.

Arguably, to be successful satire is intended to be self-evident through some means, such as world encyclopaedic knowledge or general normative frames of reference. For instance, one satirical strategy involves making a claim that is simply too incredible to readily believe. *Table 36* offers two examples.

Table 36 Headlines using extreme claims to carry out satire

News Outlet	Headline
The Daily Mash	Trump is on glue, confirms White House
The Borowitz Report	Kremlin Names Trump Employee of the Month

The first headline in *Table 36* claims the White House has confirmed that President Trump uses glue as an intoxicant. However improbable it may seem that a standing US president would use recreational drugs such as inhalants, it is far more improbable still that the White House would confirm such an activity. As such, the combination of both the claim and the authority it supposedly sprang from take this headline from extraordinary to unbelievable. Similarly, the second example holds that President Trump has been named ‘employee of the month’ by the Russian government, satirising the controversy of President Trump’s ties with the Russian government during and after his first election.

However, not all cases of satire are so overtly insinuated. Consider, for example, the examples in *Table 37*.

Table 37 Suspect Satirical Articles

News Outlet	Headline
The Daily Mash	Farage to design posters for Trump campaign
The Borowitz Report	Trump Says He Does Not Know Jared Kushner Very Well

This first example claims that following the notoriety of his campaign posters, the former UK Independence Party (UKIP) leader and now Reform MP leader Nigel Farage has been hired to create posters for the Trump administration. Farage is an experienced politician who helped create societal shift in the UK. He was a figurehead for a successful campaign for Britain to leave the European Union, and he generated much controversy by using an image of Syrian refugees queuing as a reason for Great Britain to leave the European Union (see *Figure 25*).



Figure 27 *Breaking Point* (UKIP poster)

This headline is plausible due to the shared political beliefs between Farage and Trump amidst other reporting at the time in 2016 of their in-person meeting and potential collaboration (BBC News, 2016; Helmore & Pengell, 2016).

In the second example, President Trump supposedly claims that he does not know his son-in-law Jared Kushner ‘very well’. While such a scenario is unlikely, this is not a shocking statement, nor is it overtly humorous or satirical. It is not especially unusual for even supposedly close family members to not really know each other well, and so this headline could be perceived as true, especially when isolated on a Twitter or Facebook newsfeed without any, or with only supporting context.

Figure 28 below demonstrates how the two articles from Table 37 appeared when shared to the social media website Facebook.



Figure 28 Two satirical articles shared to Facebook

A key issue is how clearly the previews (and not just the headlines) identify as satirical or otherwise. The Borowitz Report, which acts as the satire section of the New Yorker magazine, features the disclaimer ‘NOT THE NEWS’ in red print in the middle of the ‘tile’ that appears on

Facebook. However, the Daily Mash article does not feature any disclaimer and subsequently the article could be perceived as sincere. This reiterates a key issue with genuine satire – while it has no intention to mislead but still has the potential to do so.

Additionally, if an individual happens to search the internet for The Daily Mash, the result will show up with “satirical website” after the name, and on the site itself, nestled in the About/Advertise page, it claims that, “The Daily Mash is a satirical website which publishes spoof articles, i.e. it is all made-up and is not intended, in any way whatsoever, to be taken as factual” (The Daily Mash, 2023). Research shows, however, that the reality is that most people never proceed beyond the headline of articles seen on social media (Gabiello et al., 2016; Sundar et al., 2024), meaning they will not see these disclaimers. As such, unless a disclaimer appears in the preview like the Borowitz Report above, the likelihood of satire being mistaken for sincere is arguably that much higher.

Satire, like misreported news, can also be weaponised. Satire can be used as a defence by those who have been accused of spreading disinformation. In these situations, the blame is placed on the audience who has supposedly failed to understand the satire, rather than the producer who has peddled disinformation. The implicated texts are argued to be satirical works that provide social commentary, when fabricated news stories can be used as a vehicle for disinformation.

There are disputes in the literature whether satire should be classified as disinformation or misinformation. As Shu et al. (2017) explain, “some papers regard satire news as disinformation since the contents are false” while others only treat “deceptive news as fake news” (p. 23). Seeking to clarify this issue, Rubin et al. (2015) emphasise the importance of *situational interpretation* of disinformation, the idea that disinformation cannot always be classified at the micro scale and that sometimes a macro level classification is needed for individual or sets of suspect articles. For example, in *Figure 28* above, a situational interpretation could classify the Borowitz Report article as satire but the Daily Mash article as disinformation on the basis of the lack of an immediate disclaimer in the latter. Simply labelling all satire as disinformation or misinformation would erase the rich history of satirical works and the positive impact that satire can have on society (Meijer Drees & de Leeuw, 2015), which is why I have not subsumed satire into disinformation here.

It is worth acknowledging that parody is often conflated with satire. While satire offers up critical commentary through the creation of content, parody “involves the imitation and transformation of another’s words” (Dentith, 2000, p. 3) normally through means of exaggeration, understatement, and other rhetorical means, for the purpose of mocking and comedic effect (Korkut, 2005). This brings up other associated concepts that are beyond the scope of this section, such as sarcasm (Filibeli & Ertuna, 2021) and pranks such as April Fools stories (Dearden & Baron, 2019)

7.2.3. Bias

A news practice that can be associated with disinformation is news bias. News bias refers to how an organisation having a predisposition towards a certain person, institution, political agenda, ideology, or more general viewpoint leads to “systematic differences in the mapping from facts to news reports” (Gentzkow, Shapiro and Stone, 2014, p. 03). Since bias is an umbrella term for a wide number of practices and can manifest itself in countless ways, the easiest way to demonstrate it is through the examples provides in *Table 38*.

Table 38 Varying News Bias

News Outlet	Headline of News Article
Fox News	Read the House Benghazi report
The Guardian	House Benghazi report faults military response, not Clinton, for deaths
The Washington Times	Benghazi report points out Obama, Clinton lies
World Net Daily	Lawmakers Charge Hillary, Obama With Lying, Cover-Up

In *Table 38*, all four headlines were published on the 28th June 2016, and all four concern the publication of the US House Select Committee’s report on Benghazi. The Benghazi report sought to investigate any wrongdoing by the Obama administration after four Americans were killed in a coordinated attack at the US consulate and CIA annex in Benghazi, Libya in 2012. Despite addressing the same topic on the same day, the four articles vary drastically in their reporting style. Fox News provides the most impartial response and does not offer any interpretation. The article behind the headline comprised only a link to the US government webpage containing the committee report. The Guardian views the report as a not-guilty verdict for Hillary Clinton, the secretary of state during the Benghazi attack, and casts the report in a positive light for the then president and secretary of state. The Washington Times notes that the report highlights Obama and Clinton’s ‘lies’ about the Benghazi attack and casts them in a negative light. Finally, World Net Daily reports that Clinton and Obama were ‘charged’ by lawmakers with a cover up. There is ambiguity here in the senses of ‘charge’, which can be used in a legal sense (to charge someone judicially) or in a non-legal sense of accuse or berate (OED, 2024a). Since this is attributed to ‘lawmakers’, a reader is likely to interpret ‘charged’ in its legal sense, though there is no record of Obama or Clinton being formally charged. By invoking this reading, the publication can be accused of skewing the presentation of the story into the realms of fabricated disinformation and it is reasonable to assert that the motivation for doing so resides in bias.

The examples above illustrate that news bias does not necessarily equate to disinformation but instead that bias is a cline; news stories can be positioned from impartial (Fox News story) to highly biased (Washington Times) to disinformation that appears to be a result of bias (World Net Daily).

7.2.4. Selective Reporting

Selective reporting is the process whereby newswriters may “selectively omit some facts so that the presented facts support a desired stance” (Zhu & Dukes, 2015, p. 57). And this is broadly a manifestation of news bias. It is important to note that all reporting is selective reporting, but in this context, we are especially concerned with key facts, variables, or context that offers explanatory insight being selectively omitted from a news story to skew its interpretation.

Selective reporting relies more heavily on reader inference rather than directly on the writer’s explicit claims because it often presents only a subset of the available information. By omitting certain details or contextual information, the writer indirectly shapes the reader’s perception without necessarily explicitly stating the conclusion or opinion they are trying to lead them to. This technique shifts the cognitive burden onto the reader, compelling them to draw (flawed) conclusions based on the limited information provided. The result of this is the reader is misled.

This practice highlights the role of deception by omission of facts, rather than deception by commission of falsehoods. It is one thing to disinform with OBAMA DEAD! (deception by

fabrication) and *provide* the wrong facts but another to leave out pertinent facts (deception by omission) knowing that the reader will come to the wrong conclusion. This also offers writers plausible deniability, as they can say they did not intend to leave anything out. Galasinski (2000) notes that the deceiver who omits information does “nothing to distort or falsify reality” but is simply “silent and merely conceals a piece of information” (p. 22). This suggests a more passive role in omission, as opposed to those who would actively omit in order to deliberately conceal information in order to deceive others (Donath, 1999).

7.2.5. A Disinforming Cline

The discussions above illustrate that factually incorrect content online is far more nuanced than the term ‘disinformation’ alone would suggest. There are, in reality, many forms of factually incorrect news, from accidentally misreporting to intentional fabrication. Intention is often the deciding factor in these classifications, but as mentioned in [section 7.1](#), it is not always easily identifiable.

	Category	Brief definition	Example
LOW (False) ↑	Misreported news	Unintentionally erroneous reporting.	DO NOT PUBLISH – Former first lady Barbara Bush d*es at age 92 DO NOT PUBLISH!
	Parody	Reframing and restating of real events.	HOLY SHIT MAN WALKS ON FUCKING MOON
	Satire	Fabrications for humour or critique.	Kim Kardashian becomes Archbishop of Kanterbury
← HIGH (Fake) Intention to deceive	Bias	Reporting to align with specific beliefs.	Benghazi report points out Obama, Clinton lies
	Selective Reporting	Reporting only part of a story by omitting facts.	Email scandal proves Hillary learned wrong lessons from Nixon and Watergate
	Misleading News	Deliberately misconstruing information.	Criminal convictions for EU migrants leap by 40% in five years
	Fabricated News	Commission of false information alongside legitimate information.	Sturgeon bans Union flag for Queen’s birthday

Figure 29 A disinforming cline

In this cline, we can find examples of disinformation creeping in through bias and selective reporting. For example, only including certain facts from a story can present a disinforming report; this, however, is not news fabrication but instead news decontextualization and deliberately not reporting a full story. An explainer for the ‘Misleading News’ example can be found [here](#).

As this table and chapter so far have demonstrated, disinformation is far more nuanced and complex than the lay usage of the term typically suggests. Such underlying complexity in this case hints at a linguistic history that reaches back far beyond the 21st century and modern US politics. As is typical with language, however, over time the precise terms and their meanings have undergone several shifts, and understanding the linguistic history of disinformation in turn paints a fuller picture of the phenomenon we are dealing with today

7.3. A Linguistic History of Disinforming Terms

One approach to systematically tracing words from their origins through to the present day is to analyse their appearances, uses, and distribution in large historical corpora. Two main corpora were searched for historical uses of ‘fake news’ which as discussed in [Section 7.1.3.](#) above is the most used term for disinforming content. An overview of each corpus is given below in [Table 39.](#)

Table 39 Historical corpora

Corpus	Number of Words	Number of Texts	Date Range
Helsinki Corpus of English Texts	1,572,800	450	AD730-1710
Early English Books Online (EEBO)	1,202,214,511	44,442	AD1473-1700

While the term ‘fake news’ may be relatively new, the *concept* can be traced back at least as far as the Roman Empire. One notable example occurred around 3,300 years ago, in approximately 1274BC, when Ramesses proclaimed himself victorious in the Battle of Kadesh. In reality, the outcome was, at best, a draw. It is however unsurprising that a search for ‘fake news’ returned no results in either the Helsinki corpus or EEBO – this is because the word ‘fake’ did not enter regular British English usage until the late 18th century (OED, 2024b) and both corpora only cover up to the early 18th century. While ‘fake’ does appear in EEBO, there are only 165 occurrences and it is never used in conjunction with ‘news’. Instead, as discussed in the following sections, it is necessary to find closely synonymous historical linguistic manifestations of ‘disinformation’.

Table 40 Distribution of ‘false news’ in EEBO

Category	Words in category	Hits in category	Dispersion (no. texts with 1+ hits)	Frequency per million words in category
1400_1499	7,042,668	0	0 out of 127	0.00
1500_1599	179,364,814	40	29 out of 4,261	0.22
1600_1699	996,472,953	287	209 out of 39,212	0.29
1700_1799	17,423,903	3	3 out of 770	0.17
Total:	1,200,304,338	330	241 out of 44,422	0.27

In EEBO, a query for ‘false news’ returns 330 matches; this is shown in [Table 40.](#) However, in the Helsinki corpus ‘false news’ returned no matches. A search for ‘false’ by itself returned 166 matches, and resultantly I looked for lexico-syntactic/semantic patterns of false [+communication]. The term ‘false news’ predates ‘disinformation’, ‘misinformation’, and ‘fake news’ and so became the focus of this section, as the goal is to trace this concept back as far as possible.

7.3.1. Helsinki Corpus of English Texts

The Helsinki Corpus of English Texts is a diachronic corpus containing textual samples of language from c. 730-1710. One notable limitation is its relatively small size. To maximise the number of relevant results, the corpus was searched for the term ‘false’ and then the resulting co-text was manually and carefully assessed for relevance. *Table 41* shows the first six concordance lines.

Table 41 Earliest hits for ‘false [communication]’ in the Helsinki Corpus

Number	Year	Concordance
41.1	1440	all manere of lesynges , False consperacye and false swerynge
41.2	1680	the pleasure they took in defaming innocent Persons , and spreading false Reports of some , perhaps in Revenge
41.3	1682	the pleasure they took in defaming innocent Persons , and spreading false Reports of some , perhaps in Revenge
41.4	1685	I humbly beg of your Lordship not to harbour an ill Opinion of me , because of those false Reports that go about of me , relating to my Carriage towards the old King
41.5	1694	saw yt they had sworne a whole yeere false
41.6	1694	have not you false swearing enough heere : whoe putts ye oath to mee yt cannot

As would be expected, not all uses of ‘false’ relate to ‘false news’. However, some of the examples (41.2-41.4) may be said to closely relate to the dissemination of disinformation and discuss people ‘spreading false Reports’ – though such reports are likely to have been spoken and not our modern understanding of news media. All the concordances of ‘false’ from the corpus were manually examined to identify uses relating to news. Of the 166 occurrences only three were found to be distantly related to ‘false news’.

These uses refer to ‘false reports’ or ‘false conspiracy’ referring to false information spread from person to person so not institutional news in the sense that disinformation is defined in this thesis (see [section 7.5.](#)). The examples likely meant the stories that traders carried from town to town, or the travelling newspeople of the day, or pamphlets or church readings.

7.3.2. EEBO

The EEBO corpus is considerably larger than the Helsinki corpus and positions itself as a complete repository of texts between 1473-1700 (Davies, 2017a). McEnery and Baker (2016) discuss the utility of EEBO in a study of prostitution in the 17th century and can attest to the merits of its sheer scale; while three other historical corpora returned only two examples of ‘prostitute’, EEBO returned 2,397 occurrences (p. 20).

An issue that soon became apparent with historical uses of ‘false news’ is that many of the results did not refer to ‘news’ in the sense that is used in this project. This study uses ‘news’ as information that is published or broadcast by an institution, or person representing an institution (see [section 7.1.4.](#) for disinformation vs false content), that is an identified news provider (whether disinformation or ‘real’ news). However, many uses of ‘news’ in the data refer simply to “new information; new occurrences as a subject of report or talk” (OED, 2024c) and

not news in its journalistic sense. Examples of ‘false news’ in the EEBO corpus that demonstrate this are in *Table 42*:

Table 42 Example of “false news” in the EEBO corpus

Example	Year	Concordance
42.1	1527	Tellers of false news and false messagys of prelattys of lords of iustices and other great offycers
42.2	1551	that no manner of person fr ò hencefurthe , be so hardy to find , say , or tell any false news , messages , or other such false things

In these uses from the 16th century, ‘false news’ and ‘false messagys’ (messages) are equated showing that news is not used in its journalistic sense but instead to mean purely ‘new information’. As with the query results for the Helsinki corpus, results from EEBO were manually sorted to find historical uses of ‘false news’ where *news* means journalistic reporting.

7.3.2.1. False News, Light Tales and Licentious Discourses

The earliest uses of ‘false news’ in EEBO are shown in *Table 43*.

Table 43 Earliest uses of “false news” in the EEBO corpus

Example	Year	Concordance
43.1	1527	Tellers of false news and false messagys of prelattys of lords of iustices and other great offycers of the realm whereby debate or discord may shall be inprisoned till he have found him of whom the tale was showed .
43.2	1534	it is commanded that from henceforth none be so hardy to tell or publyshe any false news or saes whereby discord or ccsyon or dyscord or sklauder may gw between the king and his people
43.3	1548	and that all Vacaboundes , all lewd and light tale tellers , and seditious bearers of false news of the King 's Majesty , or of his counsel , or such as will preach without license , be immediately by you represte and punished.

These results show that the phrase ‘false news’ dates back to at least the early 16th century. Indeed, the terms are likely to date back much further than this; as Buringh and Van Zanden (2009) explain, literacy rates in Great Britain at the turn of the 16th century were less than 10% of the population, and as such, there was likely a delay in committing language that was being used (i.e., spoken) to a written form. Furthermore, these examples represent what is found in written texts that have survived.

There were several other terms that were used comparably to false news, examples of which are shown in *Table 44*.

Table 44 Near synonyms for “false news” in the EEBO corpus

Example	Year	Concordance
44.1	1548	might bring other to like mishap , and that all Vacaboundes , all lewd and light tale tellers , and seditious bearers of false news of the King 's Majesty

44.2	1684	Jealousies , Murmurings , Repinings , Libels , Licentious Discourses , false News , half Whispers , Disputing , Excusing , or Cavilling upon Directions
44.3	1686	seditious Libels , half whispers , false News , licentious discourses , jealousies , murmurings and repinings are forged

In example 44.1, ‘false news’ is compared with ‘light tales’. ‘Light tales’ only occurs four times in the whole of EEBO (1 instance per 300,553,627 words), with one use appearing alongside ‘false news’ and another alongside ‘false rumours’. In example 44.2, ‘half whispers’ are listed alongside ‘false news’ and all two occurrences of ‘half whisper’ (1 instance per 601,107,255 words) occur immediately before or after the term ‘false news’. Finally, ‘[licentious discourses](#)’ appears most frequently with 21 occurrences (1 instance per 57,248,310 words) and occurs alongside ‘false news’ 12 times in 10 different texts. These results demonstrate two main points. The first is that over the span of a century or so, a paradigmatic field of terms sprang up that fundamentally dealt with the semantic concept of what we might call untruthfulness. The second point is that of all the words or phrases that refer to disinformation in EEBO, ‘false news’ is the most common; this demonstrates the benefit of using ‘false news’ as a search term to trace the history of terms for disinformation. The purpose of this analysis is not to provide an exhaustive etymology of the word, but to chart back the general semantic roots as far as I reasonably can through various lexical manifestations.

However, none of the uses above explicitly reference written false news, and one occurrence contrasts written disinformation with the search term:

Table 45 A possible contrast between written and spoken information

Example	Year	Concordance
45.1	1692	That the Public Peace may not be disturbed by any Writings or licentious Discourses , no Books treating of your Religion , whether printed within or

In example 45.1, the conjunction or is used to contrast ‘Writings’ from ‘licentious Discourses’, thus suggesting that the ‘licentious Discourses’ are in spoken form. Following this, the occurrences of ‘false news’ in EEBO were reviewed manually to identify occurrences referring explicitly to written disinformation (the type of disinformation this thesis focuses on).

7.3.2.2. Historic Written Disinformation

Table 46 is split into two sections – the first shows uses of ‘false’ news that could (i.e. do not conclusively) refer to written fake news, while the bottom section of the table shows occurrences that conclusively refer to written fake news.

Table 46 References to written ‘false news’ in the EEBO corpus

Example	Year	Concordance
46.1	1534	that from henceforth none be so hardy to tell or publyshe any false news or saes whereby discord or ccsyon or dyscord or sklauder may gw

46.2	1661	I. Innovations in Government ; Publishing of false News , and Prophecies ; Pretenses of Reformation ; Sects and Divisions in matters of Religion ; Quarrel against Episcopacy
46.3	1689	the King put out a Proclamation , prohibiting the spreading of Rumours and False News .
46.4	1672	that they presume not henceforth by Writing or Speaking , to [u]tter or Publish any False News or Reports , or to interfere with the Affairs of State and Government
46.5	1681	a Common Purse managed , and Agents employed in every County , to prepare and influence the people , write and disperse false News , Libels against the Government
46.6	1681	a Common Purse managed , and Agents employed in every County , to prepare and influence the people , write and disperse false News , Libels against the Government
46.7	1688	that they should not presume by writing or speaking , to utter or publish any such false News or Reports
46.8	1688	that they presume not henceforth , either by Writing , Printing or Speaking , to utter or publish any false News or Reports whatsoever , or to interfere with the Affairs of State
46.9	1688	such Persons who shall be guilty of any such malicious and unlawful Practices by Writing , Printing , or other Publication of such false News and Reports , or who shall receive or hear the same

Examples 46.1-64.3 talk about disinformation being published however it is unclear, even on closer inspection of the full text, if ‘publishing’ is used in its journalistic sense of “to prepare and issue copies of (a book, newspaper, piece of music, etc.) for distribution or sale to the public” (OED, 2024d) or whether it is used in its more general sense of “to make public or generally known; to declare or report openly or publicly; to announce” (ibid.). As a result, it cannot be stated definitively whether these uses refer to written disinformation as the term ‘publish’ has had various word senses over the years⁹.

Conversely, examples 46.4-46.9 provide explicit reference to ‘false news’ being disseminated through ‘writing’ and ‘printing’. This table shows all examples of written false news (whether they are duplicated or not) and the uses constitute the earliest instances in the EEBO corpus where written ‘false news’ is explicitly discussed. The six occurrences appear in five different texts and also all appear in a narrow time frame of sixteen years. This would suggest that the advent of written disinformation was mid to late-17th century (allowing for a small delay in written reportage of the phenomenon).

An interesting occurrence of ‘false news’ in EEBO was example 47.1, in *Table 47*.

Table 47 Comparison of EEBO text to tweets expressing similar sentiment

Example	Year	Concordance
47.1	1692	What is the reason there is so much false news spread abroad , and that many delight to make others believe strange things ?

⁹ For example, in Jane Austen’s *Pride and Prejudice* (1813), “publish” was used to mean “loudly proclaim”, “tell everyone about”, “brag”, etc. For example: “he was at the same time exercising great self-denial, for he was longing to publish his prosperous love.” (np).

47.2	2017	Why is there so much fake news? It seems like everything you see is corrupted with falsities. I'm tired of hearing things that aren't true
47.3	2017	Why make fake news up?

Example 47.1 provides a reflective account of disinformation and asks why there is so much false news and why ‘people delight to make others believe strange things’. This demonstrates that false (fake) news is far from a modern issue and that the motivations for producing disinformation date back centuries. Examples 47.2 and 47.3, by comparison, are taken from the social media network Twitter. Users tweet asking ‘why is there so much fake news?’ and ‘why make fake news up?’, showing how people have been questioning the occurrence and motivations of disinformation for centuries and still continue to do so.

7.3.3. False Becomes Fake

Use of the term ‘fake news’ to denote disinformation (that is, written/reported factually incorrect news) dates back to the late-1800s in English¹⁰. As *Table 48* shows, the earliest use of the term ‘fake news’ originates from the Railroad Gazette in 1893. What is perhaps remarkable here is that this use from the 19th century is the same as the term is understood now – people producing factually incorrect news. The only difference is the medium (print instead of social media). A range of other publications use the term, including criminal codes, magazines and periodicals, and newspapers. This provides evidence contrary to common assumptions that ‘fake news’ is a recent development – the term is at least 132 years old. This historical continuity highlights how awareness of fabricated news has persisted across different media landscapes, reflecting a persistent societal challenge rather than simply a novel phenomenon.

Table 48 Earliest uses of 'fake news'

Year	Source	Use
1893 [earliest use]	Railroad Gazette. (1893). United States: Railroad Gazette.	The New York Sun, one of the most skillful finishers of fake news , printed the following on a Monday morning
1894	The Criminal Code of Canada and the Canada Evidence Act, 1893, with an Extra Appendix Containing the Extradition Act, the Extradition Convention with the United States, the Fugitive Offenders' Act, and the House of Commons Debates on the Code. (1894). Canada: Whiteford & Theoret.	Spreading fake news – Every one is guilt of an indictable offence and liable to one year's imprisonment who wilfully and knowingly publishes any false news or tale whereby injury or mischief is or is likely to be occasioned to any public interest
1896	Farmers' Review. (1896). United States: Hannibal H. Chandler & Company.	A combination of the cheap trash publishing houses and fake news papers

¹⁰ Google Books notes a use of fake news in Alford (1869) however this is a transcription error: the usage ter-iffic news (split across two lines) has been erroneously transcribed digitally as ‘ter-fake news’ [sic].

1897	The Pharmaceutical Era. (1897). United States: D. O. Haynes & Company.	We can imagine nothing more edifying or uplifting than the spectacle of the newspaper reader turning eagerly from the fake news story or political editorial to the advertising columns where morality sits
1897	Timely Topics. (1897). United States: (n.p.).	Much fake news from Santiago has come to Washington this week , and some oficial news from Commodore Schley , but the latter was not made public
1898	Boston Post, 19 th February 1898	Real News and ' Fake ' News

As shown in *Figure 30* below using data from the Google Books English corpus, 'fake news' has consistent usage through the 1900s, experiencing an uptick in the 1920s and 1940s. In 1925, a Harper's magazine article titled "Fake news and the public" (McKernon, 1925) was published, showing how, by this point, the term was entering into mainstream, popular public use. Use of 'fake news' in the 34 billion-word Google Books British English corpus shows an uptick in the 1960s and 1970s, with a further increase towards the turn of the century.

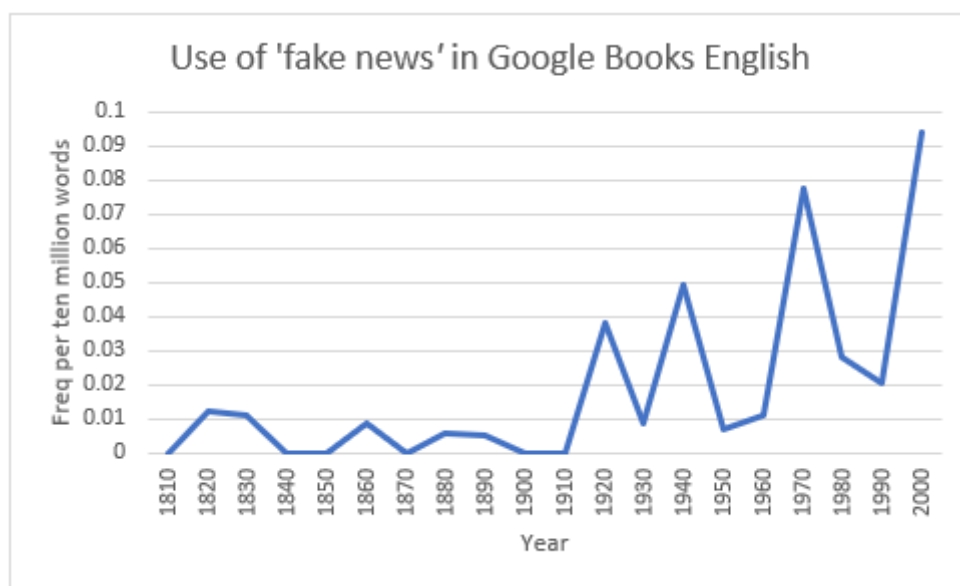


Figure 30 Use of fake news in Google Books English, 2021

The data shows that in the 1970s attention turned towards CIA reports of 'fake news' from the Soviet Union, while in the 2000s the majority of hits originate from academic and research works, such as publications discussing satire, journalism and news media.

7.3.4. Fake News in the Age of Social Media

While historical analyses of 'fake news' is important, it is necessary to consider the role of new technologies and forms of computer-mediated communication (CMC), and in particular, social media. As Allcott and Gentzkow (2017) note, social media platforms allow content to be "relayed among users with no significant third party filtering, factchecking, or editorial judgment" giving individuals the potential to "reach as many readers as Fox News, CNN, or the New York Times" (Allcott & Gentzkow, 2017, p. 212). The advent of the internet, later followed

by large, free online internet tools such as Facebook, YouTube and Twitter afforded individuals a new wave of information dissemination in which credentials, infrastructure and a customer base were not needed – all that was required was an internet connection.

The rise of online disinformation can be linked in part to the rise of the participatory web (Web 2.0, discussed in [section 2.2.2.](#)) and the consequent rise in citizen journalism. Defined by Goode (2009) as “a range of web-based practices whereby ‘ordinary’ users engage in journalistic practices. [...] such as current affairs-based blogging, photo and video sharing, and posting eyewitness commentary on current events” (p. 1288), citizen journalism is a decentralisation of news reporting from heritage news outlets to individuals and small and medium sized enterprises (SMEs). In other words, the participatory web dramatically increased the number of people who could share information online, also increasing the number who can share disinformation.

This practice created a sub-culture that enabled and empowered individuals to report events that mattered to them and their communities from their own perspectives. With the advent of social media, the reach of individual- and SME-media was amplified to a global scale at minimal cost. Throughout this period both the use of the term ‘fake news’ and the interest in fake news as a phenomenon increased. *Figure 31* and *Figure 32* demonstrate this below.

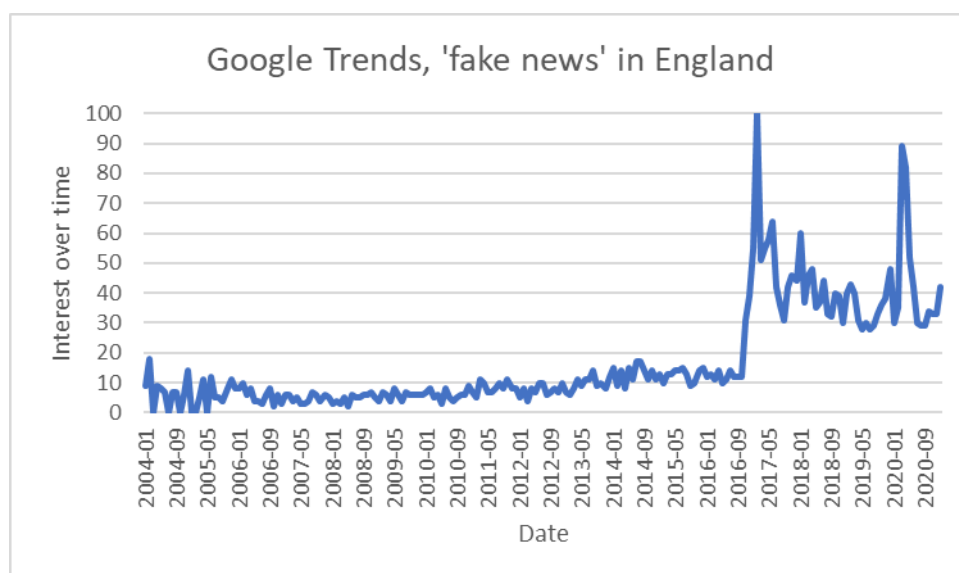


Figure 31 Google Search trends for 'fake news' in England

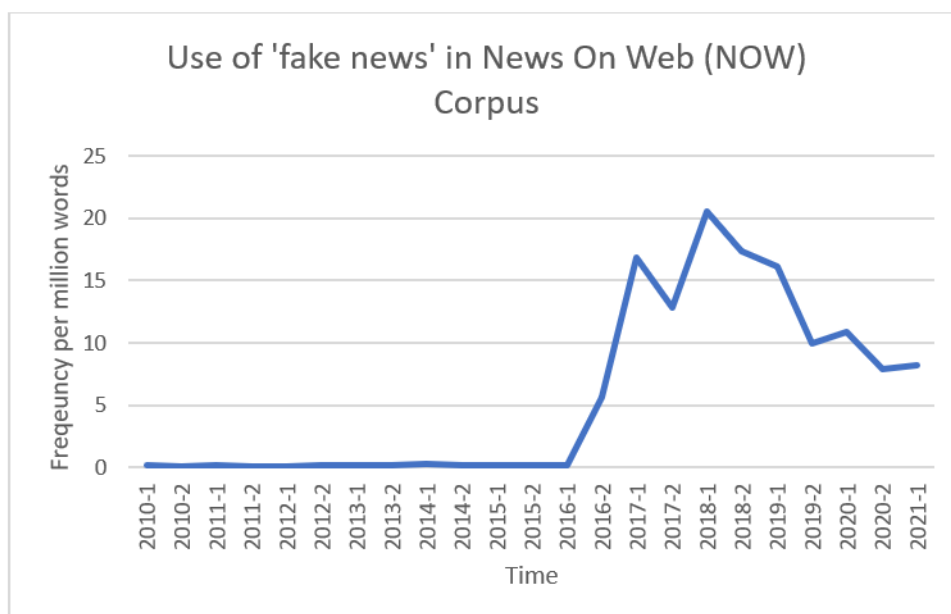


Figure 32 Use of 'fake news' in NOW corpus

In *Figure 31*, the y axis shows interest over time, where 100 represents when the term was searched most and represents maximum/peak interest. *Figure 31* shows a relatively stable, sustained number of Google Search queries for 'fake news' from up until the third quarter of 2016. Notably this coincides with major events such as the US Presidential Debates on 26th September and Donald Trump winning the US Presidential Election on 8th November. From this point, there is a significantly sharp increase in queries for 'fake news', and this interest is sustained throughout the ensuing years. Similarly, *Figure 32* shows results for a search of 'fake news' in the 11.7 billion word Newspapers-on-the-Web (NOW) monitor corpus. The NOW corpus contains web-based newspapers and magazines from 2010 to the present. Both genres of publication initially show limited hits for 'fake news' until 2016 when, again, hits for the term rapidly increase and remain relatively high thereafter.

Linking this increased usage of 'fake news' to real world events, Bakir and McStay (2018) note that a "problem with fake news is that it is often deliberately affective" (p. 161), something that has both social and democratic implications. However, this can be taken one step further to say that the term 'fake news' is also deliberately affective (i.e. emotion oriented) in that it is used by political leaders and commentators to "accuse reporters of spreading lies as a way to discredit journalism they do not like" (Lees, 2018, p. 88). Lees refers to the term as a "global silencer", a rhetorical strategy that is used to "to plant mistrust in the media" (p. 88). Tambini (2017), in an overview of public policy responses to disinformation, notes that the first Trump administration (2017-2021) uses the term in a "blanket way to describe news content it disagrees with" (p. 9) as a way to "undermine legitimate opposition, and resist fourth estate accountability" (ibid). This could in part explain the datapoints in the figures above which are likely to directly correspond with the US elections, and also why this term may have been such a prominent feature of the US elections (i.e. the term has useful political applications).

What these graphs may also suggest is that prior to this point there was a lexical gap, when a word for a phenomenon does not exist or is not widely known in a language (Matthews, 2014; Quan-Zhi, 2017). That 'fake news' saw such a meteoric rise in usage could suggest that there was a gap to fill with this term, which could then go on to now explain its absolute

pervasiveness. In other words, the term ‘fake news’ was used to apply the new phenomenon of widespread social media disinformation and neatly filled the lexical gap. It is also important to remember that lexical gaps “may not be gaps for all language users” (Mooney, 2022, p. 411), and while some may have already been using this term, others may have not. Alongside this lexicalisation, an outcome of the rapid, recent evolution of ‘fake news’ is that this term has been further pejorated from denoting an already negative behaviour to becoming an insult. For this reason, many organisations have abandoned the phrase due to it being a “poorly-defined and misleading term” that “conflates a variety of false information” (*Disinformation and ‘fake news’: Interim Report*, 2018). Consequently, the term ‘fake news’ is not used in this thesis unless when commenting on the term itself.

The term ‘fake news’ has a longer history than many realise, but was undoubtedly shaped by the events building up to the 2016 US election, which saw its usage grow exponentially. The term goes back over 100 years, yet it was in the 21st century that ‘fake news’ was adopted to specifically describe computer-mediated disinformation.

7.4. A Crowdsourced Definition of Disinformation

While it is important, and necessary, to break down what is meant by terms such as ‘disinformation’ and ‘fake news’, it is also important to empirically explore their usage – how they are defined and employed by others. This allows any theoretical discussions to be enriched, broadened, supplemented, and if necessary, challenged by real-life uses of the terms.

This section surveys how terms for intentionally false news (‘disinformation’; ‘fake news’) are defined by others. Drawing on a range of sectors (see below for a list), this section looks at definitions of ‘disinformation’ and ‘fake news’ to identify mutual components. The benefit of this is it allows us to understand how disinformation is defined and described in as many contexts as possible. The Definitions Corpus consists of definitions collected from across academic, factchecking initiatives, government, NGO, journalistic, dictionary, and other sources (see [section 5.5.5](#)). The purpose of this is to assess how these terms are used by professionals to construct concepts of intentionally false content.

7.4.1. Findings

The first, and perhaps most important, finding from this data is that many sources, particularly academic articles, simply do not define ‘disinformation’ or ‘fake news’ when discussing it. This is a serious oversight in a considerable amount of the literature: disinformation is a theoretically complex topic and it is important to define it before discussing it. This also shows the importance of answering the first Research Question (‘What is disinformation?’), as this chapter seeks to do: to date there has not been a systematic study of cross-sector definitions of disinformation. While creating a cross-industry standard definition for disinformation would be beneficial, it is very difficult to achieve because such a definition would rapidly become out of date with new technological developments. This does not mean, however, we should abandon forming any definitions at all.

7.4.2. Quantitative Analysis

The first stage of analysing core components of definitions of ‘disinformation’/‘fake news’ is to run metrics to discover which words or phrases occur most often; doing this immediately gives insights into what the writers of these definitions see as integral to disinformation.

Using the method laid out in [Section 5.5.5.](#), the data was run through the Wmatrix corpus environment to semantically tag it (USAS). Results in order of frequency are shown in [Table 49](#) with functional categories that are typified by grammatical words (such as Z5 Grammatical bin) omitted.

Table 49 The Definitions Corpus sorted by USAS (top ten semantic tags ranked by frequency)

Rank	Semantic tag	Label	Frequency	Relative Frequency	Examples
1	A5.2-	Evaluation: false	87	8.61	false; deceive; mislead*; fabricate*
2	X2.2+	Knowledge	48	4.75	information; news; know*
3	X7+	Wanting; planning; choosing	45	4.45	deliberate*; intention*; purposefully
4	A1.1.1	General actions, making etc	27	2.67	creat*; spread
5	Q2.1	Speech etc: Communicative	26	2.57	stories; content
6	S5+	Groups and affiliation	15	1.48	public; social group; organi[s/z]ation*
7	Q2.2	Speech acts	13	1.49	reports; claims; discrediting; rumors
8	Q4	The media	11	1.09	media; reportage; publish*
9	A2.2	Affect: Cause/Connected	10	0.99	cause*; generating; influence
10	A9+	Giving; relinquishing	10	0.99	gain

The most frequent category, A5.2- Evaluation: false, contains words depicting the presence (positive) or absence (negative) of truth. These words are used to describe information that is false, misleading or fabricated. This is expected since disinformation is, at its foundation, information that is not true. Words in A5.2- are used to modify words in X2.2+ Knowledge, mainly ‘information’ or ‘news’. Interestingly, ‘information’ occurs 29 times and ‘news’ occurs 19 times; this shows how definitions are split on whether disinformation constitutes disinforming imitation news or any form of false information. This, in turn, reiterates the importance of critical discussions detailing the difference between disinforming news and disinforming content (see [Section 7.1.4.](#)).

Further differentiation of text types is indicated by Q2.1 Speech etc: Communicative, which comprises the terms presented in [Table 50](#).

Table 50 Uses of Q2.1 in the Definitions Corpus

Token	Frequency	Relative Frequency
stories	11	1.09
content	5	0.49
disseminated	3	0.3
dissemination	3	0.3

story	3	0.3
conveys	1	0.1

These tokens demonstrate the split between types of disinforming artefacts, in this case whether it is ‘story’/‘stories’ being referred to or the broader ‘content’. The token ‘content’ occurs 5 times across 4 definitions, while ‘story’/‘stories’ occurs 14 times in 13 definitions, and does not occur in the same definition as ‘content’. There is ambiguity, then, in current definitions as to what kinds of text (producer) must be doing the disinforming. For example, ‘stories’ implies news stories and emphasises a news element, while ‘content’ is much broader and can refer to “any materials, documents, photographs, graphics, and other information that is created, posted, distributed, or transmitted using social media Internet sites or social media tools” (Law Insider, 2025, np) which could itself include news stories. This is one aspect in which there is conceptual murkiness as to what can actually constitute disinformation in current definitions.

An important inclusion in A5.2- is ‘mislead*’ (mislead; misleading); a word that is less absolute than ‘false’, but still marks a negative behaviour. This highlights an important facet of disinformation: it is not exclusively false. While a headline may be entirely fabricated, invariably disinformation is a mixture of truth and falsehood and not entirely fictional. This is something that others have noted; for example Safieddine (2020) comments that many definitions of disinformation “assume that fake news is completely fabricated and has no element of truth” (p. 15) whereas in reality these stories often blend truth and lies together. This finding is reflected in the development of *Figure 29 A disinforming cline* that shows how there are shades of falsehood and disinformation.

The third most frequent tag is X7+ *Wanting; planning; choosing* which contains words depicting effort, such as *deliberate*, *intentional* and *purposefully*. All these occurrences are used to separate disinformation from misinformation and to foreground intentionality. This is integral to disinformation and fake news and separates disinformation from other practices such as satire and misreporting.

Three main conclusions can be drawn so far:

1. Both deception (the commission of falsehoods) and misleading (mixed truth and deception) should be mentioned to highlight that articles are often a mix of truth and falsehoods.
2. A decision needs to be made whether *information* or *news*, and *stories* or *content* is being referred to.
3. Intentionality must be mentioned to separate disinformation from misinformation, satire and misreported news.

7.4.3. Qualitative Analysis

While semantic tagging is useful, it does not offer the whole picture. Consequently, the Definitions Corpus was annotated by hand to identify features that macro level corpus analysis may overlook.

Table 51 Definitions of disinformation that include motivation

Definition	Source
knowingly false or misleading content created largely for the purpose of generating ad revenue	Guess, Nagler, & Tucker, 2019
news stories that were fabricated (but presented as if from legitimate sources) and promoted on social media in order to deceive the public for ideological and/or financial gain	Pennycook, Cannon, & Rand, 2018
Disinformation is the deliberate creation and dissemination of false and/or manipulated information that is intended to deceive and mislead audiences, either for the purposes of causing harm, or for political, personal or financial gain.	HM Government, 2020
verifiably false or misleading information created, presented and disseminated for economic gain or to intentionally deceive the public	European Commission, 2017
completely false information that was created for financial gain	Silverman, 2017

Table 51 shows some definitions from the Definitions Corpus that also include motivations for the production of disinformation. While it is perhaps something that many might miss, including a motivation for the production of disinformation means defining the verbal process to *disinform* and not the content itself with the nominal ‘disinformation’. While it is desirable to recognise and understand the motivations to produce disinformation, the issue with delineating them in a definition is that they can seldom be done justice. This risks oversimplifying the reasons disinformation exists to a short list. Disinformation is produced for complex reasons (see [Section 4.3.](#)) and distilling these into a single definition risks being reductive.

The Global Disinformation Index (GDI), a counter-disinformation initiative, propose that focusing on the verb *to disinform* allows us to focus not just on the content of disinformation but the “context in which it is presented – and the narratives, networks and actors behind it” (GDI, 2019) (see [section 1.5.](#)). Building on this, ‘disinformation’ could be used to refer to the deceptive/misleading artefact itself (story; article; editorial; etc) while the verb ‘disinform’ could instead focus on the means and motivations for the spread of disinformation. The verbal counterpart ‘disinform’, however is not very common at present. Table 52 below shows a comparison of the words ‘disinformation’ and ‘disinform’ across different large corpora.

Table 52 Frequencies of ‘disinform’ and ‘disinformation’ across several corpora

Corpus	Genre/Size/Date	‘Disinform’ frequency	‘Disinformation’ frequency
NOW Corpus (News on the Web) (Davies, 2017b)	Online news. 20.3 billion words. 2010-present.	0.01 pmw	5.40 pmw
BE2021 (Brown Family) (Baker, 2023b)	Written British English texts spanning press, general prose, academic writing,	0.00 pmw	13.91 pmw

	and fiction. 1 million words. 2021		
UKWaC (UK Web-as-corpus) (Ferraresi et al., 2008)	British English corpus collected from .uk domains. 1.1 billion words. 2007	0.00323 pmw	0.55 pmw
Directory of Open Access Journals (DOAJ) (Directory of Open Access Journals, 2025)	English-language academic journal articles. 2.6 billion words. 1874-present.	0.00090 pmw	0.05 pmw
Corpus of English Wikipedia (Davies, 2023)	English internet encyclopedia Wikipedia. 1.3 billion words. 2014.	0.00184 pmw	0.53 pmw

The verb ‘disinform’ is used less frequently than ‘disinformation’ in every single corpus presented above. Improving awareness of the verb ‘disinform’ requires emphasising its active nature, which highlights the intentional act of misleading others, in contrast to the otherwise passive connotations often associated with the noun disinformation. This can be achieved by incorporating the verbal form ‘disinform’ into public discussions, educational materials, and media coverage to draw attention to the deliberate and purposeful actions behind the spread of false information. This reflects the objectives stated by GDI above in emphasising the verbal form.

One issue in defining ‘disinformation’ or ‘fake news’ is the need to then modify ‘news’, in its original sense of “information about recent events deemed to be interesting, important, or unusual enough to be newsworthy [...] published in media ranging from newspapers to liveblogs”(Harcup, 2014).

Table 53 Definitions that propose a retronym to ‘false news’

Definition	Source
information that is designed to be confused with legitimate news and is intentionally false	Facebook, cited by Oremus, 2017
news stories that were fabricated (but presented as if from legitimate sources) and promoted on social media in order to deceive the public for ideological and/or financial gain	Pennycook, Cannon, & Rand, 2018
one that purports to describe events in the real world, typically by mimicking the conventions of traditional media reportage , yet is known by its creators to be significantly false, and is transmitted with the two goals of being widely re-transmitted and of deceiving at least some of its audience	Rini, 2017
fabricated information that mimics news media content in form but not in organizational process or intent	Lazer, et al., 2018

The definitions in *Table 53* use *retronyms* to distinguish ‘news’ from ‘fake news’/‘disinformation’; a retronym is a word that is “a modification of a referent originally used alone, to distinguish it from a later contrastive development”(Quinion, 2012). For example, ‘acoustic guitar’ is a retronym for ‘guitar’, following the advent of the electric guitar. In this case, ‘news’ is the original referent and the ‘fake’ in ‘fake news’ is the modification. There is then the need for a “later contrastive development”. We see in *Table 53*, that Facebook (Oremus, 2017) use ‘legitimate news’ as the retronym while Rini (2017) uses ‘traditional media reportage’ and Lazer et al. (2018) refer to ‘news media content’. We should be wary of developing and adopting a retronym that is biased or too ideological, and so in this thesis I will use legitimate news, i.e. news that can be defended and justified as valid by reference to the truth.

It is important here to note that these terms, ‘legitimate news’ and ‘disinformation’ refer only to the news artefacts themselves and not publishers or sharers. As mentioned in *section 4.1.*, referring to entire outlets as ‘disinformation’ is very hard to justify and often wrong. For example, a fringe disinforming outlet can produce a piece of legitimate news that is truthful, while a heritage media outlet can produce a piece of misleading or false disinformation. These are not value judgements but rather truth judgements on whether the information in a story can be corroborated, verified or confirmed as true.

Three further conclusions that can be drawn from this qualitative analysis of the Definitions Corpus are:

1. It is necessary to distinguish between the process of ‘disinforming’ and artefacts of ‘disinformation’
2. The motivations for the production of disinformation should occur in a definition of the verb and not the noun
3. A retronym must be created to account for non-deceptive news: this thesis will use ‘legitimate news’.

There is possible crossover here between disinformation studies and discourse studies. Gee (2007 (1990)) first introduced a distinction between ‘Discourse’ and ‘discourse’ for the purposes of distinguishing how we understand language as a set of social activities and conventions (uppercase D) from any given stretch of language (small d discourse) (Gee, 2015b, pp. 2-3). It may be useful to think of disinformation in these terms also. Uppercase D Disinformation could be used to refer to disinformation in the broader sense, accounting for all the associated techniques, practices, behaviours, and motivations, while lowercase d disinformation could refer simply to instances of false content. In this classification the latter would be a component of the former. As far as I can tell, this distinction has not been proposed elsewhere.

Table 54 Lowercase disinformation and uppercase Disinformation

Type	Discourse	Disinformation
Lowercase d	“any stretch of language in use [...] how the flow of language in use across time and the patterns and connections across this flow of language make sense and guide in interpretation.” (Gee, 2015b, p. 3)	An instance of false information; the deceptive artefact itself, whether this be textual, visual, audio, etc. and how this fits into the wider context. The user may or may not want to distinguish on veracity (see: misinformation).
Uppercase D	“the ways in which such socially based group conventions allow	The disinformation ecosystem and the associated practices and impacts, along with the actors, means, motivations,

	people to enact specific identities and activities.” (Gee, 2015b, p. 2)	sociopsychological factors, and other elements responsible for its production, dissemination and belief throughout history.
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There are pros and cons to this approach. It is a useful, simple way to distinguish between the competing senses while reiterating the scope of the phenomenon under discussion, but it is also yet another classification that may seem to further complicate an already complex field.

7.5. Definitions used in this thesis

The history of disinformation and misinformation is rich and complex, showing how the terms have been in use for hundreds of years, to describe even older phenomena such as ‘false news’. A historical, diachronic corpus examination showed some of the variance in terminology: ‘licentious discourses’, ‘false news’ and ‘disinformation’ all cluster around reference to content and news that is intentionally false.

Historical analyses are not, on their own, sufficient; it is also important to examine how the term is used across academia, the media, governments etc. Identifying consistencies across definitions of ‘disinformation’ also highlights key elements such as the centrality of intentionality; whether to include motivations for production; and the need for a retronym, i.e., ‘legitimate news’.

Finally, deconstructing not only the term but also the concept of disinformation is important. Identifying what separates disinformation from misreported news, satire and misinformation means there will less likely be confusion between these terms.

This section will now present definitions of the following terms to conclude the answer to RQ1 *What is disinformation?*:

- disinformation, n.
- disinform, v.
- misinformation, n.
- misinform, v.

7.5.1. Disinformation

Disinformation is:

- a. A disinforming news artefact.
- b. Intentionally factually incorrect news that is published to deceive and mislead its reader.
- c. A term used to dismiss counter attitudinal news stories.

Sense A is the ‘smallest’ meaning of disinformation, i.e. a single news item that seeks to disinform its reader. The term ‘artefact’ is used instead of story as this can be a sole headline, a screenshot, an audio recording, a short form video, etc. This allows for flexibility for what is doing the disinforming and is mode agnostic, following on from the qualitative analysis findings that found varied use of tokens such as ‘information’, ‘news’, ‘stories’ and ‘content’.

Sense B can be broken down into three components: (1) intention; (2) veracity; (3) deception. As discussed previously, these each affect whether a news artefact can be classified as

disinformation. This first component, ‘intentionally’, separates disinformation from misreported news. This second component, ‘factually incorrect’, distinguishes disinformation from legitimate news. The third component, ‘deceive and mislead’, separates disinformation from satire, which does not intend to deceive.

Sense C recognises the pejoration of the term disinformation to be used in a comparable way to ‘fake news’, i.e. as a way to critique and dismiss messages that the speaker does not agree with. See [Section 8.2.1](#) for examples of this in the Twitter data.

To disinform:

the use of intentionally factually incorrect news to deceive and mislead

[OR]

the deliberate use of factually incorrect news to deceive and mislead for financial, political, hostile, or other purposes

While disinformation refers to a deceptive news artefact (i.e. a news story), the verb ‘disinform’ refers to the process and context of disinformation. The first half of the definition, ‘the use of intentionally factually incorrect news’, mimics the language from the definition for disinformation. The second half, ‘for profit, political, hostile, or other purposes’, details potential motivation for the production and dissemination of disinformation while not restricting these to a single reason.

7.5.2. Misinformation

Misinformation is:

factually incorrect news that is published without intention to deceive and mislead

Misinformation has the potential to mislead and deceive its readers but does not have the goal of doing this. While misinformation does not aim to mislead, it still has the ability to do so.

To misinform:

to unknowingly give someone false information

When someone misinforms, there has been a successful deception because the reader does not know it is false. Misinformation is usually found with people sharing false content unknowingly.

7.6. Conclusion

The purpose of this chapter was to explore what terms such as ‘disinformation’, ‘misinformation’ and ‘fake news’ mean by exploring their etymologies, investigating their use in historical corpora over the years, carrying out contemporary analysis of their use, and understanding associated concepts – all supported by using real-world examples of each.

Principal among the findings from this chapter is simply that disinformation, and its history, is very complex. Historical analysis shows that the term ‘false news’ is the earliest iteration of reference to disinformation and first appears in 1527, with explicit reference to written false news in 1672. The term ‘false news’ predates ‘misinformation’ which first appears as the noun ‘misinformation’ in 1547, and the verb ‘misinform’ in 1584. The terms ‘disinformation’ and ‘fake news’ both appear at the same time during the late 19th and early 20th centuries, with the

earliest use of 'disinformation' in 1891 and earliest use of 'fake news' in 1893. This timeline highlights the evolving vocabulary surrounding the intentional and unintentional spread of false information and demonstrates how the concepts behind these terms have remained remarkably consistent, even as their use has shifted across different historical and technological contexts.

The terms misinformation and false news also occur with many other competing terms and concepts and this layered history highlights how these terms are dynamic, as well as how their meanings have been shaped by their sociopolitical contexts. By situating these terms within their historical and contemporary uses, we gain a clearer understanding of how they function as part of broader discursive contexts. This diachronic perspective allows us to better inform contemporary understandings of how these terms are used in context and their implications in policy, education, and public discussions.

The analysis of disinformation definitions brought up two sets of findings through quantitative and qualitative analysis. The recommendations from the quantitative findings addresses the need to clarify between news and information, and not to conflate complementary concepts such as satire with content intended to deceive. The recommendations from the qualitative analysis acknowledge the necessity to distinguish between the process of disinforming and artefacts of disinformation, the need for an agreed retronym (e.g. 'legitimate news'), and that there is utility in distinguishing between Disinformation and disinformation.

8. Discourses of Disinformation

It consists of creating media outlets that give 60 percent of their information in the interests of the enemy. But, having earned his trust in this way, they use the remaining 40 percent for extremely effective, thanks to this trust, disinformation.

Journalist Vladimir Yakovlev on the ‘60:40 principle’ used in Russian disinformation campaigns (Yakovlev, 2015)

This chapter carries out in-depth, qualitative analysis of the keywords that are overrepresented in the Disinformation Corpus when the Misinformation Corpus is used as the comparator reference corpus. As detailed in [Chapter 6](#), there were several codes that captured keywords identified in the Disinformation Corpus when compared with the Misinformation Corpus, and some of these will be discussed here, namely:

- Actor – Country
- Operations – Implementation
- Warfare and defence

Limitations of space restrict me from discussing all the keyword groupings so I focus on these three as groupings that offer feasible and valuable scope; namely they are the largest sub-codes for the parent codes *Actor*, *Operations*, and *Other*, respectively. First, I will provide a comparison of the keyword results.

8.1. Comparison of Results

Table 55 below shows a comparison of proportions of each code between the Disinformation Corpus and Misinformation Corpus – emboldened cells represent the higher of the two values. The results in *Table 55* further complement the comparative nature of the keyness analysis to understand not just which keywords, but which themes, are overrepresented in a certain corpus.

Table 55 Comparison of Disinformation Corpus and Misinformation Corpus keywords

Code	Sub-code	Disinformation	Parent%	Misinformation	Parent%
Actor	Country	13.6%	35.9%	5.7%	15%
	Entity	1.1%		2.6%	
	Government	3.9%		1.6%	
	Group	4.9%		0%	
	Individual	12.5%		5.1%	
Operations	Implementation	10.6%	20.7%	2.4%	29.6%
	Means	0.00%		4.1%	
	Effects	6%		9.5%	
	Response	2.4%		13.2%	
	Characteristics	1.7%		0%	
Medical	General	0.1%	0.1%	15.8%	19.3%
	Vaccines	0%		3.3%	

	COVID-19	0%		0.2%	
Specific Reference	Story	4.9%	22.6%	3.5%	16.4%
	Previous or current affairs	3.9%		2.8%	
	Publisher	3.4%		2.2%	
	User or hashtag	10.4%		7.9%	
Features of disinformation	Synonym	1.3%	6%	5.1%	5.1%
	News practices	4.7%		0%	
Miscellaneous	Research	0%	NA	2.4%	NA
	Technology	1.6%		1%	
	Emotion and affect	0.6%		1.4%	
	Warfare and defense	2%		0%	
Infrequent	Infrequent	10.4%	NA	10.1%	NA

In the parent code *Actor*, all subcodes besides *Entity* are more frequent in the Disinformation Corpus than the Misinformation Corpus. In the Disinformation Corpus, the *Actor* code comprises 35.91% of all keywords, while in the Misinformation Corpus this is 15.01%. This suggests an actor-focused discourse in the disinformation discussions.

The parent code *Operations* offers a slightly more mixed picture, with the sub-codes *Implementation* and *Characteristics* more common in the Disinformation Corpus, but *Means*, *Effects*, and *Response* more frequent in the Misinformation Corpus. These findings suggest that while the Disinformation Corpus is mainly concerned with the how disinformation is carried out, the Misinformation Corpus is more concerned with the specific means of its spread, and the consequent effects and countermeasures. Overall, *Operations* accounts for 20.94% of disinformation keywords, and 29.61% of misinformation keywords.

The *Medical* parent code provides the starkest contrast between the two corpora. In the Disinformation Corpus, just one subcode (*General*) is represented and amounts to 0.14% of keywords. In the Misinformation Corpus, the subcodes *General*, *Vaccine* and *COVID-19* capture 19.27% of keywords. It is clear from these results that discussions of misinformation contain much more reference to medical and health topics than discussions of disinformation on Twitter.

Items that pertain to a *Specific Reference* were more common in the Disinformation Corpus than the Misinformation Corpus. The distribution of keywords in this code across corpora, however, was much more even compared with the distribution of other keyword categories. Still, keywords coded as *Specific Reference* were more frequent in the disinformation (22.6%) corpus than the misinformation (16.43%) corpus. This includes tokens such as references to a Twitter user (e.g. [@RonJohnsonWI]) or a news publisher (e.g. RSF [Reporters Without Borders]) and supplements the *Actor* code in demonstrating a preference for naming and identifying things.

In the parent code *Features of disinformation*, (near-)synonyms and complementary concepts of false content were more common in the Misinformation Corpus, while keywords in the *News practices* theme were more frequent in the disinformation discussions.

Keywords in the *Research* code were absent in the Disinformation Corpus, but comprised 2.43% of keywords in the Misinformation Corpus. Keywords in the *Emotion and affect* theme were more common in the Misinformation Corpus (1.42%) than the Disinformation Corpus (0.57%). Conversely, *Warfare and defense* keywords were found in the Disinformation Corpus (comprising 2% of keywords) but not in the Misinformation Corpus. Terms in the *Technology* code were also used more often, although to a lesser degree (1.57% vs 1.01%).

While the code *Actors* includes entities, groups, individuals and countries, keywords denoting personal characteristics are coded as *Operations – Effects*. This is because it is important to disentangle two types of disinformation targets: those targeted for (geo)political reasons and those targeted on the basis of discrimination. For example, an influential figure – as illustrated by the keyword ‘Biden’ – being targeted by disinformation represents a very different issue to the invocation of a demographic, as indicated by the keyword ‘trans’.

8.2. Actor – Country

As detailed above, the single biggest code in the Disinformation Corpus consists of keywords referring to a country, state, region or other geographic area, including adjectives and demonyms. [Appendix G](#) shows the keywords belonging to this code.

A qualitative, manual analysis of concordance lines shows the items are typically used in one of two main ways: (1) disinformation originating from the area; (2) disinformation affecting the area. Examples 56.1 – 56.5 below demonstrate this. The following sections will explore the keywords falling into these categories in further detail.

Table 56 Examples of disinformation originating from/affecting area

Example	File	Use	Type
56.1	2012_07	Front lines of the Information War: Debunking Azerbaijani disinformation	disinformation originating from the area
56.2	2014_06	Russia has a special operation of the disinformation war	disinformation originating from the area
56.3	2016_08	China begins disinformation campaign in post south-China sea verdict	disinformation originating from the area
56.4	2012_11	sure is alot of disinformation targeting Indigenous Peoples in Brazil these days	disinformation affecting the area
56.5	2021_10	Since Facebook is down and we’re all here, let’s talk about the spread of disinformation—and how it’s affecting Quebec	disinformation affecting the area
56.5	2021_09	Twitter has suspended shadowy accounts found to have been hired for harassment and disinformation campaigns in Kenya according to a @mozilla investigation by @NationAfrica	disinformation affecting the area

As Hameleers (2023) notes, despite the popularity of the term ‘disinformation’, the literature currently lacks an “integrative conceptualization that connects the actors, intentions and techniques underlying deceptive information” (p.1). Further, it is important to explore the roles that are evidenced in the corpus to allow for an understanding of disinformation that focuses not only on the parties carrying out disinformation but also those “who historically and currently bear the brunt of being targeted and oppressed by mis- and disinformation” (Kuo & Marwick, 2021). Such an integrative definition (i.e. one that includes understandings of the producers and

receivers of disinformation) allows us to better approach the study and responds to disinformation by highlighting hereto underrepresented components of this phenomenon. The Disinformation Corpus refers to actors more often than the Misinformation Corpus, and within this is reference to several entities as shown in *Table 56* above. The following sections will explore these actors in more detail.

8.2.1. Disinformation Sources

One way to identify who is being held responsible for the spread of disinformation is to look at words in the Actor_Country code that are tagged as adjectives (see [section 5.3.1](#) for a discussion of POS tagging). The top three most frequent country adjectives in the code are ‘Russian’, ‘Chinese’ and ‘Iranian’. However, as these words can also be used as nouns in the form of demonyms – that is, words that establish “a relationship with a named geopolitical entity” (Coates, 2021, p. 13) – each word was filtered so only instances tagged as adjectives (‘JJ’) were included. Given the focus of the present analysis is sources of disinformation, results for bigrams, ‘Russian disinformation’, ‘Chinese disinformation’, ‘Iranian disinformation’ are shown in *Table 57*.

Table 57 Occurrences of [country adjective] + ‘disinformation’ in the Disinformation Corpus

Query	Raw frequency (per 10,000)	Texts
Russian disinformation	8579 (15.05)	93/120 (78%)
Chinese disinformation	289 (0.51)	34/120 (28%)
Iranian disinformation	196 (0.34)	32/120 (27%)

There are also other ways the same sentiment in these bigrams can be presented, for example through the possessive form ‘Russia’s disinformation’ or with an additional noun after the adjective such as ‘Chinese state disinformation’. These terms were also searched in order to offer a more complete picture, but the outcome was that they are much less frequent:

Table 58 Alternative queries to adjectival country bigrams

Query	Raw frequency (per 10,000)	Texts
Russia’s disinformation	122 (0.21)	39/120 (33%)
China’s disinformation	82 (0.14)	13/120 (11%)
Iran’s disinformation	8 (0.01)	5/120 (4%)
Russian state disinformation	7 (0.01)	7/120 (6%)
Chinese state disinformation	1 (0.002)	1/120 (1%)
Iranian state disinformation	2 (0.004)	2/120 (2%)

By far the most talked about source of disinformation is Russia. This is perhaps unsurprising given many high-profile public reports, the media coverage and reports of Russian-produced disinformation over recent years (Bennett & Livingston, 2018; Jankowicz, 2020; Rid, 2020). By contrast, China occurs considerably less frequently in the Disinformation Corpus. This may be somewhat surprising, given the arguments China uses disinformation as a key strategy for furthering its global geopolitical objectives (Beskow & Carley, 2020; Kurlantzick, 2022). Yet, in the Disinformation Corpus it is given considerably less attention, as with disinformation from Iran.

These figures show that Russia is viewed as the biggest source of disinformation in the corpus, followed by China and Iran to a much lesser extent. A point to reiterate here is that these results are talking about perceptions, which may not always accord with reality – and the dominant perception in the Disinformation Corpus is that Russia is the largest source of disinformation.

Distribution over time of occurrences of each bigram in *Table 58* shows varied patterns of usage – these are displayed over time in *Figure 33*.

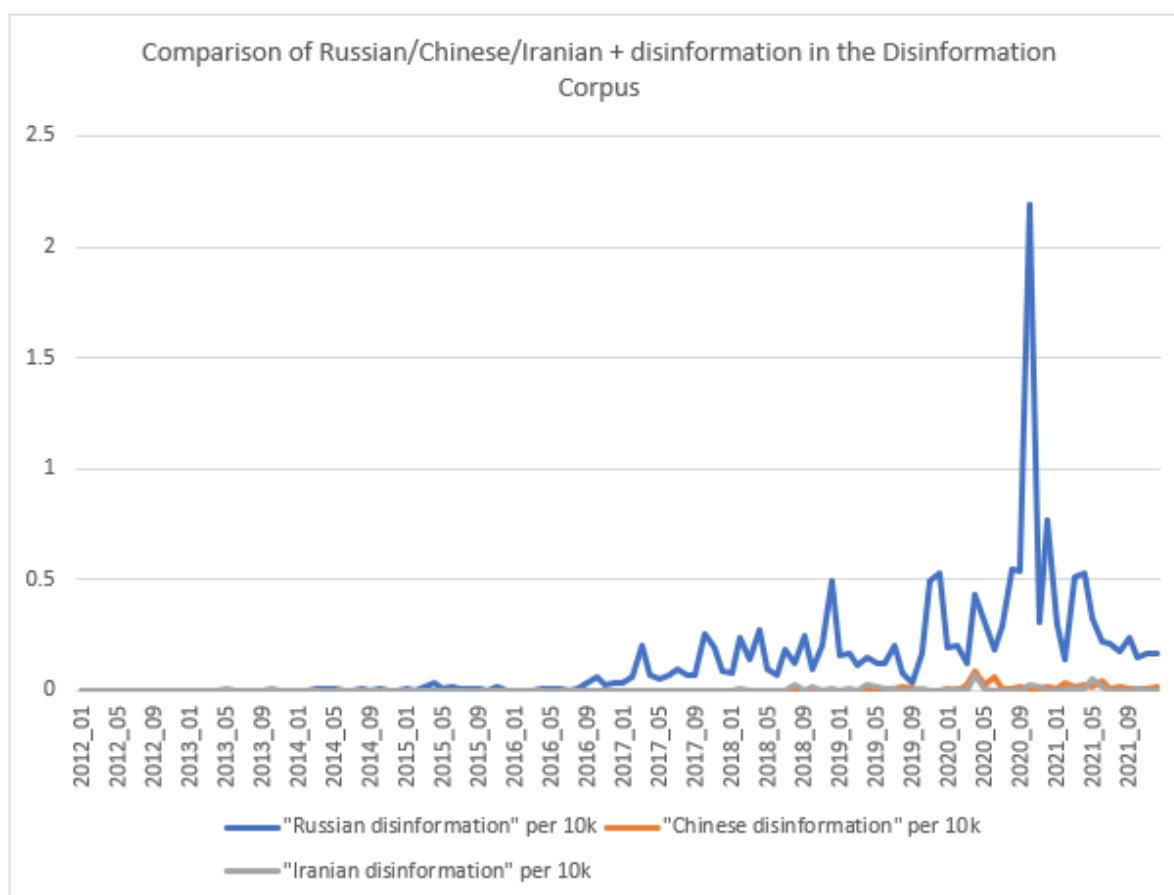


Figure 33 Comparison of Russian/Chinese/Iranian + disinformation in the Disinformation Corpus

In all three cases, use peaks during 2020. For 'Chinese' and 'Iranian' this is in April, and for 'Russian' it is October. These peaks can be matched to real-world events. In April 2020, a fire at one of Iran's main nuclear fuel enrichment sites reignited discussions of the Iran nuclear deal (Fassihi et al., 2020), while at the same time the ruling party of China was accused of covering up the origins of COVID-19 (Kuo, 2020). Later in October 2020, the European Council sanctioned six Russian individuals and one entity in the case of the state-backed poisoning of the Russian political dissident Alexei Navalny (European Council, 2023). The combined graph (*Figure 33*) shows the extent to which mentions of 'Russian disinformation' dominate discussions, with 'Chinese' and 'Iranian' disinformation largely relegated to a flatline in comparison.

Interestingly, discussions of 'Chinese' and 'Iranian' disinformation are often positioned relative to 'Russian' disinformation, as shown in tweets taken from the peak periods in *Table 59* below.

Table 59 Use of ‘Chinese’ and ‘Iranian’ alongside ‘Russian’ during peak periods of usage

Example	Period	Tweet
59.1	2020_04	State report: Russian , Chinese and Iranian disinformation narratives echo one another. The three governments are pushing a host of matching messages, including that the novel #coronavirus is an American bioweapon. #CCP #Russia #Iran #Propaganda #COVID19
59.2	2020_04	Chinese , Russian & Iranian “disinformation” isn’t the reason America looks like a failed state. The failure of American governance is the reason we look like a failed state. A healthy democracy would be capable of introspection. But we are neither healthy nor a real democracy.
59.3	2020_04	Meh. I’m not convinced. What I would put money on would be Russian and Chinese disinformation being spread around the web in an increasingly effective campaign to destabilize the United States and cripple it’s infrastructure, paving the way for those countries to make profits.
59.4	2020_04	They’re so over Russian disinformation. At CNN, it’s now Chinese disinformation.

In these cases, where two or more country adjectives co-occur, it appears that Russian disinformation is seen as the standard for comparison. This pattern is not exclusive to the period in which the occurrence of these terms peaked. The following values, indicating the number of times ‘Russian’, ‘Chinese’ and ‘Iranian’ [+‘disinformation’] occur independently or together, suggests that this happens elsewhere in the corpus:

- Of the 196 occurrences of ‘Iranian disinformation’, 31% (61) occur in the same tweet as ‘Russian’ or ‘Chinese’.
- Of the 289 occurrences of ‘Chinese disinformation’, 8% (23) occur in the same tweet as ‘Iranian’ or ‘Russian’.
- Of the 8579 occurrences of ‘Russian disinformation’, 0.5% (41) occur in the same tweet as ‘Iranian’ or ‘Chinese’.

That ‘Chinese’ and ‘Iranian’ co-occur much more with the other demonyms than ‘Russian’ does with either of the two demonyms adds evidence to the earlier claim that Russian disinformation tends to be seen as the prototypical form of disinformation. Similarly, ‘Russian’ disinformation appears independently much more frequently than independent instances of ‘Chinese disinformation’ and ‘Iranian disinformation’. It should be noted that given the disparity in raw frequencies for each term, there simply isn’t enough instances for ‘Chinese disinformation’ or ‘Iranian disinformation’ to co-occur that often with ‘Russian disinformation’.

Given that Russia is said to play such a significant role in global information operations, this apparent dominance makes sense. Martin et al. (2019, p. 16) report that, in 53 foreign influence operations in 24 countries identified between 2013-18, Russia was responsible for 72% of these with “China, Iran, and Saudi Arabia accounting for most of the remainder”. Similarly, a Google

Trends graph shows that interest over time in Russian disinformation has consistently dominated that of Chinese and Iranian¹¹.

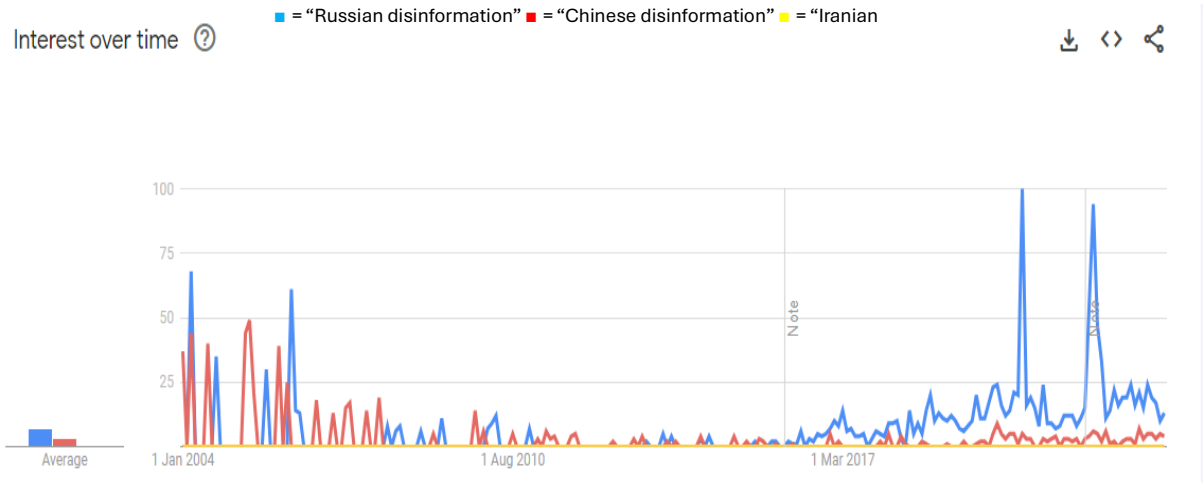


Figure 34 Google Trends results showing Google query interest in three terms

If Russia is the standard for disinformation against which other countries’ information operations are framed, then individuals are encouraged to view information operations through a lens of Russian disinformation. This perspective encompasses multiple aspects of Russia's information operations, including its methods, objectives, and outcomes, and is based on what has been reported – in media reports and wider online discourse. Ultimately, individuals are likely to overextend such perceptions - whether they are in fact accurate or not - to understand information operations and active measures from other groups and states. Given there has been evidence of (dis)information operations in at least 70 countries worldwide (Bradshaw & Howard, 2019), and that all of these have their own nuances, this presents a considerable oversimplification.

When we look at uses of ‘Russian disinformation’ there is a balance of a) Russia being the party spreading the disinformation (examples 60.1-60.3), and b) other parties spreading Russian disinformation (example 60.4-60.6). In this sense, while the creator of the disinformation is consistently Russia[n], those responsible for its dissemination vary.

Table 60 Uses of 'Russian disinformation'

Example	File	
60.1	2020_10	And republiCONS & #MAGAMorons like YOU rely on (& spread) Russian disinformation & propaganda. I do read and seek the truth from multiple news sources. You only believe what Q & Faux “News” tell you. You’re a brainwashed member of #Cult45 who is suffering from Fox News Brain Rot!
60.2	2020_10	Not news. Look, I have no doubt you love America but what you're doing is hurting her. The GOP and now you are disseminating Russian disinformation to elect trump. I don't want to get into discussion with you but please know that time will tell and you'll see you've been conned

¹¹ ‘Interest over time’ is defined by Google Trends (2025) as: “Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means that there was not enough data for this term.”

60.3	2020_10	Matt Gaetz, a US Congressman, is spreading Russian disinformation via @Twitter thread because @TwitterSafety was blocking the spread of disinformation. He knows he's spreading Russia's lies that were designed to swing an American election in Trump's favor. This should be NEWS.
60.4	2020_10	Not even the news shows on Foxnews want to cover because it has all hallmarks of a Russian disinformation campaign. Feel free to talk about the fabrication...
60.5	2020_10	News organizations must obtain valid confirmation before publishing stories (positive or negative). These journalistic standards are applied to all at NPR (as they are at other major news outlets). The H. Biden story is Russian disinformation , debunked over and over.
60.6	2020_10	The only 'Russian connections' to date have been Hillary → Fusion GPS → Steele → Igor Danckenko (Russian spy investigated by FBI) you've been duped by Russian disinformation .

This shows that when it comes to blame and responsibility, i.e. for the 'dis' in disinformation, it is not always a clear cut picture. Even in instances that include a reference to 'Russian', Russia is not always the party held directly responsible. In 60.1 and 60.2, a specific political party is held responsible for spreading Russian disinformation, while in 56.3 this is a single politician. In 60.4-60.6 rather than a third party spreading the content, the tweets discuss how certain content has the characteristics of 'Russian disinformation', and how people can fall victim to this. These findings are largely concentrated around the Hunter Biden laptop conspiracy (see this Politico [explainer](#)).

Within the data, people also object to the term 'Russian disinformation'. In these instances, users may perceive that the term *Russian disinformation* is being used similarly to 'fake news' as a means of dismissing content that is counter attitudinal (Axt et al., 2020). In this use, the term acts as a dismissive (not to be confused with dismissals cf. Culpeper (2011)) which is used to indicate something is unworthy of serious consideration and/or to prevent a conversational topic from progressing further.

These are instances of what Lifton (1989) calls "thought terminating clichés":

The most far-reaching and complex of human problems are compressed into brief, highly reductive, definitive-sounding phrases, easily memorized and easily expressed. These become the start and finish of any ideological analysis. In thought reform, for instance, the phrase "bourgeois mentality" is used to encompass and critically dismiss ordinarily troublesome concerns like the quest for individual expression, the exploration of alternative ideas, and the search for perspective and balance in political judgments. (p. 429)

These phrases or words act as a way to dismiss or write off arguments, speakers or topics. Similarly, Hauswald (2023) refers to 'dismissive conversational exercitives', a "speech act that functions to exclude certain propositions from (or prevent their inclusion in) [...] a given conversational context" (p. 494). Other such as DeRose (2009) emphasise 'veto power' in conversations and Langton (2018, p. 145) refers to 'blocking' as a means to "disable, rather than refute, evil speech". Terms such as 'Russian disinformation' and 'fake news' are also very ideologically loaded and thus can be used as 'floating signifiers', words/phrases that index rich social and cultural histories without a necessarily fixed meaning (Laclau, 2005). Such terms can

be used as a means of “discrediting, attacking and delegitimising” ideas, people and institutions (Farkas & Schou, 2018, p. 298) and used as a ‘silencer’ of dissenting opinions (Lees, 2018).

Irrespective of the particular descriptive term, there is a clear function: the terms are used to dismiss something. However, what we observe in the corpus is not just the use of the phrase in this way, but also a metacommentary about how others use this term in this way to dismiss content (see *Table 61*).

Table 61 Metacommentary of the term 'Russian disinformation'

Example	File	Tweet
61.1	2020_10	Breaking news. There is no justice. Fairness is dead. You have entered the matrix where reality is manufactured. Good is bad, bad is good, and everything that exposes the Democrats is a Russian disinformation campaign, while everything that is made up about Trump is real. RIP USA
61.2	2020_10	That will be because the US regime's McCarthyist police/intelligence complex have just smeared it as a Russian disinformation site spreading "malign foreign influence."
61.3	2020_10	New rule: You only get to claim that news you don't like is " Russian disinformation " 3,500 times per year. You are over your limit.
61.4	2020_10	this assertion that the data on hunter biden's computer is " russian disinformation " is brazenly unsubstantiated. any news organization that repeats the assertion without immediately underlining the complete lack of supporting evidence does not respect its audience's intelligence.
61.5	2020_10	CEO of biden hunter company turning over documents of corruption on joe and hunter. You must be talking about CNN or MSNBC. They will do anything to call this a Russian disinformation hoax. This is on Fox news. ✓ your info again
61.6	2020_10	It's mostly just conservatives that have heard of the tape. Leftists have almost no chance of hearing about from almost any leftist news outlet to hear about it. And IF they do it's described as " Russian disinformation " propaganda. So again, they don't know it's real

In example 61.1, the user remarks that Democrats label any news they dislike as ‘Russian disinformation’, while in 61.2 the user criticises the government for using ‘Russian disinformation’ as a smear. In 61.3, the poster jokingly suggests a limit on the number of times people can claim something is ‘Russian disinformation’. In both 61.3 and 61.4 the presentation of “russian disinformation” in quote marks suggests sarcasm, as a way to indicate something they view as alleged or supposed (or “so-called”), but not the actual reality (Haiman, 1990; Predelli, 2003; Nacey, 2012; D’Arcey et al., 2019). Specifically, in example 61.3 they accuse another use of crying wolf over disinformation and extending the term too generously, while in 61.4 they deride the idea that something is Russian disinformation. In other words, they are mocking other’s use of the term ‘Russian disinformation’ as a means of discrediting news stories.

In some instances, users acknowledge that something may be ‘Russian disinformation’, but insist it is taken seriously regardless.

Table 62 Concessive use of 'Russian disinformation'

Example	File	Tweet
62.1	2020_10	The media in his country is now controlled by the Democratic Party. Even if you think it may be Russian disinformation why isn't a Presidential candidates possible corruption newsworthy. If this were Trump it would be the main story on all news outlets. The free prrrss is no more

In the tweet in [Table 62](#), the user uses a concessive construction, a form used in “indicating something conceded but not detracting from what is said” (Matthews, 2014, np). Here, the concessive ‘even if’ is used to indicate that the outcome is the same (i.e. criticism of the Democratic Party), but that there is some issue with original message (that it may be Russian disinformation). In other words, ‘even if’ signals that “the answer does not affect the truth of the main clause” (Harris, 1988, p. 74), in this case that the Democratic Party is at fault.

This tweet also demonstrates the pernicious effect of disinformation. The user is fully aware that the content they are discussing may be disinformation, but nonetheless calls for action off the back of it – namely for a presidential candidate to be investigated for corruption. This tweet is an example of how disinformation, even when it is not necessarily treated as fact, can influence belief. Writing about COVID-19 vaccine misinformation received by Gypsy, Roma and Traveller organisations, Foster (2021) notes how the phrase “No smoke without fire” was used several times when the misinformation was reported to the Advisory Council for the Education of Romany and other Travellers (ACERT). This belief that there is always some reason for a rumour, even if the given manifestation of the rumour at hand is false, is particularly damaging as it promotes and prolongs the conspiratorial belief.

As Snegovaya (2015b) notes, this is an intentional outcome of Russian information operations, and Russian state produced disinformation is designed to have a “cumulative effect on public perceptions” even if such stories are eventually debunked (p. 6). There is similarly a long history of this, and as Hoyle and Šlerka (2024) note, the KGB also took “longitudinal and cumulative approaches to shaping public opinion” (p. 10). Similarly, leaked KGB documents from the KGB-era provided by the defector Soviet Union archivist Vasili Mitrokhin, reveal how “Disinformation is regarded as one of the instruments of CPSU policy; it is an integral, indispensable and secret element of intelligence work” (Mitrokhin, 2002, p. 1). One objective of Russian information operations is to sow doubt (Weisburd et al., 2016; Moral, 2022) and this can be done by generating speculation and uncertainty around political, economic, and socio-cultural topics. In other words, Russian disinformation, as example 58.1, shows above does not actually need to be believed, it just needs to be present enough in people’s minds to sow doubt and contribute to a cumulative discord.

There is a link here between discourse theory and disinformation theory. In [Section 2.1](#), I wrote that discourse is cumulative and that multiple representations contribute to the formation of discourses. At the same time, here we have discussions of disinformation that discuss how it is designed to be cumulative and seeks to shape public opinion by building representations and narratives over time. This demonstrates the utility of viewing disinformation and meta discussions of disinformation through a discourse level.

8.2.2. Disinformation Targets

While the above section has discussed how Disinformation Sources are discussed in the data, we can also explore how Disinformation Targets are represented in the corpus. For example, during the discussion above we see the following in Example 56.4 (*Table 56*):

sure is alot of disinformation targeting Indigenous Peoples in Brazil these days (2012_11)

In this example, while no source is mentioned, a recipient of this disinformation is referenced with disinformation framed as *targeting* them. A cursory search of ‘targeting’ shows various similar uses, as shown in *Table 63*.

Table 63 Cursory search of 'targeting' in the Disinformation Corpus

Example	File	Use
63.1	2016_10	Dr M. Papadopoulos, recently talked to the BBC News about the west’s massive disinformation campaign targeting Syria (2016_10)
63.2	2019_10	Facebook discovers Russian disinformation campaign targeting Africa and takes down accounts linked to Vladimir Putin (2019_10)
63.3	2021_11	In addition to Russian military buildup at Ukraine's borders, there was an 'exponential rise in disinformation targeting Kyiv and[...] Moscow has recruited agents to try and sow destabilization inside Ukraine', Bloomberg source said (2021_11)

While tokens such as ‘Syria’ belong to the Actor_Country code, words such as ‘target’ (v.) belong to the Operations_Implementation code. This is because the former code accounts for geographic terms, while the latter accounts for how disinformation is executed and carried out. In other words, identifying disinformation targets requires cross-category analysis. To carry out this cross-category analysis, all relevant keywords in Operations_Implementation code that pertain to targeting others with disinformation were identified. These are presented, alongside their frequencies, in *Table 64*.

Table 64 Keywords in Operations_Implementation that refer to targeting

Token	Disinformation frequency (per 10,000)	Misinformation frequency (per 10,000)
Targeting	963 (1.69)	425 (0.58)
Targeted	1,116 (1.96)	596 (0.81)
Influence	1,485 (2.61)	804 (1.09)
Aimed	566 (0.99)	349 (0.47)
Target	977 (1.71)	627 (0.85)

This approach, drawing on keywords from both Actor_Country and Operations_Implementation, demonstrates the intersectionality of the codes. That both Actor_Country and Operations_Implementation codes are used often in the same tweets shows the co-construction and overlapping of discourses in the data. Given the purpose was to identify objects of the verbs above, I identified instances where Actor_Country keywords followed one of the targeting verbs mentioned in *Table 64* within a tweet boundary. The number of the postpositional Actor_Country items was then counted to identify the most frequent items.

28 items (accounting for 1163 occurrences) were identified. In other words, 28/95 Actor_Country keywords appear after one of the words in the list above. The tokens chosen below for detailed, qualitative analysis are the ones that were most overrepresented in the Actor_Country sub-corpus (see *Table 65*). To calculate this, the frequency of the Actor_Country term following targeting|targeted|influence|aimed|target (column 2) was calculated as a percentage of the total word's frequency in the whole corpus (column 3) and expressed as a percentage (column 4). This showed which words had a greater proportion of use alongside the query words, i.e. which words were more heavily concentrated around targeting-related words. The top 5 were: Europe, EU, UN, Hong Kong, Western.

Table 65 Actor_Country keywords that follow targeting words

Actor_Country Keyword	Frequency alongside	Frequency in Corpus	% of total
Hong Kong (Hong Kong; Hongkong; HK)	50	633	7.60
Europe	63	869	7.25
EU	171	3,566	4.80
Western	42	882	4.76
UN	30	2,262	1.33

Interestingly, four of these keywords focus on Western regions and inter-country organisations (the UN is headquartered in New York). The fifth is Hong Kong, and though this is physically located in Asia, it was a British territory until 1997 and still maintains a unique relationship with Britain (Benson, 2021).

This finding complements the earlier discussion that Russia is often positioned as the main perpetrator of disinformation in that Western nations and organisations are characterised as the recipients or the victims of this Russian, Chinese, and Iranian disinformation. In other words, while a wide range of nations, regions, and areas are discussed as victims of this information, the most common are large Western ones. There are various factors that could determine this observation. First, while English is spoken in every country across the world it could be that looking at English-language only data creates a bias toward areas where English is particularly dominant. Similarly, Twitter's demography is reflected here, because of the top 5 countries for largest audiences on Twitter, the US ranks 1st and the UK ranks 5th (Statista, 2024b). This membership likely entails Western interests. Furthermore, it is well established that Russia's main adversaries are NATO and the EU (Moncada & García, 2019), and so it follows that where Russia is discussed, so too are these main adversaries. It is hard to tell whether one is a consequence of the other (i.e. people discuss Russia and therefore EU etc.) or whether these discourses operate in tandem.

What we see forming here is a dominant discourse. Already in the two codes discussed so far, it can be seen that representations of disinformation on Twitter focus particularly on Russia producing disinformation, and on Russian targets of disinformation. This dominant discourse will in part have been influenced by dominant political and media discourses and may in part be reproductions of others' discourses. For example, Baumann (2020) notes that in German newspapers, contemporary discourses of disinformation consistently frame Russia as the "offensive assailant that threatens a defensive West" (p. 293) and that Russia is constantly framed as a manipulator of information (ibid.). Similarly, Farkas (2023b) notes that in Danish

media, the “threat of fake news is both implicitly and explicitly assumed to be de facto foreign” (Farkas, 2023b, p. np). This, in tandem with the present findings, suggests that positioning of a foreign power as the source of a disinformation threat is the normative, dominant discourse.

8.3. Operations – Implementation

Looking at the implementation keywords allows us to get an insight into what people on Twitter think the objectives and aims of disinformation campaigns are, and to identify lay understandings of how disinformation is carried out.

Of the 74 keywords in the Operations_Implementation code, 11 make up over two thirds (67.03%, 34,994) of all occurrences. These are:

campaign|campaigns|fed|intelligence|influence|sponsored|tactics|targeted|operation|coordinated

While some of these tokens have been discussed above in relation to countries, and specifically Russia spreading disinformation, they warrant independent close investigation to understand how the implementation of disinformation is understood beyond just country actors being responsible.

The following analysis will go through these 11 keywords, grouping them into similar themes derived from how they are used in the data. I have, however, made the decision not to treat these keywords as mutually exclusive; for example the keyword ‘influence’ is discussed in different sections as it can contribute to different discourses, either in tandem with other keywords or on its own.

8.3.1 How are disinformation campaigns described?

Out of the 165,893 instances of ‘disinformation’ in the corpus, 16,004 (9.65%) appear as the bigram ‘disinformation campaign/s’ (see *Table 66*). This is the most frequent content word bigram, and the frequency of ‘campaign’ and ‘campaigns’ combined makes it the most common bigram.

Table 66 Most frequent bigrams of ‘disinformation’ in the Disinformation Corpus

Rank	Bigram	Frequency (per 10,000)
1	Disinformation and	13,445 (24.04)
2	Disinformation campaign	12,219 (21.84)
3	Disinformation is	4,925 (8.80)
4	Disinformation about	3,982 (7.12)
5	Disinformation on	3,823 (6.83)
6	Disinformation campaigns	3,785 (6.77)
7	Disinformation to	3,344 (5.98)
8	Disinformation in	3,171 (5.67)
9	Disinformation the	2,809 (5.02)
10	Disinformation &	2,627 (4.70)

To understand how people discuss and describe these campaigns, collocates for the bigrams (both singular ‘disinformation campaign’ and plural ‘disinformation campaigns’) were generated. The collocate parameters were a window of 5L5R and high thresholds (MI3 >15,

frequency >20). This returned 478 collocates (occurring 15,984 times). These demonstrated a range of ways in which people discuss ‘disinformation campaign/s’.

Around 5% (4.66%, freq.=745) of collocates refer to the scale of the campaign/s (see *Table 67*).

Table 67 Collocation of 'disinformation campaign/s' denoting size

Rank as collocate	Position	Collocate	MI3	Freq. of collocate	Freq. in corpus
15	L	massive	24.14089	411	1306
59	L	vast	20.7237	121	356
200	L	huge	17.56153	81	956
374	L	big	15.86437	77	2663
396	L	biggest	15.68495	55	1099

When discussing size, people often refer to the aftermath of such scaled up disinformation operations and users comment on the effects and outcomes of the campaign(s). In the examples below we see ‘massive’ and ‘vast’ campaigns as responsible for altering the political discourse (68.1), affecting voters’ decision making (68.2), and negatively impacting trust in the media (68.3).

Table 68 Concordances of size collocates

Example	File	Tweet
68.1	2018_04	Moscow thanks you for participating in the massive online disinformation campaign dedicated to making americans apathetic cynics who will let Trump and Fox News drive our political discourse.
68.2	2018_10	This vast disinformation campaign affected thousands of voters, along with Facebook & FOX news. People believed it. Now same people are insulted suggesting they were duped. Some still believe PizzaGate. Was there anyone in campaign who wasn't involved in a conspiracy in some way?
68.3	2019_10	There are still people, decent people, looking his tweets... it's really a testament to how vast their disinformation campaign is as long as people can be convinced to only trust 'conservative' news sources and that actual news sources are the enemy.

Interestingly, the superlative ‘biggest’ is used quite differently. We find a distinct pattern of tweets referring to the media as a whole, and unfavourably. The media (referring to established and heritage news outlets) is consistently labelled as the ‘biggest disinformation’ campaign. An array of reasons is given for these claims including being a propaganda arm of the government (69.1), deliberately overloading consumers with news (69.2) and concealing certain news stories (69.3).

Table 69 Uses of superlative 'biggest'

Example	File	Tweet
69.1	2020_12	@idiotJournos @markus @budderzbuddy @BRANDONHILTON @realDonaldTrump @RudyGiuliani We are in the midst of the biggest disinformation campaign in our history and the news cycle moves so fast that people can't even keep up. Exactly the mainstream media's intention imo

69.2	2020_12	Man stfu and never has a President been more disrespected by the people like you the MSM and the media has been behind the biggest disinformation campaign ever in this countrys history and these last few months going into overdrive with burying news from the american people .
69.3	2021_10	@MediaMattersZA @UNICEF The media is the biggest disinformation campaign. Its been used to spout government propaganda since radio during World War. Just look at the biggest shareholders of news institutions & you'll see why. Journalist integrity should be questioned, but never is.

These superlatives are examples of what Pomerantz (1986) refers to as ‘extreme case formulations’ (hereafter ECFs), which are used for various purposes, including to accuse, convince and complain (Pomerantz, 1986, p. 219). They can be used in situations where speakers “anticipate or expect their co-interactants to undermine their claims and when they are in adversarial situations” (Pomerantz, 1986, p. 222). Here, the claim that heritage, mainstream media are the ‘biggest’ examples of disinformation draws on a rich history in anti-establishment thinking and conspiratorial rhetoric (Chadha & Bhat, 2022). ECFs are used to “to legitimize a complaint and portray the complainable situation” (Pomerantz, 1986, p. 228) and here we see that they are being used to establish, amongst other things, how severe the claimed issues with mainstream media are and how it is a given that mainstream media are the worst disinformation producers. In regards to this latter point, the ECFs also act as a form of presuppositional violation - that is, they allow “the introduction of false information into discourse structures requiring true and shared information” (Rigotti, 2005, p. 72). In these cases, speakers treat a proposition as a given with total epistemic conviction, resulting in it appearing to be (an accepted) fact. These extreme case formulations also show that when people are discussing disinformation, they are prone to talking about it in intense or superlative terms.

8.3.2. What is being influenced?

‘Influence’ occurs 1,485 times in the corpus, used 982 times as a noun (66%) and 503 times as a verb (34%). In what follows, first the noun ‘influence’ is explored and then the verb ‘influence’ to understand how its use varies in different contexts.

8.3.2.1. *Influence, n.*

In 142 cases (14.5%) of ‘influence’ as a noun, the word is listed alongside other terms (this includes comma-separated lists). In 87 (61.2%) of these instances, the term ‘disinformation’ also occurs.

Table 70 Examples of complementary concepts of influence

Example	File	Tweet
70.1	2019_04	🤬 Cable news networks especially need to be scoured of the corruption, influence, propaganda, disinformation peddlers.
70.2	2019_05	Government announces a range of new measures to crack down on intimidation, influence and disinformation , and safeguard UK elections
70.3	2019_05	@SteveBakerHW So they will start in the House of Commons then. The epicentre of intimidation, influence and disinformation . More

		hypocrisy from those who claim to represent us and that is welcome news how? When MPs can ignore the ballot box I find this a tad disingenuous.
70.4	2020_07	The Bible - in this 24hr news cycle & social media driven age of disinformation/malign influence , it is the one place where you can find 100% truth, 100% peace, with a guaranteed 100% accuracy rate 100% of the time. #ReadYourBible #WhatdoesGodsay

There are multiple concepts at play here. First, influence is a key outcome and motivator of disinformation campaigns (Schia & Gjesvik, 2020) and it appears that the users in the corpus are keenly aware of this. Secondly, these lists help us to understand what people think the objectives of disinformation are and what characterises disinformation. In 70.1, disinformation is presented as synonymous with ‘corruption, influence, propaganda’ while in 70.2 and 70.3 it is linked to ‘intimidation’. In 70.4, disinformation is driven by ‘social media’ and is contrasted to the Bible, which is framed as the only reliable source of news reporting.

There are parallels here to the lists of complementary concepts to ‘false news’ discussed in RQ1 [Section 7.3.2.1](#). and the table below is a repeat of these results that show that the phrase ‘false news’ dates back to at least the early 16th century. Indeed, the terms are likely to date back much further than this; as Buringh and Van Zanden (2009) explain, literacy rates in Great Britain at the turn of the 16th century were less than 10% of the population, and as such, there was likely a delay in committing language that was being used (i.e., spoken) to a written form. Furthermore, these examples represent what is found in written texts that have survived.

There were several other terms that were used comparably to false news, examples of which are shown in Table 43.

Example	Year	Concordance
44.1	1548	might bring other to like mishap , and that all Vacaboundes , all lewd and light tale tellers , and seditious bearers of false news of the King 's Majesty
44.2	1684	Jealousies , Murmurings , Repinings , Libels , Licentious Discourses , false News , half Whispers , Disputing , Excusing , or Cavilling upon Directions
44.3	1686	seditious Libels , half whispers , false News , licentious discourses , jealousies , murmurings and repinings are forged

Consistent between the data from the 16th and 17th centuries and the Twitter data in [Table 70](#) are indications that disinformation is not necessarily seen as an outright, self-standing concept, but exists complementary to many other associated practices and concepts. Where in the 21st century it is influence and propaganda, in the older data it is licentious discourses and murmurings. This also shows how the representation of the harms disinformation can cause has changed – where once it was a form similar to gossip that could undermine the virtue of the king, it is now seen as a weapon that affects entire countries and their populations. This demonstrates the connections between disinformation and the broader sociopolitical and cultural dynamics it operates within, showing how disinformation, and discourse more broadly, are a product of social and institutional contexts (e.g. royal houses vs cyberwarfare). This overlapping terminology also underscores the evolving nature of disinformation as a concept, showing how it is embedded in context.

We are also reminded of the conceptually murkiness of disinformation – it is bound inexorably to other associated concepts such as propaganda and influence. These contribute to the repertoire of terms alongside ‘post-truth’ and ‘alternative facts’ that Farhall et al. (2019, p. 4354) assert contribute to “form[ing] a fake news discourse”. In discourse terms, we can consider this a repertoire: a “broadly discernible clusters of terms, descriptions and figures of speech often assembled around metaphors or vivid images” (Potter et al. (1990) p.212). I would argue that this is diachronic evidence for Foucault (1972)’s notion of discourse as a regulated practice (see [section 2.1.](#)) in action, in that people are (re)producing a discourse of influence to represent certain concepts like disinformation in a way that, over a centuries long period, consistently draws on other associated concepts.

Example 70.4 shows that ‘influence’ is modified with ‘malign’ and by looking at other modifiers of influence, a pattern emerges (see [Table 71](#)).

Table 71 Modifiers of ‘influence’

Example	File	Tweet
71.1	2018_09	@jmhansler #Denmark presents plan with 11 initiatives aimed at strengthening resilience against hostile foreign influence on elections & democracy. #DefendingDemocracy #disinformation #HybridWar #NatSec #DKpol @DanishMFA
71.2	2020_07	It cites “Russian state-owned international broadcasters such as RT and Sputnik” as tools of disinformation and malicious influence
71.3	2020_08	A parliamentary intelligence committee recently highlighted how President Vladimir Putin’s Russia wields malign influence inside the United Kingdom – and not just through disinformation and deadly spy-craft. https://lnkd.in/e9b_2fb

The use of negative modifiers suggests that influence is not seen as inherently negative, in the way that manipulation or coercion are negatively coded. For instance, the phrase ‘malign manipulation’ makes less sense as the latter word already has a negative connotation, whereas influence over others can be positive or negative, meaning it is modified to telegraph the negative aspect.

The use of these terms could tie in with the intentional nature of disinformation. That is to say, something that is unintentional (i.e. misinformation) is less likely to be labelled as ‘malign’ or ‘malicious’ as these terms imply a (malevolent) purpose. In other words, mistakes do not tend to be evil or aggressive. Spot checking just these three terms (‘malicious’, ‘malign’, ‘hostile’) across the Disinformation Corpus and Misinformation Corpus works to validate this finding: while in the Disinformation Corpus the terms occur 1.21 per 10,000 words, in the Misinformation Corpus they occur 0.55 times per 10,000 words. This reiterates that intention plays a big part in people’s understanding and use of ‘disinformation’.

[8.3.2.2. Influence, v.](#)

Looking at ‘influence’ as a verb directs us to the objects in the process and we see that users highlight various things that are being influenced (see [Table 72](#)).

Table 72 Uses of influence, v.

Example	File	Tweet
72.1	2018_03	Disinformation targeted at opposition audience is apparently a #CambridgeAnalytica standard ploy to influence elections . See Latvia: https://bloomberg.com/news/articles/2017-03-23/trump-data-gurus-leave-long-trail-of-subterfuge-dubious-dealing
72.2	2018_06	--SHUT IT DOWN . #Obamagate --SHAME on all Leftists that supports waste of TAXPAYERS \$\$\$ --CHINA is buying/investing BIG in U.S NEWS MEDIA to influence narrative by creating DISINFORMATION and pushing FAR LEFT agenda, Democrats keep Republicans busy with RUSSIA. Wake up people !
72.3	2019_03	The Incirlik disinformation campaign failed but demonstrates the unique way in which Russia can influence foreign audiences
72.4	2019_12	@bbclaurak here is evidence of a concerted, coordinated disinformation campaign to influence our election . Yesterday, deliberately or accidentally, you contributed to it. Time to make amends by publicising the way it is happening- this is news.

Something immediately noticeable here is that there is a split between the physical (e.g. elections) and the psychological/cognitive (e.g. opinions) being targeted. This is consistent with characterisations of information operations:

Per the United States Joint Chiefs of Staff (2014), HSIOs operate across three dimensions:

1. The Physical: the physical infrastructures and means by which information is disseminated.
2. The Informational: the data-centric dimension concerning how information itself is used and stored.
3. The Cognitive: the human-centric use of information in decision-making and other cognitive processes, including how humans process and respond to information.

(Christiansen et al., 2020, p. 159)

Examining ‘influence’ as a verb directs us to the objects in the process and we see that users highlight various things that are being influenced (see *Table 72*).

Table 72 above, it seems that users are also aware of these different aspects and that when ‘influence’ (v.) is used, it refers to both physical and mental processes. There is, however, an emphasis on cognitive aspects and disinformation targeting psychological processes including opinions, decision making, perceptions and behaviour. This can be seen in *Table 73*.

Table 73 Tweets concerning influence over thoughts and actions

Example	File	Tweet
73.1	2019_02	At every level of election infrastructure—voting machines and voter databases, campaign-level security, and online disinformation to influence voter perception —this is very, very bad news.

73.2	2021_02	It's very likely that many of these trolls, fakes news and propaganda are funded by Marcos and Duterte. Their power to spread disinformation and influence popular opinion is no joke.
73.3	2015_02	The lazy allow Fox News disinformation to influence their decision making and then they vote against their own best interests
73.4	2020_11	#Vaccines are a modern miracle that have prevented untold pain & suffering & death. The stewards of #disinformation rely on fear to influence the behavior of millions. May I refer you to #InformationWars by Richard Stengel of motivations to cause harm.

In examples 73.1 and 73.2 there is a focus on the mental processes that can be disrupted by disinformation, namely ‘opinions’ and ‘perception’. However, in the latter two examples (73.3 and 73.4), the focus is instead on actions, and how disinformation can affect ‘decision making’ and ‘behaviour’. In these examples disinformation is viewed as having a tangible and causative effect on people, whether this is at the individual level or at the population level. There are a range of topics discussed: 73.1 concerns electoral integrity and national security, 73.2 discusses government-backed disinformation in the Philippines, 73.3 discusses media influence and bias in the United States, and 73.4 discusses how disinformation undermines health initiatives.

Thus, disinformation is seen as capitalising on psychological vulnerabilities and can contribute to undermining trust in decision making. However, these tweets themselves may be doing harm, which begins to highlight another issue – one of exposure to the term ‘disinformation’.

There is a growing body of research demonstrating that exposure to disinformation, both the false content itself and also the commentary on disinformation, can lead to decreased trust, increased scepticism and uncertainty, and greater feelings of cynicism (Van Duyn & Collier, 2019; Jones-Jang et al., 2020; Ognyanova et al., 2020; Vaccari & Chadwick, 2020; Tandoc et al., 2021). The result is that “the social impact of fake news is not limited to its direct consequences of misinforming individuals, but also includes the potentially adverse effects of discussing fake news” (Tandoc et al., 2021, p. 783). This leads to an information environment where individuals can overextend their distrust in disinformation to all types of information, resulting in what Echterhoff et al. (2007) call the ‘tainted truth effect’, whereby prior warnings of disinformation can lead individuals to discredit truthful information. This contributes to a ‘lie bias’, the tendency to believe that statements are deceptive rather than truthful (Fawcett, 2014).

What this means is that the discussions in example 73.1-73.4 above on disinformation and its impacts could actually be having a secondary effect on people’s cognitive perceptions of disinformation and truth, simply by highlighting the term ‘disinformation’. The outcome of this that we need to carefully balance informing people about disinformation without inundating them and potentially doing more harm than good.

8.4. Warfare and Defence

Terms relating to national security, warfare and combat help reveal what Twitter users deem as some of the most significant effects of disinformation. Words interpreted as referencing ‘disinformation’ and ‘misinformation’ through a lens of war and conflict were coded as Warfare and Defence, which is subsumed into the ‘Misc.’ parent category. There are more occurrences of

these keywords in the Disinformation Corpus. The list of keywords in this category from the Disinformation Corpus keyword list are shown in *Table 74* below:

Table 74 Keywords in the 'Warfare and defence' code

Token	Log ratio	Disinformation freq. (per 10,000)	Misinformation freq. per (10,000)
Spies	2.55	177 (0.32)	39 (0.05)
Spy	2.41	521 (0.91)	127 (0.17)
Spying	2.23	182 (0.32)	50 (0.07)
Weaponized	2.16	511 (0.90)	148 (0.20)
Warfare	2.13	789 (1.38)	233 (0.32)
Agents	2.02	639 (1.12)	204 (0.28)
Soldier	1.99	83 (0.15)	27 (0.04)
Cybersecurity	1.54	679 (1.19)	27 (0.41)
Adversaries	1.29	166 (0.29)	88 (0.12)
Bases	1.21	190 (0.33)	106 (0.14)
Security	1.19	1863 (3.27)	1052 (1.43)
Military	1.13	1325 (2.32)	784 (1.06)
Weapon	1.01	383 (0.67)	245 (0.33)
War	1.00	2894 (5.08)	1863 (2.53)

Not all these keywords are discussed in the ensuing section due to space limitations. I have, however, identified smaller sub-themes that allow me to provide some coverage of keywords. The first of these themes refers to spycraft ('spy', 'spies' and 'spying'), the second references security ('security', 'cybersecurity'), and the final theme discusses weapons ('weapon').

8.4.1. Spy, spies and spying

The top three overused terms in the Warfare and Defence code all relate to covert government operations: 'spies' (LR:2.55), 'spy' (LR:2.41), 'spying' (LR:2.23). Throughout the corpus, these terms are consistently interwoven into discussions of disinformation, leading to various strands of discourse. These include specific spying operations that involve disinformation, 'spy' as a metonym for information operations, and information revealed by former spies and insiders. One way to identify how these words are used in context to construct meaning is to look at collocates of 'spy'/'spies'/'spying'. *Figure 35* provides a collocate graph showing the top collocates (5L5R, MI3:10, minimum frequency:10).

The collocational network shows the node words (query words, i.e. spies, spy, spying) in purple in the centre, with the collocates appearing in black and grey. Length from the centre indicates the strength of the collocate (MI3 is used), and its position to the right or left of the node reflects the position of the collocates in text (i.e. words on the left tend to appear to left of the node). The colour scale indicates frequency, with the lighter grey showing infrequent items and the darker black showing frequent items. The benefit of this tool is not only does it visualise the collocation relationship that the node words have with these collocates, but the collocates open up potential further avenues of inquiry, predicated on statistical metrics (in this case MI3) rather than solely intuition.

When we contrast it to viable alternatives, such as using the job title ‘Senior Intelligence Official’ or the more generic ‘Top civil servant’, we begin to see that the word ‘spy’ is semantically loaded with connotations of clandestine operations and secret missions, contributing to a wider discourse of the sensationalization of disinformation. A KWIC query for ‘spy’ confirms this strand of discourse is present in the data (see *Table 76*).

Table 76 Concordances of 'spy'

Example	File	Tweet
76.1	2013_08	New book by Soviet spy is fascinating read about disinformation, the flip side of journalism/strategic communication.
76.2	2014_02	Western spy agencies build ‘cyber magicians’ to manipulate online discourse t- New face of war on disinformation
76.3	2014_10	#NigerianDailyNews How 'playboy' Spanish spy was duped by MI5: MI5 fed "disinformation" to Migel Piernav #news
76.4	2018_08	Good old fashioned spy craft is still alive and well. As the Congress focuses on cyber and disinformation, it should forget about this. Suspected Russian spy found working at US embassy in Moscow
76.5	2018_11	We’re all living in a spy novel.“... Interestingly, Russia’s disinformation network has jumped into the ring to promote skepticism of the story. Sputnik, one of Russia’s propaganda networks, called the story into question and...
76.6	2020_05	@JohnBrennan @realDonaldTrump You were out there one every news program possible saying there was Russian collusion. While privately KNOWING there wasn’t. You are a trained spy with the full skill set. YOU are doing the disinformation campaign and undermining our reputation. You are unamerican!


In these examples we see how the noun ‘spy’ is treated not only as something of importance, but something that is ‘fascinating’ (76.1). In 76.2, we see the novel phrase ‘cyber magicians’ used while 72.3 refers to a ‘playboy’ spy, a word that denotes a “masculine norm characterized by a favorable attitude toward casual sex with multiple partners” (Dow et al., 2024, p. 1), adding a salacious element to descriptions of spies. Examples 76.4-76.6 make reference to ‘spy craft’, ‘living in a spy novel’, and ‘a trained spy with a full skill set’ contributing to a discourse of clandestine activities.

The term ‘spy’ and relatedly ‘agent(s)’, contributes to a wider discourse involving the dramatization of disinformation. Many components of disinformation such as psychological influence, foreign clandestine operations, and cyber crimes connote a sense of drama and intrigue that is capitalised on in news reporting and elsewhere to sensationalize disinformation and its spread. This undoubtedly relates to the above discussions of ‘spy chief’ that discuss public fascination with sensationalist intelligence activities. Specifically, I would argue that popular culture such as movies, TV shows, fiction, computer games, and more have all contributed by creating a ready-made trope for people to draw on and deploy in this adjacent field of disinformation and ‘spies’. This represents another cognitive shortcut that lets people tap into pre-existing emotional framing of a term (i.e. spies as sensational individuals) without necessarily having to do the laboured cognitive work themselves of explicating this connection.

8.4.2. Security and cybersecurity

Disinformation is often presented as a security and a cybersecurity threat in the data – by individuals, news organisations, charities and others. We see tweets explicitly identifying disinformation as a security threat in arenas such as electoral integrity and national defence (see *Table 77*).

Table 77 Uses of 'security' and 'cybersecurity'

Example	File	Tweet
77.1	2020_03	Whenever you see ANYTHING by #TheEpochTimes, remember, this is a right wing #disinformation publication. Disregard sites like this & seek reputable sources of information instead. #CCPVirus # CyberSecurity
77.2	2021_01	@mattsmith_news My very first thought was this could have been 100% intentional in a misguided attempt to save people from the so-called evil Bill Gates tracking vaccine, or whatever people are calling it. Disinformation is a national security threat, & it causes people to do crazy things.
77.3	2021_06	 Today I'm publishing my report on disinformation in Scotland. Disinformation is a threat to our security , public health and social cohesion. As disinformation campaigns become more sophisticated and better resourced, it's time to take it seriously.

It is also noteworthy that associations with security appear more often in the Disinformation Corpus than it does in discussions of misinformation. This ties in with several aspects of the Disinformation Corpus. First, disinformation is commonly defined as being intentionally false content, as shown in [Chapter 7](#) where the analysis of definitions showed intentionality is often foregrounded. As such, it is viewed as an activity that is focused and targeted with intention to achieve a specific strategic aim, such as targeting areas of democracy and everyday life that are susceptible security threats. There are parallels here to common law and crime.

Intent in committing crimes, i.e. criminal intent, can be a deciding factor in many jurisdictions as to whether someone can be charged or found guilty (Veresha, 2016, p. 120) and criminal intent is “often the basis of establishing guilt in a case” (Coolidge, 2024 np). In other words, identifying intent is key in assigning blame. These common law notions of intentionality in the UK (Powell, 1984), US (Shouse Law Group, 2023), and elsewhere, provide a framing through which we also view disinformation. That is to say, an intentional act (i.e. spreading intentional disinformation, compared to unintentional misinformation) automatically ascribes blame for wrongdoing, and the wrongdoing in these instances is intentional causing harm, in this case attacking security.

Keywords in the Warfare and Defence code contribute to a strong discourse of security, harm and danger. We can consider these in relation to the keywords discussed in [Section 8.2.](#), particularly the dominant discourse of Russian disinformation, as identifying the people who are reported to be carrying out these security threats and the nations responsible for potential cyber security risks. The added significance of these patterns, therefore, is they work in tandem and are interrelated.

8.4.3. Weapon

Throughout the data there is a clear and present metaphorical discourse: disinformation is a weapon. Disinformation is framed as something that can be used, operationalised and dispatched to inflict harm.

Table 78 Use of 'weapon'

Example	File	Tweet
78.1	2016_07	Foreign disinformation is a dangerous weapon & we must do all we can to counter it with #HR5181- https://t.co/G9KY0pWNBX
78.2	2018_08	Must-read study of the day: #Health disinformation as a weapon ! #Vaccines save lives! #VaccinesWork @EMA @FDAMedia @IDSAInfo @AAPNews @HarvardAlumni
78.3	2019_03	@Danno4Trump @Cordicon @realDonaldTrump The goal of those who try to discredit the media is to destroy facts and truth, which are necessary for a democracy to function. Disinformation is their weapon and social media is their battle ground.
78.4	2020_05	In #Myanmar, disinformation has been deployed as a weapon by the Burmese regime&its military. Now Irrawaddy News has become a mouthpiece for the #Burmese regime&its military's propaganda machine to attack the #Arakan Army and #humanitarian organizations.

The metaphor 'securitizes' disinformation (Marder, 2018) and frames it as something that is inherently a security issue. As Chilton and Lakoff (2005, p. 37) note, metaphors are not simply just words used in a certain way but "embody modes of thought" and structure both the discourse and the mode of thinking around certain topics. The metaphor subsequently encourages others to think of disinformation in violent terms, and something that can cause harm and should be feared. This framing however is not novel nor unique to the present dataset. Ever since the implementation of the Disinformation Unit in the Soviet Union during World War 1 (see [section 7.1.1.](#)), disinformation has been labelled as a weapon (Romerstein, 2001; Hoekstra & Jongema, 2016; Horowitz, 2019; UNSECO, 2020; United Nations, 2022) and has been situated into a context of 'information warfare'. This metaphor taps into larger discussions of information warfare (Golovchenko et al., 2018; Baumann, 2020).

Metaphors form a part of discourses and "play a central role in public discourse" (Musolff, 2004, p. 164). Metaphors can be used to "simplify complex issues, improve communication, capture attention and motivate action" (Isaacs & Priesz, 2020, p. 6) and the use of war metaphors is especially common for "framing and representing the challenges to be faced" (Panzeri et al., 2021, p. 2). One potential issue, however, is that metaphors can oversimplify issues and create a 'black and white' framing in which "other actors are either friends or enemies; they are either 'with us or against us'" (Hammerstad, 2011, p. 253).

Nevertheless, the discussion of disinformation as a weapon pervades and exists within a wider 'war' metaphor framing. Dance (2025) finds that in discussions of disinformation on Twitter, disinformation itself is framed as an 'enemy' that needs to be 'combated' and 'fought' and this adversarial framing functions by embodying something which is not necessarily immediately tangible, such as social media shares or information operations.

One effect of the weapon and war metaphor is that it conveys the seriousness of the topic of disinformation. Framing disinformation as something that is "an instrument [...] used in warfare or in combat to attack and overcome an enemy" (weapon, n. OED, 2023k) conveys a sense of danger but also gravity and importance. We can see this in the examples in [Table 79](#).

Table 79 Weapon metaphors of disinformation

Example	File	Tweet
79.1	2012_09	NATO/U\$raeli war crimes are not news, because news as disinformation is a fully integrated weapon of attack . #WarCrimes #msm
79.2	2020_01	What Did Virginia Learn From the Unite the Right terrorists in 2017? Good read. I learned disinformation is their biggest weapon . Besides cars & guns, I guess, since an innocent was murdered & other innocents injured & traumatized by a car.
79.3	2021_04	@brothergene @CatHaven04 @Bianca09051997 An I Replied Sarcastically That The MSM Is Not Covered For 🐘 🧨 So Anyone Reading Get A Clue They Have No Protection An Some Suggestions On Cleaning Up The News From Omission, Vid Manipulation, Selling Narratives, Destroy The Weapon Of Mass Disinformation , How Is That Done?

Example 79.1 discusses the role of disinformation in covering up war crimes, 79.2 suggests that besides guns and cars (referencing the Charlottesville car attacks, see Blout and Burkart (2023)), disinformation is the ‘biggest weapon’, and in example 79.3 a play on words compares disinformation to weapons of mass destruction (see Moeller, 2004 for discussions of media coverage of weapons of mass destruction during the ‘War on Terror’). It is notable that example 79.2 implies that disinformation could be seen as equally dangerous as physical weapons in its capacity to cause trauma and physical harm or death. It is important to recognise that disinformation is considered to be a tool of violence which emphasises the need for robust strategies to counter its (perceived) damaging effects. Specifically, policymakers can draw on these findings to craft regulations that treat disinformation as a national security threat, incorporating measures such as transparency requirements for digital platforms and enhanced media literacy initiatives that acknowledge that individuals fundamentally view disinformation as a weapon directed at them. Such a policy would help reassure people that they are not at risk from these metaphorized weapons.

8.5. Conclusion

The select keyword groupings discussed in this chapter demonstrate that the intentional aspect of disinformation affects usage, but it is not only intention that affects the meaning of the word ‘disinformation’. This is demonstrated by inspecting further patterns of usage which go much further beyond intentionality and blame and highlight a range of distinct but also complementary ways in which the term disinformation is used.

What is evident from these discussions is that real world usage and understandings of ‘disinformation’ are, perhaps unsurprisingly, much wider and more complex than dictionary definitions of ‘disinformation’ that simply label ‘disinformation’ as intentionally false content. The analysis in this chapter has determined:

- Russia is viewed as the prototypical disinformation producer, with China and Iran mentioned but much less frequently. The targets of disinformation are largely seen as Western nations. These two strands of discourse work to develop a dominant framing of Russia being responsible for disinformation.

- The use of ‘fake news’ as a dismissive has been extended to disinformation, including to ‘Russian disinformation’ as a means of mocking or discrediting ideas. This represents a pejoration of the term ‘disinformation’.
- Disinformation campaigns are often framed in extreme (e.g. ‘huge’) or superlative (e.g. biggest) terms. This is related to a degree of sensationalization in the data, also seen through references to ‘spies’ and ‘agents’, indexing popular culture.
- The word ‘influence’ opens up many findings, including that elections are seen as innately linked to disinformation and that people view disinformation as affecting our mental and cognitive processes.
- There is a strong security angle throughout the data and disinformation is metaphorized as a weapon that is harming us. At times disinformation is equated with physical harms such as harms caused by knives or guns.

[Chapter 10](#) Conclusions will discuss practical insights that can be derived from these findings and will compare these findings with those in the following chapter, in which I analyse discussions of ‘misinformation’ on Twitter.

9. Discourses of Misinformation

Let not such be discouraged, if they deserve well, by misinformation, or for the satisfying the humours or ambition of others, perhaps out of envy, perhaps out of treachery, or other sinister ends.

Francis Bacon, 'The Works of Francis Bacon, Lord Chancellor of England'. (Bacon, 1842)

This chapter carries out in-depth, qualitative analysis of the keywords that are overrepresented in the Misinformation Corpus when the Disinformation Corpus is used as the reference corpus. As detailed in [Chapter 6](#), there were several keyword codes that were more common in the Misinformation Corpus than the Disinformation Corpus, and some of these will be discussed here, namely:

- Medical
- Means
- Effects
- Response

There were more keyword groupings than just these four here that were over-represented in the corpus, but due to space limitations I cannot discuss them all. The decision to analyse these codes is both data-driven in that they are all overrepresented in terms of their frequency, but also theory driven in the sense that they all represent salient themes that have been discussed as key factors previously in my literature review. A comparison of the analysis in [Chapter 8](#) and here will be made in the next chapter, Conclusions. The keyword codes are mutually exclusive, meaning one keyword can only belong to one code; nevertheless, keywords can be interrelated and work to construct multiple discourses. Consequently, this analysis is set up in a way that discusses one code at a time, but cross over between codes where necessary.

Throughout this chapter, examples in the data will be contextualised against the relevant offline backdrop, and that this is done in turn, in line with those examples, because there are otherwise so many micro-contexts and nuances and niche situations that trying to lay them all out at the start would be difficult for the reader to follow. Consequently, after each analysis it is necessary to zoom out into the relevant literature and provide segments of literature-review-style content alongside discussion of the context for each example.

9.1. Medical

The Medical keyword grouping represents the code with the biggest difference in use between the Misinformation Corpus and the Disinformation Corpus. In the Misinformation Corpus, 19.27% (n=95) of keywords are interpreted as Medical versus just 0.14% (n=1) in the Disinformation Corpus. [Table 80](#) below (a reduced version of [Table 55](#)) shows the figures for the misinformation and Disinformation Corpus keywords.

Table 80 Medical keywords across corpora

Code	Sub-code	Disinformation (% of all keywords for corpus)	Parent %	Misinformation (% of all keywords for corpus)	Parent %
Medical	General	1 (0.14%)	0.14%	78 (15.8%)	19.27%

	Vaccines	0 (0.00%)		16 (3.25%)	
	COVID-19	0 (0.00%)		1 (0.2%)	

These three subcodes (General; Vaccines; COVID-19) are all over-represented in the Misinformation Corpus, showing a strong slant towards medical discourses in the data. This thematic preference was first suggested by the wordlist analysis in [Section 6.1](#), which showed high frequencies for medical and scientific terms. The top 10 tokens for the biggest sub-code (Medical – General) are shown in [Table 81](#).

Table 81 Most over-represented tokens in the Medical - General code

Rank	Token	Log Ratio	Misinformation Corpus freq. (per 10,000)	Disinformation Corpus freq. (per 10,000)
1	Nutrition	3.19	201 (0.27)	17 (0.03)
2	HIV	3.15	436 (0.59)	38 (0.07)
3	Vape	3.08	109 (0.15)	10 (0.02)
4	Pregnancy	2.93	138 (0.19)	14 (0.02)
5	Ebola	2.88	751(1.02)	79 (0.14)
6	Infertility	2.71	110 (0.15)	13 (0.02)
7	Measles	2.70	848 (1.15)	101 (0.18)
8	Abortions	2.65	81 (0.11)	10 (0.02)
9	Cannabis	2.57	315 (0.43)	41 (0.07)
10	Vaping	2.52	445 (0.60)	60 (0.11)

Three of the top 10 overrepresented tokens in the Misinformation Corpus refer to human reproduction, namely ‘pregnancy’ (rank: 4), ‘infertility’ (rank: 6), and ‘abortions’ (rank: 8). As such, I decided to explore this theme further. The subsequent section considers these constituent terms under the theme ‘Reproductive Issues’.

9.1.1. Reproductive Issues

The label ‘reproductive issues’ is used here to encompass both the medical and social topics of reproductive rights and reproductive health. The keywords discussed are ‘pregnancy’, ‘infertility’, ‘abortion/s’, and ‘pregnant’. On the surface it appears these words are simply discussing human reproduction, but they represent a wider set of political and social issues. Notably, “reproductive health and abortion are highly politicized issues both on global and national levels” (Blystad et al., 2020, p. 1) and discourses of these topics represent more than just the topics themselves. Discussions are heavily influenced, and driven by, topics including civil rights and social, historical and religious issues (Saurette & Gordon, 2013; Sharma et al., 2017; Oh et al., 2023). [Table 82](#) shows the frequencies of each of these words across the Misinformation Corpus and Disinformation Corpus. These results have been ordered using the Misinformation Corpus relative frequency (per 10,000 words) column.

Table 82 Keywords denoting reproductive issues

Keyword	Log Ratio	Misinformation Corpus freq. (per 10,000)	Disinformation Corpus freq. (per 10,000)
Abortion	2.33	914 (1.24)	141 (0.25)
Pregnant	1.56	171 (0.23)	45 (0.08)

Pregnancy	2.93	138 (0.19)	14 (0.02)
Infertility	2.71	110 (0.15)	13 (0.02)
Abortions	2.65	81 (0.11)	10 (0.02)

As Oh et al. (2023) find in an analysis of abortion tweets in the US and Ireland, although abortion is an issue often portrayed as rife with hostility and incivility, very few tweets in their dataset – less than 15% in fact – contain “uncivil and intolerant communications” (p. 7). However, a baseline of ‘civility’ is not provided, and this would vary from platform to platform as some social platforms are more hostile and combative in their communication than others (Coltman-Patel et al., 2022). Incivility and intolerance are also minimal in the Misinformation Corpus, and in fact, tweets containing both the terms ‘misinformation’ and ‘abortion’ broadly align to a shared perspective. Users consistently assert that misinformation adversely affects both reproductive rights but also the ability to have sensible discussions of reproductive issues (i.e. abortion misinformation obfuscates information and reduces the ability to have rational reasonable discussions). This is seen below.

Table 83 Use of abortion/s

Example	File	Tweet
83.1	2012_09	# Abortion does not cause #endometriosis. Get the facts and ignore the misinformation out there. http://t.co/olWGSdBW
83.2	2012_12	@davidfrum I don't know why we allow misinformation, with regard to our health, protection under free speech? Why isn't this treated the same as shouting fire in a theater? We need a law like Texas did on abortions , but for Liars. It would end conspiracy talk and Fox News real quick.
83.3	2014_11	Misinformation of patients and intimidation of staff, to the point that an abortion clinic might close... in London.
83.4	2014_12	@1stAirDel study show there are few complications from abortions Life News distorted the study. LifeNews specializes in misinformation.
83.5	2017_05	US abortion restrictions are "rooted in misinformation, and laws based on false assertions"- NOT rigorous science https://t.co/1jjGFEjItR
83.6	2019_09	@LilaGraceRose @facebook It is false news. You're spreading dangerous misinformation about birth control & abortion . You are doing a huge disservice to women and girls everywhere, and should be ashamed of yourself.

Abortion misinformation has been labelled as the ‘next infodemic’ (Pagoto et al., 2023a) and research using in-depth interviews often highlights that abortion misinformation is prolific (John et al., 2023), challenging for journalists (Sisson et al., 2017), and can even lead to those considering having abortions feeling pressured into giving birth instead (Kavanaugh et al., 2019).

Patev and Hood (2021) note a recurring misinforming trope around abortion is that it causes infertility (p. 296) and while ‘infertility’ occurs as a Misinformation Corpus keyword, it is not used in this way. Occurrences of ‘infertility’, as shown below in Table 84, almost exclusively refer to the links that have been drawn between vaccination and infertility – a link that is largely considered unproven by medical professionals (BBC Reality Check, 2021) .

Table 84 Use of 'infertility'

Example	File	Tweet
84.1	2019_02	Wow, seems like a useful tool! There sure is a lot of misinformation out there regarding infertility , so I like that this is pushing evidence-based advice only. #infertility #tech Jewish General tests app for people struggling with infertility
84.2	2020_12	Sharing this once more because we know Google search traffic on the coronavirus vaccine, lack of clinical trials during pregnancy, and the misinformation out there that the vaccine will cause infertility peaks in tandem with vaccine approvals and rollouts.
84.3	2021_02	@BBCR4Sunday @Dr And now, the week's real religious news, ignored by @BBCR4Sunday: An anti-abortion group's false claims that the Covid-19 vaccine is linked to infertility have been criticised by the World Health Organisation. Surprise, surprise!
84.4	2021_03	Doctors who specialize in pregnancy and fertility are coming out in full force against vaccine-related misinformation that falsely connects the vaccine and infertility .
84.5	2021_04	WVU Charleston's Dr. Karinna Andrews was interviewed on WOWK-TV answering questions about the hesitance of some young women to get COVID vaccines due to misinformation about infertility risks.
84.6	2021_07	@Mr @MollyJongFast @Sulliview @voguemagazine The idea about COVID vaccines causing infertility is a HOAX! It's part of the right wing being stubborn contrarians. Nothing more. Get the shots and you'll be just as fertile and be able to avoid the risk of catching and spreading the plague.

As shown in these examples, infertility and vaccination are discussed in tandem, in relation to claims about vaccine-induced fertility. Vaccination misinformation has been shown to potentially contribute to decreased intent to vaccinate (Loomba et al., 2021) and understanding vaccine hesitancy through the lens of misinformation is important in understanding how current fears and hesitancy around vaccination is exacerbated online (Loomba et al., 2021). Many health services proactively address vaccine misinformation and myths at both the national and local levels (NHS 111 Wales, 2022; Kent Community Hospitals Trust, 2024; NHS England, 2024), and it is a topic that is often keenly in the public's mind (Zimmerman et al., 2023).

These tweets that oppose misinformation form a [counterdiscourse](#) – that is, a discourse that is in opposition to, or in response to, another type or strand of discourse (usually one that is prevailing or institutional) (Maillot & Bruen, 2018; Venkatesan & Saji, 2021). Counterdiscourses react to, and often challenge, other narratives in the data and show the dyadic, dialogic nature of evolving strands of representations (Baker, 2006). In this case, the anti-misinformation counterdiscourse is responding to discourses of false information that spread vaccine myths. The tweets contributing to discourse criticise misinformation, its effects and those who spread it. Perhaps unsurprisingly, the overall tone is negative and critical.

Example 84.1 shows a rare of example of a non-vaccine related discussion of infertility, while examples 84.2-84.6 show the dominant pattern. Vaccine hesitancy caused by fears around vaccine-induced infertility have been prevalent in recent years, specifically with the onset of the COVID-19 pandemic (Sajjadi et al., 2021; Abbasi, 2022), and this seems to be reflected in the

Misinformation Corpus. In the corpus, these users often discuss the outcomes of infertility misinformation, and the harm that can be caused by reduced vaccination rates.

Table 85 Discussion of vaccination and infertility

Example	File	Tweet
85.1	2020_12	Sharing this once more because we know Google search traffic on the coronavirus vaccine, lack of clinical trials during pregnancy, and the misinformation out there that the vaccine will cause infertility peaks in tandem with vaccine approvals and rollouts.
85.2	2021_09	Massive misinformation on social media, fox news & other right wing media as well as continued tRUMPISM! Lies like the vaccine is causing infertility or more deaths than the virus. Tucker saying masks on kids are child abuse & more BS
85.3	2021_09	@TiffanyForAlief @ej11lizzie Misinformation about COVID19 causing infertility is killing people. 🤔💔💔💔

Elsewhere, some users weigh up whether these claims are misinformation or not. These instances, although rare, show how misinformation can potentially contribute to vaccine hesitancy, shown in example 86.1 below.

Table 86 Misinformation possibly contributing to hesitancy

Example	File	Tweet
86.1	2021_06	I'm curious if anyone knows whether the infertility claim about COVID vaccines is true? I saw on the news that it is misinformation, but some smart people seem to think there is validity to it.

We can see how misinformation can exploit deeply personal fears, such as infertility, to sow distrust and amplify pre-existing hesitancy. These observations also underscore the critical importance of identifying and countering health-based misinformation that capitalises on existing vulnerabilities. Infertility misinformation is often gendered, with a disproportionate focus on women's reproductive health and their perceived vulnerabilities; this reflects broader societal narratives that place the burden of fertility and childbearing largely on women, making them a key target for misinformation. Gendered disinformation has been recognised as a threat to “the free expression of women and gender nonconforming persons and a threat to their safety and health” (United Nations General Assembly, 2023, p. 2) and the UK government reports that gender stereotypes and “contentious and emotive gender issues” can be used as part of disinformation campaigns to harm women and gender nonconforming individuals (HM Government, 2020, p. 4).

9.1.2. Healthcare Professionals

While the keywords discussed above refer to medical topics and procedures such as abortion and reproduction, there is also a subset of keywords in the Medical_General code that refers to healthcare professionals (hereafter ‘HCPs’). These keywords such as ‘doctors’, ‘surgeon’, and ‘professionals’, refer to individuals involved in medical settings (see *Table 87*).

Table 87 Keywords in Medical_General describing medical professional ranked by log ratio

Keyword	Freq (per 10,000)	Log_R	Examples
GP	83 (0.11)	2.42	1a) @SNSWLHD apologises for misinformation on Flu injection information... please see your GP for the free injection (2016_04) 1b) Derry GP Anne McCloskey has been handed an 18-month suspension by the General Medical Council over spreading Covid-19 misinformation. She has shared posts likening the administration of vaccines to Nazi Germany. (2021_09)
DOCTOR'S	72 (0.10)	1.99	2a) Doctor's combat misinformation over #vaccines #whoopingcough... Doctors and scientists are preparing to go into battle against parents who refuse to have their children immunised. Doctors and scientists launching a campaign aimed at parents who refuse to have children #immunised. via @abcnews (2021_11) 2b) British-Pakistani doctor's licence suspended for peddling misinformation about Covid-19 (2020_06)
PHYSICIAN	159 (0.22)	1.99	3a) Also, docs call out "licensed physician promoting misinformation that is harmful".....except if they are spreading misinformation and blatant lies about guns. #GunBan (2020_08) 3b) New research: #Primarycare #physician misinformation about #opioids may be contributing to misuse. W (@DoctorsLounge) (2015_07)
PHYSICIANS	276 (0.37)	1.88	4a) Be aware for summer! "Emergency physicians seek to correct myths, misinformation surrounding 'dry drowning'" (2018_06) 4b) What do we do about politicians and physicians who promote antivaccine misinformation? v #news (2015_02)
NURSE	239 (0.32)	1.75	5a) UK charity #Macmillan #Cancer hires digital nurse to counter #medical #misinformation a UK charity Macmillan Cancer hires digital nurse to counter medical misinformation (2017_10) 5b) Fox News helps embattled school nurse spread her bogus claim that vaccines and masks are riskier for kids than COVID-19 (2021_05)
DOCTORS	1,830 (2.49)	1.67	6a) Pleased to see a flood of doctors coming out today to try to counter the misinformation about OMICRON. It is a cold. Delta is very dangerous to the unhealthy but Omicron is not. Delta is disappearing - this is amazing news. (2021_12) 6b) Some doctors are spreading "misinformation that promotes anti-vaccine, anti-mask wearing, anti-physical distancing and anti-lockdown stances." #covid19bc (2021_10)
PROFESSIONALS	429 (0.58)	1.50	7a) Good news for GPs as the @TGAgovau removes ban on health professionals promoting COVID-19 vaccines. New arrangements allow GPs to publicly support vaccination and counter misinformation, and generate informational materials. https://bit.ly/351giAJ (2021_06) 7b) Even so called "professionals" are getting into conspiracies & misinformation purveyed by outlets like Fox News, GOP Q'anon actors & anti vacc skeptic organizations . It is costing lives & prolonging the pandemic & there needs to be action to designate these as terrorist orgs (2021_06)
DOCTOR	1207 (1.64)	1.43	8a) Measles outbreaks are a global problem with local solutions. How one doctor in the UK is fighting misinformation about the MMR

			vaccine within her Somali community. Important story from @Fahimalsaq, @Shanaedennis (2019_06) 8b) The doctor is also prohibited from prescribing ivermectin -- an antiparasitic agent that Health Canada says should not be used for treating #COVID-19. https://bit.ly/3ifu7m6 (2021_09)
NURSES	230 (0.31)	1.37	9a) "When people aren't getting accurate news in the media, they go to #Facebook... we have a duty." @LFDodds meets the nurses and police officers waging war against #coronavirus misinformation online (2020_03) 9b) That's the best news. I dread to go to any hospital if nurses spread misinformation about the vaccines and are antivaxxers. To lose their license is their own doing. (2021_11)
SURGEON	268 (0.36)	1.36	10a) @DermotMCole The surgeon generals call for a whole of society approach for fighting misinformation. (2021_09) 10b) US Surgeon General Falsely Claims Highly Potent Pot Has Made Weed More Addictive Nothing but misinformation, @Surgeon_General (2019_12)
DR	2145 (2.91)	1.03	11a) Dr Nicholl: "People will die because of this misinformation, this rubbish being written and shared by people. I can tell you, this pandemic is killing people round the corner from you. It is real" Well said (2020_12) 11b) It's nice to finally see a Dr. spreading covid misinformation held accountable! (2021_09)

Media and social media discourses have implications for how people understand health and healthcare systems and the construction of health expertise is an important part of this (Ekström, 2016; King & Watson, 2017). Specifically, expertise and expert identities are enacted and negotiated in discourse (Ekström, 2016). In the examples above discussing HCPs, there is both: (A) the construction of expertise, with medical professionals seen as authoritative information sources and those at the forefront of tackling misinformation; and (B) denigration of expertise and the attribution of blame, with HCPs seen as responsible for spreading misinformation. In the examples column, tweets labelled 'a)' are examples of the pro-HCP pattern, and examples labelled 'b)' are examples of the HCP-critical pattern. While I have chosen an equal number of examples from both phenomena, this does not imply an equivalency. In the Misinformation Corpus, reference to HCPs is overwhelmingly positive, with most tweets praising HCPs for addressing and dispelling misinformation.

9.1.2.1. *Negotiation of expertise in reference to HCPs*

First, I will look at the former – cases where HCPs are framed as experts. In the table, these are the examples labelled 1a, 2a, etc. In these instances, expertise and authority are constructed with uses such as 'Doctor's combat misinformation' (2a) and '#Rheumatology nurses key to dispelling misinformation' (9a). In uses such as these, the HCP is positioned as the expert and the one with epistemic power to address false health claims. Expert sources are used to confer credibility to a statement (Boyce, 2006) and non-experts can cite, and defer to, experts as a way of communicating technical or intricate knowledge that they themselves can not necessarily explain (Kruvand, 2012). In these instances, users are sharing news stories but also adding additional commentary about action being taken by HCPs.

This includes commentary such as ‘Be aware for summer!’ (4a) in relation to ‘dry drowning’ myths and ‘Good news for GPs’ (6a) regarding countering vaccination misinformation, in which intervention from HCPs is seen as a positive, and something that is welcomed in addressing and dispelling misinformation. These positive representations of experts go against the common claims (see [section 4.9.](#)) that we are post truth (Coen et al., 2021) or post expert (Luers & Kroodsma, 2014), and instead show the active endorsement, promotion, and encouragement of expert voices in discussions. That is not to say that post truth/expert sentiments do not exist or that they are not important to consider, but instead that they are not the whole picture. There are, however, examples where there is clear negative sentiment towards HCPs who are not seen as acting appropriately in their roles as healthcare professionals.

In 1b, 2b and 11b we see comments of HCPs being punished for spreading misinformation, with 11b showing explicit praise for the decision with ‘It’s nice to finally see [accountability]’. In some instances, users refer to ongoing cases such as an ‘embattled nurse’ (5b) who has been accused of spreading misinformation, while users also express their concerns at encountering ‘nurses [that] spread misinformation’ who are ‘antivaxxers’ (9b). In example 7b health professionals are undermined by the use of scare quotes, “professionals”, and are accused of ‘costing lives’ to the extent that the user writes the HCP should be labelled as associating with terrorist organisations. This example is stark because it does not address a specific HCP – as some of the other examples do – but instead has generalised it to all HCPs.

I would argue that these examples do not only equate to anti-intellectualism or anti-expert sentiment (Merkley, 2020) but are instead situated in HCP-critical discourses. In recent years, especially during the COVID-19 pandemic, we have seen HCPs targeted with abuse. For example, in 2021 the Royal College of Midwives chief executive was targeted with online abuse for promoting the COVID-19 vaccine (Hackett, 2021), while in earlier years reproductive health care providers have been subject to verbal and physical abuse (U. S. Department of Justice, 2023). These patterns of abuse, which may be mediated through CMC or in person, are reproduced in the examples here and it would appear that these discourses are also produced by perceived pro-science, pro-fact individuals who criticise HCPs for spreading misinformation.

Viewing discourse as a form of social practice, and assuming a dialectical relationship between discourse and the context in which it is produced (Fairclough & Wodak, 1997), we can begin to see how these discourses form. As discussed, there have been many real-world instances of marginalisation and abuse of HCPs, something which is also reflected in discourse online. But it may be that these very discourses that single out HCPs and criticise them also enable, and encourage, offline ‘real world’ targeting of HCPs. Additionally, misinformation about HCPs has contributed to the ‘demonisation’ of HCPs as a group (Beaumont et al., 2020; McKay et al., 2020) and many abusers of HCPs include misinformation as a potential driver (Dye et al., 2020; Iyengar et al., 2020; García-Zamora et al., 2022). Blame for spreading misinformation further contributes to their denigration as a group.

It is important to clarify that I am not equating the Twitter criticism of a HCP who shares misinformation with the physical abuse of frontline HCPs, but instead I suggest they exist on the same scale. That is to say, online criticisms of HCPs are the low-end of the scale while abuse of HCPs is at the end other, extreme end of the scale.

There is also an important middle ground between pro- or anti-HCP discourses – comments where people reflect on the weakening of the expert. Below are some examples of this phenomenon where I have emboldened elements that fit this trend.

Table 88 Comments on diminished belief in experts

Examples	File	Tweets
88.1	2019_02	This is really bad. How come knowledge (i.e. health professionals) has become so weak in getting the message across. Worse news is that #misinformation has started to affect countries beyond the Europe and north America #measlesoutbreak #vaccines https://bmj.com/content/364/bmj.l634
88.2	2020_08	@_YvonneBurton @michaeljashmore @jennfranconews Well, you need to trust doctors over TV news OR mr. pillowman - whether he's friends w/ DJT or anyone else. Doctors are finding resistance from people due to what they're seeing on TV. Scary not to mention unfair they have to deal w/ misinformation.
88.3	2021_01	Liberal MP doubles down after peddling COVID-19 'misinformation', Chris Bowen said Mr Kelly had made a systemic,deliberate attempt to undermine health professionals . "Kelly is a menace at every turn, PM & now acting PM, have failed to call him out,"
88.4	2021_03	the saddest shit is when people are like "believe doctors" then we have doctors who go against the narrative & people are then like "no! not those doctors!" like tf bitch you just want shit to go with what YOU BELIEVE & that's IT

These comments are situated into a rich history of the undermining of experts. On the 3rd of June 2016 ahead of the UK Brexit referendum, the then Secretary of State for Justice Michael Gove, told Sky News UK that people “have had enough of experts” (Angermuller, 2018). In 2017, Kellyanne Conway, former campaign manager to Donald Trump and then Senior Counsellor to the President, popularised the term “alternative facts” in response to allegations of deception (Harrison & Lockett, 2019). These comments were symptomatic of increasing anti-expert sentiment that was being spread top-down in society from the political elite. The respective comments drew fierce criticism at the time (Harrison & Lockett, 2019; Watson, 2020) but, it has been argued, still contributed to undermining science and trust in institutions (Katz & Harrington, 2017; Hendricks & Vestergaard, 2019).

As Ekström (2016, p. 20) notes, “discourses of medical authority are reproduced, negotiated, and transformed in media representations” and this can be seen in Twitter discussions of misinformation.

9.1.3. Misinformation, Health, and Blame

The above analysis however does not explain why ‘abortion/s’, ‘pregnant/cy’ and ‘infertility’, and other health topics, occur mostly alongside ‘misinformation’ and not ‘disinformation’. One reason I am going to explore for this is blame.

Blame is integral to misinformation and disinformation. As a noun, blame refers to ‘responsibility for anything wrong, culpability’ (OED, 2023b) while the verb *to blame* means to find fault with, or to accuse of fault (OED, 2023g). Using ‘disinformation’ implies responsibility and awareness of wrongdoing, i.e. sharing false information intentionally. In other words, it places blame upon someone/something. Using ‘misinformation’ in part absolves the sharer of (some of) this blame. This is important because when it comes to health-based false content online, using disinformation implies culpability whereas using misinforming implies victimhood (i.e. they have been deceived and are unaware).

Blaming individuals for sharing false content about important, personal topics such as health is complicated because if they have been deceived, it puts the responsibility in the wrong place. That is to say, it is not necessarily their fault they are sharing false content because they think it is true. Given the prevalence of health misinformation, especially for topics that can cause serious harm such as vaccine hesitancy, addiction, and eating disorders (Suarez-Lledo & Alvarez-Galvez, 2021), it is unfair to place blame on every disseminator of false health content because it is easy to understand how ordinary people without the necessary expertise can find themselves unwittingly sharing false health content. Further, belief and susceptibility to health misinformation must be contextualised into a complex set of factors.

For example, in a systematic review on susceptibility to health misinformation, Nan et al. (2022, p. 12) find that multiple studies reported that “being a racial/ethnic minority significantly predicts more susceptibility to health disinformation”, and specific to COVID-19, research has shown a greater prevalence of misinformation belief among racial minorities (Druckman et al., 2021). In other words, there are racial, cultural and social barriers to accessing high quality medical and health information. This is further compounded by the fact that some disinformation producing organisations and countries, such as the Children's Health Defense and Russian information operations, specifically target groups such as racial minorities or women with disinformation (Di Meco, 2019; Christiansen et al., 2020; Stone, 2021). This prejudicial targeting increases the amount of disinformation seen by these groups, and therefore it is unsurprising that belief in misinformation may be higher. Therefore, to use ‘disinformation’ not ‘misinformation’, and to blame these victims of false content is wrong from an epistemic standpoint.

We must also consider how emotion drives misinformation. Emotions, whether momentary or long-term, can increase belief in misinformation and decrease truth-discernment in both health and non-health contexts (Martel et al., 2020a; Bago et al., 2022; Li et al., 2022). When we combine this with the knowledge that, in the UK, health is consistently identified as one of the most important issues facing the country (YouGov, 2024) we see that health is something that is a nationwide concern, and this concern and related anxieties could increase vulnerability to misinformation. This discussion has so far focused on specific topic in the data (health and reproductive issues) but there is also a strand of discourse that discusses not just topics themselves, but the practicalities of how this content is actually spread – this is captured under the Means code.

9.2. Means

The Operations_Means code includes keywords that are used to refer to the specific means – that is, the systems or methods – by which false content is spread. [Table 89](#) shows the breakdown of this code, namely that it accounts for 4% of all Misinformation keywords, with a combined total frequency of 11,288 hits.¹²

¹² The token ‘Facebookâ€™™’ (and others like it) represents a technical artefact produced by the Twitter API and is the same as ‘Facebook’s’ However the original was preserved to maintain the integrity of the original Twitter data.

Table 89 Breakdown of Operations_Means

Code	Sub-code	% of all misinformation keywords	Keywords	Freq. of keywords
Operations	Means	4%	20	11,288
WHATSAPP, USERS, INSTAGRAM, FACEBOOK™S, PINTEREST, TIKTOK, AMAZON, DM FACEBOOK'S, SHARES, TRAVELS, TWITTER'S, FORWARDING, ADULTS, CELEBRITIES, CLICKS, CONTAINS, FORWARDED, CELEBRITY, COMPANY'S,				

9.2.1. Specific Means

Within this keyword classification, three discernible themes have been labelled in *Table 90* below. Digital communication refers to functionality on social media websites and other platforms such as ‘users’ and ‘clicks’. The token ‘share’ which mostly occurs a verb does not appear as a keyword for either corpus, whereas ‘shares’, which mostly occurs as a noun (i.e. a (re)post on social media), is classified under Means. Tech and social platforms are also common in this keyword grouping with companies such as WhatsApp and Facebook detailed as services where misinformation spreads. The specific means category refers to particular groups or the ways that misinformation is shared.

Table 90 Themes within Operations_Means keywords

Digital communication	USERS, SHARES, FORWARDING, CLICKS, FORWARDED
Tech and social platforms	WHATSAPP, INSTAGRAM, FACEBOOK™S, PINTEREST, TIKTOK, AMAZON, FACEBOOK'S, TWITTER'S, COMPANY'S
Specific means	TRAVELS, ADULTS, CELEBRITIES, CONTAINS, CELEBRITY

Within this theme, ‘celebrity’/‘celebrities’ refers to so-called ‘super spreaders’ of misinformation – that is, individuals with large followings who comprise a disproportionate number of disinformation shares (Avaaz, 2020; CCDH, 2021). Use of the token ‘adults’ names a specific group of misinformation sharers, often modified by words such as ‘older adults’ or ‘US adults’. The token ‘contains’ is often used for things that are a vehicle for disinformation, such as ‘the article contains’ or ‘Google contains’. Finally, ‘travels’ refers to how the internet has increased the speed at which lies can spread online in CMC compared to truthful or offline communication (see *Table 91*).

Table 91 Prototypical use of ‘travels’

Example	File	Tweet
91.1	2018_07	misinformation travels farther, faster, deeper, and more broadly than accurate news does

Two of these tokens will now be explored further in depth: ‘celebrity’ and ‘celebrities’. Both exhibit distinct patterns in use over time. *Figure 36* shows the frequency of tweets containing either ‘celebrity’ and/or ‘celebrities’. It demonstrates that after 2017, frequency of the terms begins to increase, peaking in 2020 with 179 tweets. It then dips for 2021.

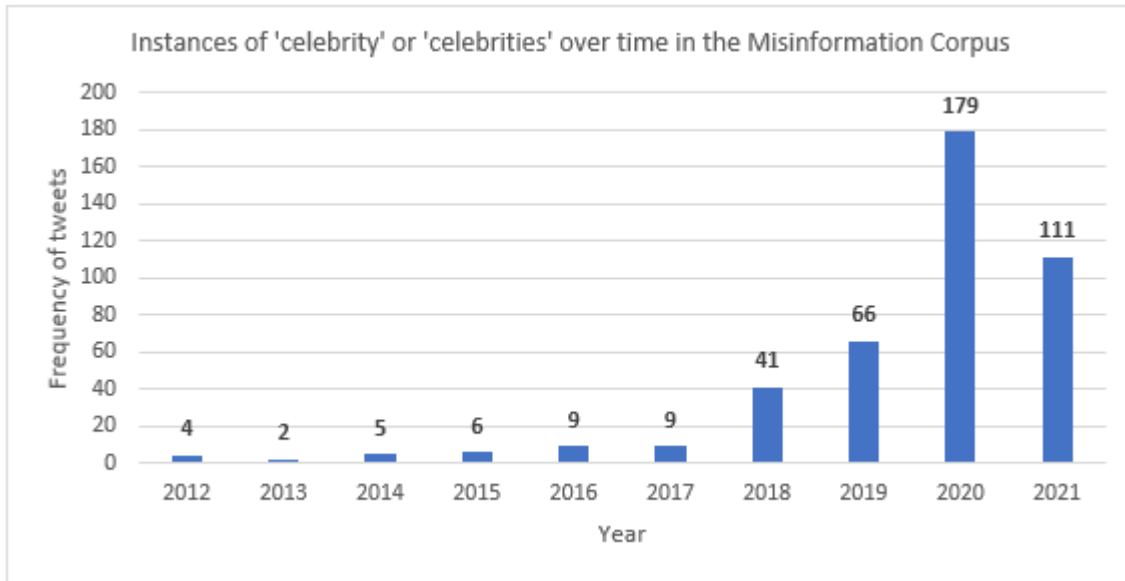


Figure 36 Tweets containing 'celebrity' or 'celebrities' over time in the Misinformation Corpus

Table 92 below shows examples of tweets containing either token. In each instance, as is the dominant pattern throughout the corpus, well-known individuals are accused of spreading misinformation. This includes various domains/topics, including reproductive health ('planned parenthood'), veganism (Chris Packham), wildfires, and COVID-19. The last of these hints at why there could be a peak in 2020 – namely, COVID-19 misinformation. To explore this further, the 179 instances from that period were isolated and explored.

Table 92 Tweets containing 'celebrity' or 'celebrities' over time

Examples	File	Tweets
92.1	2017_06	Celebrity misinformation about Planned Parenthood in attempt to stop defunding effort
92.2	2021_01	Z list celebrity Cockwomble and Cuntpuffin officianado, Chris (Bullshit) Packham receives his lying twat of the week award from BBC News, for spreading misinformation and lies like a Tory. The TV Worker Absolutely Talking Shit Awards (TWATs) were introduced to the UK in 2000.
92.3	2020_01	Jax- a lot of celebrities are spreading misinformation about the fires by posting these pictures used out of context and are very misleading. They should be encouraging people to donate and ways to help.
92.4	2020_12	A recent project by CAMD's Derek Curry and Jennifer Gradecki explores and highlights the dangerous #misinformation spread by celebrities , influencers, and people of power during the #COVID19 pandemic.

In the 179 hits for 'celebrity' or 'celebrities', there are no cases of famous individuals being framed as the victims of disinformation. Instead, they are either presented as disseminators of misinformation or discussed tangential to misinformation being spread (i.e. in neutral terms). As mentioned above, COVID-19 and vaccination is a big part of this. The examples below from across 2020 show how celebrities are discussed in the data. In the first example the user claims that celebrity misinformation is risking human life, while in the second the user criticises the media ecosystem for reproducing celebrity misinformation. Elsewhere, users discuss articles

which cover celebrity misinformation, that celebrities are ‘key distributors’ and reporting on the specific case of TV chef Pete Evans.

Table 93 Celebrities blamed for distributing misinformation

Examples	File	Tweets
93.1	2020_03	Shame on you!!!! When the world over celebrities are doing this!!!! You are spreading misinformation & putting innocent lives at risk!!! https://billboard.com/articles/news/9339985/rihanna-5-million-donation-coronavirus-efforts
93.2	2020_10	Believe it or not, the media doesn't have to report everything some D-list actor says or does! If a celebrity peddles misinformation or says something bigoted, it does not have to be news!
93.3	2020_04	New Study Shows Celebrities Are Key Distributors of COVID-19 Misinformation on Social Media
93.4	2020_12	Facebook has removed the official page of Australian celebrity chef turned conspiracy theorist Pete Evans for repeatedly spreading misinformation about COVID-19. Evans called coronavirus a "hoax" on his Facebook posts

As individuals who are often well known, specifically in entertainment or sports industries (Turner, 2007), celebrities naturally attract a lot of commentary and attention from a wide range of individuals, whether these are active followers of the celebrities or not (Van Krieken, 2018). As Archer et al. (2022) note in reference to COVID-19 misinformation, celebrities are part of an “epistemically privileged group” and are often held to high standards of epistemic and ethical activity (p.3). This also contributes to a paradox – for some, celebrities’ comments are more believable due to their social standing but for others, celebrities are automatically subjected to higher scrutiny due to their social standing. This, combined with mass social media, means some celebrities have massive scope, further increasing their epistemic power. This can be seen as a cyclical process, in that having a big following might be taken as a signal that someone must have ‘important’ things to say, but also, having important things to say is a means to generating a big following.

It appears that Twitter users also share this sentiment. As the examples above show, celebrities are consistently framed as letting down the public by spreading misinformation. Character is brought into question with uses such as ‘shame on you’ which criticises socially irresponsible behaviour (Diegoli & Öhman, 2024). Terms such as ‘D-list’ are used to denigrate and insult celebrities by implying their “media stock [is] deemed to be waning” (Littler, 2014). This criticism of celebrities can be seen in the extreme in example 92.2 above, where novel personalized negative vocatives (Culpeper, 2011) are formed and a celebrity sharing misinformation is referred to as a ‘Cockwomble and Cuntpuffin officianado’. The reason these keywords are included in the Means code is because it is these individuals’ celebrity (i.e. the state of being well-known and having an amplified voice) that is being criticised. That is to say, they are criticised for their perceived abuse and perceived irresponsible use of their amplified voices, not as individuals. It is their celebrity which amplifies the misinformation, and can be seen as a vehicle for spreading falsehoods.

This reach comes with a great deal of moral responsibility, especially during a public health crisis (such as COVID-19) where misinformation can lead to illness and death (Archer et al., 2022), something which is seen in the examples presented in *Table 94*.

Table 94 Discussions of celebrities and responsibility

Example	File	Tweet
94.1	2019_09	@AllergyKidsDoc @DrJenGunter Nailed it! And the problem/risk of neglecting evidence-based treatments is amplified by irresponsible celebrity endorsement and lazy reporting/news headlines. We (@tmarshallmph) wrote about this with respect to CBD for opioid addiction.
94.2	2020_10	@AdamAJRbrothers @billboard Your article hits hard on the important issue of the spread of misinformation and commentary under the guise of news. While celebrities should take responsibility in ensuring what they share is factual due to their larger reachable audience..

There is also an issue here that if you have a large following, you should exercise commonsense in what you tweet, but conversely, others might argue that commonsense is equally important when interpreting and believing what you read (ideally, both are necessary, but in reality often do not happen). Furthermore, these individuals who reject vaccines may genuinely believe they are acting morally responsibly by, for example, preventing others from being exposed to what they perceive as a harmful or ‘poisonous’ injection. This complex dynamic is another reason why misinformation, that does not assume blame, is a more appropriate characterisation than disinformation.

A central part of this discussion has been social media and social media followings, and how these confer authority to individuals such as celebrities. This then poses the question – what do people express about the social media platforms themselves where people have these followings? The next section explores the representation of tech and social platforms in the data.

9.2.2. Tech and Social Platforms

While seven tech and social platforms appear as keywords, one dominates the discussion: WhatsApp. Owned by Meta (Facebook; Instagram), WhatsApp is an instant messaging platform available on smart devices and computers. WhatsApp allows users to send messages (text; audio; visual) to other users/groups of users (256 users), to businesses, to large lists of recipients (using the ‘broadcast’ or ‘channels’ features), to use automated messaging services (chatbots), and has a ‘Communities’ feature which functions similar to a forum (WhatsApp, 2024). This means it can be used for individual one-on-one communication, group communication, and by businesses/organisations.

WhatsApp has become a powerful tool for the dissemination of disinformation (Resende et al., 2019), particularly in developing nations such as India (Banaji et al., 2019), sub-Saharan Africa (Wasserman et al., 2019) and Latin America (Lupu et al., 2020). This is partly because WhatsApp is able to operate in low-connectivity environments, which can be found in many second-world and remote contexts, whereas much richer platforms like Facebook, Instagram, Twitter, etc., rely on large bandwidth, associated infrastructure and personal costs (Boyinbode et al., 2017). WhatsApp has been linked to real-world harms, including mob violence, destruction of 5G cellular towers, and COVID-19 vaccine hesitancy. One feature of WhatsApp

that has been highlighted as being especially pernicious is forwarding – the ability to share received messages with other users. In some countries, such as the UK, WhatsApp has begun labelling and limiting forwarding to restrict the flow of misinformation (de Freitas Melo et al., 2020; Tandoc Jr et al., 2022) and ethnographic and qualitative research has shown that WhatsApp users are keenly aware of the damage caused by this sharing mechanism (Sarkar, 2022). WhatsApp is end-to-end encrypted, limiting the scope for moderation, and features such as audio messages (often referred to as ‘voice notes’ or ‘voice memos’) further complicate moderation measures (El-Masri et al., 2022).

This reference to the forwarding of messages is captured by the Digital Communication theme.

9.2.3. Digital Communication

Table 95 shows examples of the five keywords in this theme: users; shares; forwarding; clicks; forwarded.

Table 95 References to digital communication

Token	Tweets
Clicks	.@qiangkki the kpop news sites make it all worse. too much misinformation because they want clicks (2015_03)
Users	Gotta love the misinformation on twitter from users that think they should try to report the news. #Chardon Guess no longer. (2012_03)
Shares	the spread of misinformation on the Internet is not new but still astounding, especially via Facebook "news" shares (2014_12)
Forwarding	Misinformation can be spread easily. I remember co-worker & her friends were forwarding news abt VRA changes will deny Blacks right to vote. (2016_11)
Forwarded	Another excellent write-up. One which shows up the blatant bias/misinformation forwarded by many!! (2013_02)

Where the tokens ‘forwarding’ and ‘forwarded’ are discussed there is very clear pattern: social media is seen as a vehicle for disinformation. However, several different origins of the forwarding are identified, many of which detail relatives and acquaintances as the source.

Table 96 Use of forward/s/ing

Example	File	Tweet
96.1	2018_10	When unpacking the spread of misinformation, it may be helpful to distinguish between social media news spread by bots and dark social messages that are forwarded by friends.
96.2	2020_01	Medyo frustrating mag educate ng older relatives who keep forwarding coronavirus “news” and “tips” on Facebook from clearly unverified sources:(Yes, I believe we should be alert, vigilant and take preventive measures. But NO to spreading undue panic and misinformation. Hay.
96.3	2020_08	Be aware of misinformation about #COVID19 circulating on social media. Ask questions & check where your news is coming from-did it come directly from a reliable source? Or was it forwarded by a distant friend? Learn to identify misinformation to keep yourself and others safe.
96.4	2021_06	My father in-law is a fairweather anti-vaxxer cause his age group is all about forwarding misinformation to each other in their viber chat

		groups. He told me the latest news link states that there will be millions of people dying because of the vaccine.
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In examples 96.1 – 96.4, friends and relatives are listed as the propagators of misinformation, demonstrating the role of peer networks in the dissemination of misinformation. In some examples, the tweets explicitly criticise these disseminators of misinformation, referring to it as ‘frustrating’ (96.2) and nominating them as ‘anti-vaxxer’ (96.4.). These tweets highlight the strain that misinformation can cause in personal relationships, something that has been remarked on in the literature where misinformation, and its correction, can lead to familial conflict and cause friction in relationships (Waddell & Moss, 2023; Malhotra, 2024). This also demonstrates the difficulty with correcting misinformation – it is often embedded into pre-existing social dynamics and relationships where the prospect of challenge/correction may be too daunting. These dynamics can inadvertently strengthen misinformation’s hold, as people may avoid confrontation to preserve harmony in their relationships. This leads to people to ‘vent’ online and disclose these issues in online environments as a form of support (Coltman-Patel et al., 2022), an example of positive online disinhibition (see [Section 2.3.1.](#)) that allows individuals to seek validation and solidarity in digital spaces. This reflects the dual role of social media in both perpetuating *and* mitigating the impacts and stresses caused by misinformation.

The token ‘clicks’ is used in several ways. People refer to ‘clicks’ as the process by which a person goes from passively engaging with misinformation articles to actively engaging them – that is, simply viewing the link to clicking on the article and reading it. Clicks are used as a proxy for interest in a given news article (Kormelink & Meijer, 2018). The term is also used as a metonym i.e., the use of “a simple or concrete concept to refer to something that is more complex or more abstract” (Littlemore, 2015, p. 1). In these uses, ‘clicks’ is a metonym for the misinformation funding model and ecosystem. Clicking through to an article inevitably means viewing online adverts and, whether legitimate or misinformation, modern journalism “increasingly relies on clicks and pageviews” to create revenue streams to remain a viable businesses (Nelson, 2016). In other words, clicks are used to judge which articles are successful or not. Even state-funded news outlets that do not use profit-based models, such as the Qatari-backed Al Jazeera English organisation, monitor clicks for ‘personal validation’ (Usher, 2013, p. 346), demonstrating how important they have become in modern day journalism.

Table 97 Examples of 'clicks' as a metonym for funding models

Example	File	Tweet
97.1	2014_01	The worst of tech news is as bad as far right news. Twisting and bending information. Willingly providing misinformation for clicks .
97.2	2017_08	it must have been so scary and i detest the news sources for being vague, unclear and ready to spread any misinformation for clicks . Ugh
97.3	2017_11	it's kinda fucked up how news outlets started having to depend on misleading headlines to grab attention and get clicks , and that gave rise to secondary sources spreading misinformation based on just the headlines and making their own even more outlandish hooks
97.4	2020_11	A lot of misinformation comes from biased media and social media as they have incentive to gain clicks and readers. But there are news sources that give less unbiased news. We are lumped for many reasons and can be seen as a form of racism and a lack of investment in our people.

97.5	2021_09	Hey, @MaraGay , you're on the NYT editorial board...can't you do something about the easily disproven (and, indeed, already extensively debunked) garbage that @katiekings is putting out? We get that you need clicks , but this is Fox News-level misinformation.
97.6	2021_11	Social media is (rightly) blasted for spreading fear, anxiety and misinformation. But the mainstream media is nearly as bad in some instances. The hunt for clicks and eyeballs is turning them into pale imitations of social media - @JRubinBlogger

The examples in *Table 97* show some uses of 'clicks' as a metonym for, in general terms, money. Many of these uses criticise mainstream media outlets, such as the New York Times, for devolving into outlets motivated only by money, with 'we get that you need clicks' (97.5) and mainstream media in general is chastised for participating in 'the hunt for clicks' (97.6). Examples 97.1-97.4 comment on news outlets deliberately spreading misinformation for money, such as 'misleading headlines to grab attention and get clicks' (97.3) and 'they have incentive to gain clicks' (97.4). Money is an important factor in the spread of misinformation, and this is clearly evident in the Misinformation Corpus.

In an analysis of the revenue generated by ad companies for ads placed on a set of 20,000 disinforming domains, The Global Disinformation Index (GDI) found that "nearly a quarter billion dollars (US\$ 235 million) worth of advertising ends up on domains that have been flagged for disinformation" (GDI, 2019, p. 4). These large sums of money mean producing false content can be extremely lucrative. These tweets also reflect an increasingly difficult climate for profitable journalism. The issue is that "legitimate ad-supported news organizations rely on the same infrastructure and industries" as misinforming ones (Braun & Eklund, 2019, p. 1), and as a result the tactics each may use to attract new readers is the same – including overly dramatic stories, 'clickbait' style headlines, and sensationalist reporting. Additionally, with the pervasiveness of misinformation, traditional news outlets must pivot to catchy headlines because otherwise they will not get the clicks they need to survive (Munger, 2020). This is situated against a backdrop of increasing journalism layoffs and shuttering of news outlets, with at least 8,000 job cuts having happened in the UK, US and Canada alone in 2023 (Tobitt, 2024). Part of the reason for this is because misinformation can be about any topic and is designed with clicks in mind, whereas traditional reporting is constrained by the truth and thus must work harder to be relevant and interesting. This relationship can not only undermine the financial stability of legitimate journalism but also blurs the line between sensationalism and accurate reporting, further complicating the public's ability to discern fact from misinformation. This is just one effect of misinformation, but there are many more – these are captured by the keyword code Effects which is discussed in detail next.

9.3. Effects

Examining public understanding of the effects of misinformation is vital to developing policy and interventions in line with public concern.

Table 98 Effects keyword results

Sub-code	Disinformation % of all keywords	Disinformation number of keywords	Misinformation % of all keywords	Misinformation number of keywords
Effects	6.01%	42	9.53%	47

While the raw number of keywords in this category is similar between the disinformation (42) and misinformation (47) corpus, the proportion of this sub-code as a percentage of all keywords for the given corpus varies (see *Table 98*). This code accounts for 6% of keywords in the Disinformation Corpus, for misinformation it is 9.53%. This means that in the Misinformation Corpus, discussions of the effects of misinformation are more salient in the formation of discourses.

9.3.1. Misinformation and Social Issues

One of the biggest effects of misinformation seen in discussions on Twitter is how misinformation can affect social issues. The keywords in the Effects subcode that fit this theme are shown in *Table 99*.

Table 99 Keywords denoting social topics and issues

Token	Log ratio	Misinformation frequency (per 10,000)	Disinformation frequency (per 10,000)
Stigma	3.44	407 (0.55)	29 (0.05)
Transgender	2.48	180 (0.24)	25 (0.04)
Trans	1.94	363 (0.49)	73 (0.13)
Refugee	1.60	153 (0.21)	39 (0.07)
LGBT	1.50	153 (0.21)	42 (0.07)
Indigenous	1.46	181 (0.25)	51 (0.09)
Welfare	1.44	126 (0.17)	36 (0.06)
Teen	1.42	149 (0.20)	43 (0.08)
Refugees	1.33	315 (0.43)	97 (0.17)
Parents	1.32	1006 (1.37)	311 (0.55)
Bigotry	1.30	587 (0.80)	184 (0.32)
Hindu	1.24	327 (0.44)	107 (0.19)
Teens	1.18	164 (0.22)	56 (0.10)
Sex	1.12	535 (0.73)	191 (0.34)
Xenophobia	1.11	165 (0.22)	59 (0.10)
Community	1.02	1872 (2.54)	714 (1.25)

Each of these tokens is over-represented in the Misinformation Corpus and contributes to a discourse of social harms. Scholars have referred to the “devastating effects of bad information” (Wu & Pan, 2017, p. 38) and it is generally agreed that misinformation can cause social harms (Westgarth, 2019), even if the scale of these harms are sometimes overstated or difficult to assess accurately (Guess et al., 2019). But who or what is harmed? It is fundamental to understand who is affected by misinformation (there is a large literature on this, see [Section 4.1.](#)), and also who is *perceived* to be affected by misinformation.

These social effects are often overlooked and these tokens represent some of those same effects. For example, in a review on whether misinformation is a problem, Adams et al. (2023) impose the top-level classification of ‘societal-level effects of misinformation’, but do not include matters pertaining to social cohesion or misinformation affecting social issues. This is

despite the fact that various studies have shown how the public view misinformation as a threat to social cohesion.

Using survey data in Germany, Bernhard et al. (2024) find that 81% of participants view misinformation as a threat to social cohesion and democracy. In a UK survey, Chadwick and Vaccari (2019) find that nearly a fifth of those surveyed (18.7%) actually share news items specifically with the goal of upsetting others, creating a “mutually-reinforcing relationship between social media and emotional antagonism” (p.12). This shows the picture from both sides: individuals are worried of the social effects of misinformation, while others openly admit to seeking to inflame social relationships with news sharing. It is also not just survey data where the social and civil outcomes of (mis)information sharing are highlighted. In the UK, the government Khan Review (Khan, 2024) into threats to social cohesion and democratic resilience discusses how misinformation surrounded situations such as the Birmingham anti-LGBT school protests (Ferguson, 2019). Elsewhere, Udenze (2021) discusses how misinformation can inflame pre-existing ethno-religious crises and contribute to economic instability in Nigeria.

Despite the clear importance of misinformation and social issues, to date there have been no studies of how misinformation and social issues are discussed in naturalistically occurring (i.e. non-elicited) data. The following section seeks to redress this gap and will look at ‘social issues’ in the broadest sense, that is, when misinformation “negatively affects the personal or social lives of individuals or the well-being of communities or larger groups within a society” (Kulik, 2024).

9.3.2. ‘Stigma’ and ‘Bigotry’

Two keywords in the Effects grouping refer to general negative perceptions of individuals: ‘bigotry’ and ‘stigma’. These terms are not used in relation to social issues (such as specific referents with ‘xenophobia’ etc.) themselves but instead refer to the overarching concern of prejudice against social groups. My use of ‘stigma’ and ‘bigotry’ aligns with the definitions provided in Table 100.

Table 100 Definitions of ‘bigotry’ and ‘stigma’

Word	Definition
Bigotry	Obstinate or unreasonable attachment to a belief, practice, faction, etc.; intolerance, prejudice. (OED, 2023a)
Stigma	figurative. A mark of disgrace or infamy; a sign of severe censure or condemnation, regarded as impressed on a person or thing; a ‘brand’. (OED, 2023j)

When it comes to ‘stigma’, the concepts of misinformation and stigma are often equated. The token ‘stigma’ occurs 409 times, and in 143 of these (35%) of these ‘stigma’ and ‘misinformation’ either occur in a list together or as a pair.

Table 101 Examples of misinformation as stigma

Phrase	Frequency	Examples
‘Stigma and misinformation’ ‘Stigma & misinformation’ ‘Stigma + misinformation’	99	After the opioid overdose death of their 27-year-old daughter, one family is speaking out in the hope they can reduce the stigma and misinformation about #addiction. (2017_11)

		This is bloody amazing news for MSM & the UK! One of the best things to come out of 2020. What isn't amazing is the homophobic, biphobic & discriminatory replies. More needs to be done to educate people & challenge #LGBTQ+phobia, alongside the stigma & misinformation around HIV. (2020_12)
'Misinformation and stigma'	39	Over half of Scotland doesn't know how HIV is transmitted, fostering misinformation and stigma : http://goo.gl/S8ZfG7 #nhsmun (2013_11) RFK Jr. apologizes for comparing #autism to the Holocaust, continues to spread misinformation and stigma . http://theguardian.com/us-news/2015/apr/13/robert-kennedy-apologises-for-holocaust-comparison-vaccines (2015_04)
Punctuation separated list using '-' or ','	5	This data, these facts, should supersede community opposition rooted in stigma, misinformation and fear. Human lives > "community concerns"... (2018_06) #COVID19 cases are going up fast in Pakistan - 150,000 reported cases today, and may reach 1 mil in July. @Pop_Council Dr. Zeba Sathar talks abt the need to protect healthcare providers, combat stigma + misinformation , & provide basic needs. (2020_06)

Misinformation is not just seen as related to stigma and as a vehicle for stigma but it is seen *as* stigma. Misinformation and stigma are often equated and viewed as complementary concepts. There is also crossover here to the medical discourses discussed in [Section 9.1](#). in that many of the references to stigma concern health issues, such as addiction, HIV, and COVID-19.

Stigma plays an important role in perceptions of medical conditions and “for many individuals with special health conditions, stigma is a daily life companion” (Ablon, 2002, p. 2). Non-conforming health as a ‘deviant state’ (ibid) has been studied for a long time through the lens of social standing and social relationships both on a general level, and also in relation to specific physical and mental conditions such as HIV (Earnshaw & Chaudoir, 2009), cancer (Fujisawa & Hagiwara, 2015), suicidal ideation (Schwenk et al., 2010), and dyslexia (Alexander-Passe, 2015).

Stigma can also have severe consequences on individuals. For instance, in a systematic review, Wu and Berry (2018) find that obesity-specific stigma is actually associated with (i.e. may lead to) conditions such as obesity, depression, and anxiety, and is “associated with adverse physiological and psychological outcomes” (Wu & Berry, 2018, p. 1030). Stigma can also increase potential risk factors for health conditions. For example, Rüsche et al. (2014) find that risk factors for suicidality such as social isolation and stress for individuals with suicidal ideation can be increased by stigma, while charities describe how “stigma and discrimination can trap people in a cycle of illness” (Mental Health Foundation, 2024).

In this sense, stigma can be seen as an extension of, or perhaps part of, medical discourse that characterise discussions of misinformation. This is not, however, the whole picture as there are discussions of stigma in relation to other social issues.

Table 102 Discussions of social issues

Example	Files	Tweet
102.1	2016_10	"Due to stigma , misinformation, and false beliefs about aging , [older adults] frequently go without adequate care." http://buff.ly/2fUF5vj
102.2	2018_01	280,000 tip offs in the last two years against benefit fraud have led to... Nothing. That's right, no evidence. How much will this news penetrate the stigma and misinformation caused by this government and the media?
102.3	2019_05	Shame, Stigma , Misinformation Compound Food Insecurity Problems - The Rampage Online #futureofag From @WIAgLeader
102.4	2021_04	Vancouver rally draws accusations of transphobia , misinformation
102.5	2021_02	It's clear to us that Stuart Robert is not interested in listening to, or understanding the realities of people living with disabilities OR sex workers . This is a harmful move fuelled by stigma and misinformation.
102.6	2021_08	OPINION: To prevent stigma and misinformation from spreading like wildfire, we can use moments like DaBaby's controversy to address homophobia and misinformation in the Black community .

In these examples, an array of social issues, and social consequences, are discussed. These include elder care (102.1), class discrimination (102.2), food insecurity (102.3), transphobia (102.4), disability and sex work (102.5) and the intersection of homophobia and race (102.6). In all these cases, misinformation is seen as 'compounding' (102.3) the social issue leading to 'harm' (102.5). In other examples however, the role of misinformation is stated more implicitly, such as example 102.6 which discusses how to 'prevent' and 'address' misinformation but does not explicitly label it as a harm. What is present here is that again stigma and misinformation are treated as closely related concepts. A similar finding can be seen with the token 'bigotry'.

Table 103 Types of bigotry

Type	Example	File	Tweet
General bigotry	103.1	2012_08	help fight intolerance, misinformation and bigotry and Fox News!
	103.2	2017_08	The replies to CNN and news stories happening on here is astonishing. So much ignorance, misinformation, and bigotry it is terrifying
	103.3	2021_07	I don't want to go to all the hassle of moving my online shop elsewhere, @sainsburys, but I will if you continue to fund the dangerous misinformation and bigotry on GB News. This stuff matters - the arc of history won't bend towards justice on it's own, it needs our help.
Specific bigotry	103.4	2012_02	Same-sex marriage opponent offers bigotry , misinformation: Here is what Mr. Zwald apparently does not know: a nu... http://bit.ly/wDBiBr
	103.5	2014_10	The effects of triggering dormant bigotry by repeating misinformation re immigration

	103..6	2019_12	JK Rowling's bigotry and transphobia isn't news to many of us, but the repeated use of her platform to spread misinformation and hatred goes against every lesson those books taught us. She's become the villains she wrote about.
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The token 'bigotry' however is less medicalised, and is used differently. Interestingly, while tweets regarding stigma often explicitly state what they think is being stigmatized, the same is not the case for 'bigotry'. The term is used in a much more general sense. Examples 103.1-103.3 above, all pertaining to news networks, remark on bigotry but do not say who or what is the victim of this bigotry. Examples 103.4-103.6 specifically comment on bigotry in reference to social issues, namely same-sex marriage, immigration, and transgender rights.

It is also important to clarify that the social element of misinformation is intricately connected to the technical aspect of how social media platforms operate and how misinformation is shared.

Different parts of social media facilitate different types of social interaction. For example, a non-text delimited forum that is designed for in-depth interactions is likely to foster a different kind of social relationship than a text delimited tweet that is sent out to the public. As a result, we should not divorce the social from the technical aspects of misinformation sharing. This can be seen with the online disinhibition effect (Suler, 2004), where we know that anonymous settings can affect communication (Lapidot-Leffler & Barak, 2012; Hollenbaugh & Everett, 2013). As a result, misinformation will have different effects in different online settings.

It is well understood that certain populations are more vulnerable to misinformation than others (Guess et al., 2019; Mu et al., 2022), but this will also vary depending on the technical aspects. For example, the social effects of misinformation in a closed Facebook group for a local community will be different to the effects of misinformation on a public video sharing app like TikTok. I have summarised in *Table 104* how different digital contexts affect social outcomes of misinformation using real-world examples.

Table 104 Digital contexts and social outcomes of misinformation

Technical Settings and Audience	Misinformation	Outcomes	Reference
Closed Facebook groups for local communities	False reports of missing children, injured pets, and serial killers at large.	Community tensions, parental fear.	Full Fact, cited by Belle and Marsh (2023)
'Nextdoor' app. Hyperlocal social media.	Rumours of 'suspicious' individuals.	Racial profiling.	Vaughn-Hall (2024)
TikTok. US voters.	LGBT Community Center will use taxpayer money for organised sex.	Withdrawal of government funding for LGBT services.	Kane (2024)
'Pregnancy & Baby Tracker' app. Expectant and current parents.	Parents should not vaccinate during pregnancy.	Health anxiety, increased vaccine hesitancy, emotional manipulation.	Oremus and Feters Maloy (2021)

'Telegram' encrypted messenger, private channels.	Political misinformation, such as fabricated arrests of politicians.	Breakdown of social cohesion, inflame racial and ethnic tensions	Frenkel (2021)
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Bad actors have 'miniaturised' misinformation campaigns to avoid detection (Frenkel, 2021), but these smaller scale operations have another effect: they abuse the trust and social capital associated with private online spaces such as groups and channels. Bouchillon (2019, p. 620) finds that users who "actively socialize in [Facebook] groups are more likely to trust in the average person", meaning they may be more likely to fall for misinformation as they place greater trust in others. Further, in online settings individuals can feel more comfortable interacting with strangers than they would offline (Zaphiris & Ang, 2009; Valkenburg & Peter, 2011), leaving them open to interacting with people a) who they do not know, and therefore b) people whose intentions and motives for spreading (mis)information they also do not know. Additionally, given that "internet relationships tend to develop closeness and intimacy more quickly than do real-life relationships" (McKenna et al., 2002, p. 20), the speed from which we go from stranger to trusted source of information can be quicker than that of offline communication. This means that false content may not only spread more easily due to greater trust, but also more quickly.

Furthermore, the algorithmic ranking on websites such as Facebook already reduces exposure to ideologically diverse news and opinion (Bakshy et al., 2015). These groups create focused, ideologically narrow spaces where users increasingly only interact with others who share their same opinions, creating 'ideological segregation' (González-Bailón et al., 2023). The sociality of these private channels can also further compound issues. Given that social concerns are a key barrier to individuals standing up to misinformation on social media (Gurgun et al., 2024, p. 6), a lot of misinformation may go unchallenged as people are keenly aware of social standings and social relationships, creating an 'online silence' in which misinformation spreads undisputed (Gurgun et al., 2023). The interface of trust, speed of relationship development, the formation of echo chambers, and hesitancy to correct others, means that private/closed social media spaces can be a uniquely fertile ground for the spread of misinformation.

There are similar issues for other digital spaces, such as the concerns that recent shifts to end-to-end encryption by companies such as Meta will lead to the increased propagation of misinformation. This has already been reported on WhatsApp where encryption has allowed the app to be "extensively abused to create and spread misinformation" (Reis et al., 2020, p. 1). This is because encrypted messaging apps (EMAs) are often associated with "higher levels of trust and social capital" due to the privacy they afford users (Gursky & Woolley, 2021, p. 5), therefore making them "attractive to disinformation campaigns seeking to abuse that trust" (ibid). This exacerbates pre-existing social issues and can also contribute to new ones. The result is, EMAs can be used to "hyper-target minority communities, exacerbate existing political and social tensions, and even inflame violence" (Gursky & Woolley, 2021, p. 2). In other words, technical issues such as encryption have outcomes for social issues such as trust, abuse, and marginalization.

9.3.2.1. *Stigma and bigotry as near-synonyms*

While much of this thesis has focused on complementary concepts to dis- and misinformation in terms of deception and various competing terms for false news, this is the first finding that shows how a different concept (i.e. not one inherently related to deception) is closely linked to misinformation. Throughout the data, misinformation is seen as a means of stigma and bigotry,

and as something that exacerbates existing prejudice. There are also parallels here to the complementary concepts of false information discussed in [Chapter 7](#), where we see various complementary terms such as ‘licentious discourses’ and ‘whispers’ that are often used alongside the term ‘false news’. This demonstrates how misinformation does not exist in isolation as a concept. Specifically, these patterns of use demonstrate that people are keenly aware of the harmful effects it can have. In other words, misinformation is more than just misinformation – it is situated into a wider context of social stigma, marginalisation, and discrimination. That social issues are seen as inherently related to misinformation for many people should inform how we respond to it.

9.4. Response

Understanding how the public view responses to misinformation is important in their implementation and eventual success. Consonance between public opinion and interventions is important so a) the public understand why measures have been introduced, b) policymakers are seen as addressing real world concerns, and c) the intervention does indeed address the real-world concern. In other words, is there congruence between public policy and public discourses on misinformation countermeasures? The following analysis will investigate this question to explore how responses to misinformation are represented in the Twitter corpus. Firstly, however, I will discuss the role of the relationship between public policy and public opinion before focusing on my findings.

9.4.1. Public Opinion and Public Policy

There is a great deal of literature on the (lack of) interaction between public opinion and public policy. While it is well beyond the scope of this thesis to go into the intricacies of this research, the following offers a useful summary of the field:

[P]ublic opinion is an independent variable—an important driver of public policy change—but it is also a dependent variable, one that is a consequence of policy itself. Indeed, the ongoing existence of both policy representation and public responsiveness is critical to the functioning of representative democracy.

(Wlezien & Soroka, 2021, p. 1)

There is a dyadic relationship between opinion and policy, but whether this leans more in the favour of one or the other is disputed (Manza et al., 2002). In other words, “no one believes that public opinion always determines public policy; few believe it never does” (Burstein, 2003, p. 29) and there is a middle ground, which is dependent on various factors such as geographies and the issues/policies at hand. But it is this dyadic relationship between the two that is important, because policy can affect opinion, and opinion can affect policy.

Specifically, there is growing recognition that “the interactions of the public, leaders, and the media [...] are interdependent” (Baum & Potter, 2008, p. 40) in the shaping of policy. This includes social media, which has an increasingly “significant role in shaping, directing, and even changing public opinion, which in turn can influence the direction of broader social, political, and economic events” (Ausat, 2023, p. 36). Analysing social media discussions allows us to track policy attitudes; it can be very beneficial in complementing existing means of understanding policy reception and can “provide policy makers with insight to inform targeted and timely interventions” (Yeung, 2018, p. 3).

Of course, policy is not the only response to misinformation. Social media platforms and tech companies also have responsibilities in combatting the spread of false content. Similarly, when these companies take action and make platform changes, these may be viewed by users as inconveniencing them if they do not appear to be justified or proportionate ([Section 4.7.](#) has already given an overview of social media companies' misinformation (counter)measures). The following section will explore how government, company, and other misinformation countermeasures are discussed in the Misinformation Corpus.

9.4.2. Regulation

Regulation is an important part of tackling misinformation but is also arguably one of the most difficult to implement. Misinformation legislation has been proposed or enacted in at least 50 countries across five continents (Funke, 2021), and these range from 'soft regulations' such as improving digital literacy to 'hard regulations' including criminalisation and imprisonment (Flamini & Funke, 2019). It is, however, difficult to measure if any of them have helped mitigate the spread of false content (see [Section 4.8.](#)). There are various reasons for the difficulty of legislating, as summarised in *Table 105*.

Table 105 Key Challenges of Misinformation Legislation

Challenge	Description
Definitions	Definitions of disinformation and misinformation are not agreed upon. Disinformation can also be subjective, meaning developing a regulatory framework with a 'one size fits all' approach can be very challenging. This can lead to unregulated areas or loopholes.
Scope	False information comes in many forms and can be spread by individuals, politicians, companies, etc. Deciding who/what is and is not regulated is complicated and may also encroach on pre-existing regulatory bodies such as advertising, medical, and food regulators etc.
Jurisdiction	False content spreads in print, broadcast, online, and through various other mediums. Often the platforms on which content is spread (such as social media services) are not based in the UK, making punishment for breaching regulation more difficult.
Freedoms of speech and press	Regulating misinformation means regulating what people and cannot say, and this is fundamentally incompatible with some country's and region's free speech protections, such as the United States or the European Union.
Third-person effect	The third person effect is the idea that "presumed media effects on others tend to be greater than perceived media effects on self" (Chung & Moon, 2016, p. 312). A body of research has shown how this can apply to misinformation too (Liu & Huang, 2020), meaning many people may feel like they do not need regulating.
Misappropriation	Many counter-misinformation laws have been passed as a means of persecuting journalists who criticise governments (Funke, 2021). Consequently, there is a great amount of scepticism surrounding regulation and government misuse of regulation.

Despite all these complex concerns, and the potential perils of regulation, regulation is viewed overwhelmingly in the data as a good thing. The keyword 'regulator' occurs 170 times (23.69 per M) in the Misinformation Corpus (note that 'regulation' is a keyword at 274 (49.41 per M) in the

Disinformation Corpus). Looking at uses of ‘regulator’ as part of the wider discourse of ‘Response’ shows tweets praising regulators and calling for greater regulatory powers.

Table 106 Examples of the token 'regulator'

Example	File	Tweet
106.1	2015_06	dear @PMOINDIA what wl it take 2 convince u.V need regulator 4 media urgently.slander misinformation instead of news
106.2	2018_08	In order to fight misinformation and hate speech online, we need a new regulator with the powers to shut down hateful people online as that will stop the hate speech that led to brexit. #FBPE #Stopbrexit
106.3	2019_12	There should be some mechanism to check/stop peddling of such deliberate misinformation by mainstream media. Is there any regulator or ombudsman for them?
106.4	2021_01	I've been following the election for a while now from the UK. I'm shocked at the lies and misinformation which is passed off as factual news. Surely there needs to be a regulator that can censure businesses for spewing out these lies.
106.5	2021_03	@POTUS President Biden, thank you for speaking out against hate. Isn't it time you created a regulator for cable news channels and radio news & opinion channels. There are some right wing media sites that spew hatred for "others" & misinformation daily.
106.6	2021_03	The broadcaster took the decision tho didn't they? They weren't forced. If anything u should want some kind of regulator given the fact media outlets are almost creating cults at this point through misinformation. The U.K. dreads having a Fox style outlet.
106.7	2021_03	No, this is the completely wrong thing to take away from this. Ofcom hold broadcasters to account for their misinformation and conduct. This is why Fox News could not operate here and the lack of a regulator in the US is why you have Fox and Fox spin offs.
106.8	2021_04	Maybe it's time for a cable news regulator with powers to add disclaimers, impose penalties for egregious misinformation leading to public harm?

Discussions largely focus on the (lack of) regulators in India, Australia, the US, and the UK. Example 106.1 refers to the ‘urgent’ need for a regulator in India, example 106.2 suggests there should be an expansion of regulatory powers to ‘fight misinformation and hate speech’, while examples 106.3, 106.5 and 106.8 call for the introduction of a regulator. Interestingly, the UK’s communications regulator Ofcom is often positioned as an example for the rest of the world to follow. In example 106.4, the user reports being ‘shocked’ by events in the US from a UK perspective, example 106.6 says other countries ‘should want’ a UK-style regulator, and example 106.7 praises Ofcom as they ‘hold broadcasters to account for their misinformation’.

Regulators are also seen as either absent or possessing insufficient powers. Overall, people want regulators, they want regulators to do more, and they bemoan the lack of powers invested in regulators. There are times when regulators are criticised, but this is uncommon in the data.

Table 107 Criticism of regulators

Example	File	Tweet
107.1	2014_03	But UK @ChtyCommission doesn't give a damn about misinformation. Another useless regulator http://ab.co/1ehHPxZ
107.2	2021_08	And yes, I've been made aware there actually was a couple of short lockdowns. My bad, I'm not victorian. Also, the source of this misinformation campaign is Peta Credlin. Direct your ire towards Sky News and/or the media regulator .
107.3	2021_08	..Where was the regulator during the Fires..?..I'm still getting told of the damage those Greens Arsonists did.. Where was the broadcasting regulator when Sky News Australia was airing misinformation about Covid-19?

Example 107.1 discusses how the Charity Commission for England and Wales, the body responsible for registering and regulating charities, has failed in their duty of care and does not 'give a damn about misinformation'. This highlights the inherent 'messiness' of misinformation regulation. The issue is that as misinformation can be about any topic, there is regulatory crossover as to who should address it. For example, there are around 90 regulators in the UK covering areas such as education, healthcare, charities, transport, communication, utilities and the environment (National Audit Office, 2022). Taking the example of the Medicines and Healthcare products Regulatory Agency (MHRA), the body responsible for regulating medicines and medical devices, we see that the body has strict legal regulations for medicines and medical devices but has less power to correct online misinformation:

UK Parliament. Written questions, answers and statements.

Health: Products. UIN 180915. Question for Department of Health and Social Care

Question: To ask the Secretary of State for Health and Social Care, what steps his Department plans to take to tackle misinformation on healthcare products (a) online and (b) in communities. (Rachael Maskell, MP, 17 April 2023)

Answer: The Department works with its executive agencies, the Medicines and Healthcare products Regulatory Agency (MHRA) and the UK Health Security Agency (UKHSA) to counter misinformation on healthcare products. The MHRA regulates medicines and medical devices, with such products subject to strict legal control, and works across the health and social care sector in tackling reports of misinformation. It works closely with the UKHSA's National Alert and Assessment team and has discussed this issue with the Department for Culture, Media & Sport in the context of the Online Safety Bill.

When the MHRA receives any reports of misinformation, consideration is given to the source of the misinformation and the impact that it is having. Where necessary, the MHRA will contact media outlets to correct any misinformation within their content and works with factchecker organisations to provide authoritative information to help address misinformation. (Will Quince MP, 5 May 2023)

(UK Parliament, 2023)

The parliamentary question above sheds some light on this. The issue here is that the MHRA can strictly enforce medicines and medical devices and their implementation in the UK, but does not necessarily have jurisdiction on restricting the spread of false information surrounding

medicines and medical devices. The MHRA work with the UKHSA and the DCMS and will contact the press to correct claims but cannot compel them to do so. The Online Safety Act which was introduced in 2023 and is enforced by Ofcom makes one mention of medical issues, which is in relation to the drafting of codes of practice:

In the course of preparing a draft of a code of practice or amendments of a code of practice under this section, OFCOM must consult—

[...]

persons whom OFCOM consider to have expertise in public health, science or medicine that is relevant to online safety matters,

(UK Government (Regulation: 2023 c. 50), 2023b)

An erroneous claim in a medication leaflet is MHRA jurisdiction, false broadcast advertising for benefits of medication is the Advertising Standards Authority's (ASA) jurisdiction, the Independent Press Standards Organisation (IPSO) is responsible for newspapers and magazines, and online "illegal content and activity, and content and activity that is harmful to children" is Ofcom's responsibility. It is unclear which of these regulators, if any, would be responsible for individual instances of health misinformation online, or coordinated misinformation activities online. Another compounding factor is the source of the content: all these regulators naturally cover the UK, but this is complicated when misinformation spreads on supranational mediums such as social media.

While in the data users are generally in favour of regulation and the expansion of regulatory powers, especially a UK model, it appears there is some confusion regarding who is responsible for what, especially with the rise of social media and internet-based misinformation.

9.4.3. Factchecking

While policy is one possible intervention, there is also an important role for factchecking. Factchecking refers to the "publishing an evidence-based analysis of the accuracy of a political claim, news report, or other public text" (Graves & Amazeen, 2019, p. 1) and is often carried out by for-profit companies such as news outlets (e.g. Reuters Fact Check or AFP Fact Check) alongside third-sector/not-for-profit organisations and dedicated factcheckers (e.g. Full Fact or Africa Check). According to the Duke Reporters' Lab factchecking census, in 2023 there were 417 factcheckers active globally working in 69 languages across 100 countries (Stencel et al., 2023). Despite growth in previous years, this number is similar to 2021 and 2022, suggesting that "[f]act-checking's growth seems to have leveled off" (Stencel et al., 2023, n.p.).

Factchecking as a term is a slight misnomer, as the process does not just refer to factual corrections, but also the addition of context where it can help to improve understanding. For example, Twitter introduced its Community Notes feature in 2021 that allows select users to add additional context to posts to prevent misleading content (X, 2024a). The tokens 'checking' and 'checkers' are both key in the Misinformation Corpus.

Table 108 Frequency of the keywords 'checkers' and 'checking' as individual tokens

Tokens	Log ratio	Misinformation frequency (per 10,000)	Disinformation frequency (per 10,000)
Checkers	1.21	605 (0.82)	202 (0.35)
Checking	1.04	1975 (2.68)	741 (1.30)

Unsurprisingly, these tokens often occur as part of the phrases: ‘fact-checkers’, ‘fact-checking’, ‘fact checkers’, and ‘fact checking’. *Table 109* below shows that for each token, the vast majority of occurrences appear as a phrase, namely 99% of hits for ‘checkers’ and 84% of hits for ‘checking’.

Table 109 Frequency of 'checkers' and 'checking' in phrases

Phrase	Frequency (per 10,000)	Percentage of all occurrences	Percentage grouped
‘Fact-checkers’	407 (0.55)	67%	99%
‘Fact checkers’	191 (0.26)	32%	
‘Fact-checking’	1,103 (1.50)	56%	84%
‘Fact checking’	557 (0.76)	28%	

Two topics in the data dominate discussions of factchecking: 1) elections/politics and 2) COVID-19. Factcheckers are seen as addressing election and political claims, a deviation from the norm so far which has revolved around medicalised discussions. Discussions of health factchecking of course pre-date COVID-19 in the data (see example 104.1), but they occur much more frequently in relation to COVID-19 discussions. Large tech platforms are also often placed at the centre of these discussions, with companies such as Facebook in focus.

Discussions of political fact-checking focus on the need to address right-wing claims online, electoral safeguarding, and how in general we need more fact-checking. Discussions are not restricted to any one country. Examples can be seen in *Table 110* below.

Table 110 Calls for increased factchecking

Example	File	Tweet
110.1	2016_09	@HillaryClinton News Media is doing better job, fact checking , exposing Trump's lies, spin, misinformation, this will make a difference 4you
110.2	2019_04	CEO Mark Zuckerberg: Facebook has already toughened its rules on political advertising in Europe & ramped up efforts to fight misinformation by partnering with German news agency DPA to boost fact checking , but cannot promise interference-free E.U. elections
110.3	2019_11	Inventor of the World Wide Web accused @Conservatives of spreading misinformation Sir Tim Berners-Lee described renaming of a Tory Twitter account as a fact checking body as "impersonation". ,That was really brazen,It was unbelievable they would do that."
110.4	2020_08	Kathleen Hall Jamieson on social media companies flagging misinformation: I'd be much more comfortable with the idea that the corporate entity incentivizes a process by which there is aggressive fact-checking of everything that is on its site...

These tweets collectively reflect the complex representation of fact-checkers as both simultaneously being essential agents in combating misinformation (110.1 and 110.2) and as entities vulnerable to co-optation or limitations in their effectiveness (110.3 and 110.4). These varied perspectives highlight a broader tension between the potential applications – and positive outcomes – of factchecking to safeguard elections and the difficulties of ensuring

factchecking is effective in practice. This tension could also demonstrate a greater need for transparency and accountability in how factchecking is conducted, particularly to maintain public trust in its outcomes of factchecking in the face of criticism. For example, in January 2025, Meta CEO Mark Zuckerberg said of fact checkers:

First, we're going to get rid of fact-checkers and replace them with community notes similar to X starting in the US. After Trump first got elected in 2016, the legacy media wrote nonstop about how misinformation was a threat to democracy. We tried in good faith to address those concerns without becoming the arbiters of truth, but the fact-checkers have just been too politically biased and have destroyed more trust than they've created, especially in the US. (Zuckerberg, 2025).

For some individuals and groups, attacking factcheckers is politically expedient because it allows them to undermine the credibility of information that challenges their (dominant) narratives. Discrediting factcheckers as biased leverages distrust in mainstream media and institutions, framing factchecking efforts as part of a broader agenda to suppress freedoms of speech and expression. Such attacks can also shift the focus away from the misinformation being addressed, reframing the issue as a debate about fairness or free speech rather than factual accuracy. This shows an inherent vulnerability of factchecking – it is prone to political attacks.

Despite this, references in the data overwhelmingly favour of the practice of fact-checking and its expansion. One reason fact-checking/checkers appears to be appearing with misinformation is due to the idea of fact-checkers protecting the public from unknowingly falling for false content – something we would expect to see in data discussing misinformation. Fact-checkers are seen as a line of defence helping prevent public deception, and this could explain why the terms appear alongside misinformation more than they do disinformation. Elsewhere, as is common throughout the Misinformation Corpus, there is a focus on health topics and fact-checkers.

Table 111 Discussions of health topics and factcheckers

Example	File	Tweet
111.1	2012_09	No form of #typhus is transmitted by #bedbugs. Poor fact-checking results in an epidemic of misinformation. http://idus.co/PNYmMj
111.2	2018_02	ICYMI: Dubawa: Data and fact-checking are the antidote to misinformation — Statistician-General http://dlvr.it/QJ8TCx
111.3	2021_01	Great news! We find people who viewed a misinformation post attached with a fact-checking label had more positive vaccine attitudes compared to those who viewed a post without. Users also rated universities and health institutions higher in expertise compared to other sources.

In examples 111.1 and 111.3 above, the tweets discuss fact-checking in relation to medical topics, namely typhus and vaccine hesitancy. Health and medical topics have been shown to permeate other discourses and topics, serving as an undercurrent throughout representations of misinformation. This demonstrates how dominant discourses shape the representation of misinformation, foregrounding health issues and health perspectives in the data. There are also metaphorical uses of health topics here too. One of the uses refers to poor fact checking

leading to an ‘epidemic’ while the other says that factchecking can act as an ‘antidote’ to misinformation.

9.4.4. Misinformation and Metaphors

Examples 111.1 and 111.2 above demonstrate the conceptual metaphor (Lakoff & Johnson, 1980; Lakoff, 2006a) MISINFORMATION IS DISEASE – specifically, a virus and subsequently, falling for misinformation constitutes viral transmission. Of course, internet virality has become a conventional metaphor (Mitchell, 2012; Collins & Koller, 2023) with popular internet or social media items often described as ‘going viral’. This metaphor, if we tease it out further, maintains that because misinformation is a disease, we can protect against it through prophylactic measures. It holds that because we can prevent disease through medication or vaccination, we can do the same with misinformation. Such metaphors are not just present in everyday discussions of misinformation, but are also frequently used in academic texts. For example, Lewandowsky and Van Der Linden (2021) have a titular reference to misinformation ‘inoculation’, while Yeo and McKasy (2021) refer to emotion and humour as ‘antidotes’ to misinformation. While these metaphors can be a useful way to understand and conceptualise misinformation countermeasures, they also oversimplify the topic.

Eadon and Wood (2024), in reference to misinformation metaphors, note that they are “as restrictive as they are illuminating” and that “once used, a metaphor also applies constraints to the way in which a phenomenon can be understood” (Eadon & Wood, 2024, p. 1). Specifically, embodied health metaphors that frame misinformation in terms of viral/virality and infodemics lead to an over-extension of the source domain, which results in the misapplication of concepts such as inoculation to something that, fundamentally, cannot be inoculated against. While it is of course possible to reduce or mitigate susceptibility to misinformation in certain contexts delivered in certain modes, as shown by experimental research (Roozenbeek, Van Der Linden, et al., 2020; Maertens et al., 2021), there is simply not the body of research present to indicate that across the board inoculation against misinformation is possible.

One proposed reason for this use of metaphors is presented by Eadon and Wood (2024):

In mis- and disinformation studies, a constellation of analogous concepts are defined in multiple ways across multidisciplinary literature(s) and institutional contexts. Misinformation, disinformation, and conspiracy theories are often conflated or lack specific, portable definitions across fields of study. At times, they remain entirely unscrutinized. Metaphor is often leveraged in place of this definitional work and alongside it come normative assumptions that often impose values, imply deficiencies and/or guilt and assume intent or agency. (p.7).

The authors propose that due to the lack of consensus and agreeability on what actually constitutes disinformation or misinformation, metaphors are introduced to fill the conceptual void. The authors frame this as a ‘definitional’ problem. I agree with this based on the key findings from this analysis, which reveal that disinformation and misinformation extend beyond their dictionary definitions and carry additional nuanced meanings. There have been similar findings in other related concepts regarding the limited utility of metaphors.

Geiß et al. (2021) argue that echo chamber metaphors can lead to ‘severe misinterpretations’ (p.660), while Simon and Camargo (2021) note that the ‘infodemic’ metaphor can be confusing as it “conflates multiple forms of social behaviour, oversimplifies a complex situation and helps constitute a phenomenon for which concrete evidence remains patchy” (p.2219). A common

thread in the criticism of these metaphors is an over-extension, or an over-borrowing, from the source domain. In other words, people begin treating the target (disinformation) too much like the source (disease). This can be seen to an extent in example 111.2 above – where factchecking is presented as an antidote, vastly overstating its ability to curb misinformation.

There is also another concern here. We inherently view disinformation and misinformation as negatively marked online behaviours (NMOBs) (Hardaker, 2010), and so equating them to health issues implies that these health issues are somehow moral issues. Consequently, because “metaphors for mis- and disinformation implicitly equate health with virtue” (Eadon & Wood, 2024), it can lead to a discourse in which we are implicitly saying that those with illness are somehow ‘bad’. The reality is that misinformation does not spread like a communicable disease (Simon & Camargo, 2021) and that this metaphor actually removes agency from the issue and positions people as becoming infected with information (Jenkins et al., 2013), omitting the role of the active decisions made in some people’s belief of false content. We see this in example 111.1 where a failure of factchecking is declared as the cause of an ‘epidemic’, blaming individuals (in this case factcheckers) for bringing about a metaphorical illness.

These metaphors also represent another way in which misinformation is used in medical contexts. While the label ‘misinformation’ referring to medical topics served to avoid blame, here we see misinformation framed as a medical issue itself, and something that can be ‘treated’. This opens up the possibility to evaluate who administers the ‘treatment’ and their success in doing so. Finally, the relationship between health and misinformation may be cyclical: misinformation is framed as a health issue, but misinformation also discusses health issues frequently, and these semantic concepts feed into each other.

9.5. Conclusion

This chapter has explored how some tokens are used more in a corpus of tweets containing the term misinformation only, in comparison to a corpus of tweets containing the term disinformation only. Misinformation is discussed in a distinct, characteristic way. The patterns of discourse surrounding these overused tokens are not unique to misinformation – they indicate a stronger association but not exclusive usage. Nevertheless, the discourses discussed in this chapter are characteristic of a wider picture of misinformation. One of the key findings is that health as a topic permeates many discussions and is a recurring theme throughout many of the findings.

Health drives many of the discourses and through manual, qualitative analysis we see health-focused topics occurring repeatedly. However, while health permeates many discussions it is not the only thing at play. We see that health interacts with core concepts such as blame and metaphorical representation of issues, and there is also increased discussion of misinformation as a social harm, pro-interventionism attitudes, and the ways in which false content spreads, especially digitally.

The method of a comparative keyness analysis complemented by thematic grouping and manual, qualitative close readings of concordance lines proved fruitful as a way into these large corpora. The method allowed for the integration of effect size and confidence measures alongside ensuring that due nuance was given to tweets through close-hand analysis. Through this method we see that health discourses were important in the data, but not the only pattern. It helped reveal how people feel about interventions, that misinformation is sometimes seen as

synonymous with bigotry and harm, and that people are keenly aware of computer-mediated misinformation through technologies such as WhatsApp.

There were many overused tokens that could not be discussed in this chapter due to space constraints, but together the findings analysed form patterns of discourse that fundamentally show that misinformation, and disinformation are not discussed in the same ways on the social media platform Twitter. This has serious implications for how we understand exactly what misinformation is, how we use the term in public communications, and how we act against misinformation making sure to take diverse public perspectives into account.

10. Conclusions

It always does harm to give out misinformation in the guise of information.

Proceedings of the National Conference of Charities and Correction. (National Conference of Charities and Correction, 1886)

The following chapter will present a summary of the key findings and implications from the three previous analysis chapters. Each research question is presented in turn and then a comparison is made for RQs 2 and 3. I then provide some critical commentary on the theory and methods that this thesis used and the utility of these approaches in studying disinformation and computer-mediated communication. This section leads into some key limitations of my data and analytical approach before discussing areas for future research. Specifically, I highlight two analytical routes that were not possible in this thesis due to word restraints and explain how these could be used to further dive into the data. Finally, in my concluding remarks I reflect upon disinformation, how it has changed over time, and where it could lead us in the future.

10.1. Summary of Findings

The sections below will distil the core findings from each RQ and explain the implications of these for disinformation research alongside counter-disinformation policy and education.

1. What is disinformation?

The goal of [Chapter 7](#) was the data driven formation of disinformation theory using real-world examples. The purpose of this was to critically examine the terminology and constructs surrounding disinformation. This analysis helped to demonstrate the complex nature of disinformation and associated concepts such as misinformation, fake news, false news, and others.

To answer this question, I used a mix of pre-existing corpora (Helsinki corpus; EEBO corpus; NOW corpus) and a custom-made corpus of crowdsourced definitions of disinformation from multiple sectors and industries, which were complemented by Google Trends web query data. Using a combination of concordancing, semantic tagging, and mixed quantitative-qualitative analysis, I examined how disinformation has evolved over the centuries and the implications this has for modern day understandings of the term.

The historical analysis showed that the term ‘fake news’ dates back to 1893, and experiences increased usage throughout the 20th and 21st centuries. This term however is pre-dated by ‘false news’. Examining a large historical corpus showed that when we have a high threshold for what constitutes written ‘false news’ we can date the term to 1672, but if we are less stringent then it can be dated further back 1534 – 491 years ago. Importantly, this analysis also shows various other competing terms and near-synonyms over the years that accompanied the term ‘false news’, such as ‘half whispers’ and ‘licentious discourses’. This demonstrates that there has always been competing terms for the same phenomenon: in the present day we see a conflict between disinformation and fake news, and in historical periods we also see these conflict just with different terms.

One of the starkest findings, based on crowdsourced definitions of disinformation, was that many people across sectors and industries talk about fake news, disinformation, and misinformation yet simply do not even define it. This is concerning given there is already confusion around these terms. The quantitative analysis led to three recommendations for defining disinformation: (1) both deception (a lack of veracity) and misleading (mixed truth and deception) should be mentioned to highlight that articles are often a mix of truth and falsehoods; (2) we should clarify from the start whether information or news is being referred to; (3) intentionality must be mentioned to separate disinformation from misinformation, satire, and misreported news.

The qualitative analysis led to three further conclusions. The first was that there is no agreed upon retronym for disinformation that accounts for non-deceptive news. Additionally, it is clear from the analysis that it would be beneficial to distinguish between the process of disinforming and the existence of disinformation, as the conflation of these terms often leads to definitions of the term which are very broad in scope. Specifically, it is suggested that the motivations for the production of disinformation should occur in a definition of the verb and not the noun, which would in turn help to simplify definitions of the noun.

In combining theoretical analysis with the exploration of real-world data, this analysis identified several weaknesses and contradictions within the current field of disinformation studies. I would suggest that these issues have always been present, as shown by the examination of the historical data. This chapter highlighted we still have a long way to go when it comes to disinformation theory.

2. What are the discourses of the term ‘disinformation’ on Twitter?

To investigate the discourses that surround the term ‘disinformation’ on Twitter I carried out a comparative keyword analysis, using the ‘misinformation’ data as a comparator corpus. To preface this, I first carried out a wordlist analysis of the corpus in which I explored the themes capturing the words that were exclusive to the disinformation word list when contrasted to the Misinformation Corpus. This allowed me to get a good sense of the data early on and began to reveal patterns that were borne out in the later analysis.

The keyword analysis enabled me to extend systematically and on a larger scale. Through multiple rounds, I devised and honed a keyword classification scheme to group the keywords into thematic categories. I decided to do this manually, rather than using a tool like a semantic tagger, as it allowed me to capture more nuance in how the terms were used in the data. They keyword grouping allowed me to foreground the themes and categories that were over-represented in the Disinformation Corpus, and therefore could shine some light on the differences between disinformation and misinformation. This analysis showed one major difference: that reference to disinformation actors, whether countries, entities, government, groups, or individuals, dominated discussions of disinformation and were considerably over-represented compared to discussions of misinformation.

[Chapter 8](#) showed that real world usage and understandings of disinformation are – perhaps unsurprisingly – much broader and more complex than dictionary definitions of disinformation that simply label disinformation as intentionally false content, often contrasting it to misinformation. Intentionality is a core influence in how discourses of the term are constructed online. This has implications for those who seek to remove intentionality from definitions of disinformation on the basis that it is not necessarily operationalizable (see discussion of

Baptista and Gradim (2022) [section 3.1.](#)); the analysis showed that blame is a key part of disinformation, and so removing intentionality from definitions means they may be at odds with public understanding of the concept.

Inspecting further patterns of usage of the word disinformation showed that discourses go much further beyond intentionality and blame, and highlight a range of distinct but also complementary ways in which the term disinformation is used. This includes who is responsible for the content; who is harmed by the content; the sensationalization and dramatization of disinformation as a concept; how serious disinformation is and how it is a security and cyber security threat; and the harms that the weapon of disinformation can cause.

This analysis highlights the importance of identifying and exploring real world discourses surrounding specific terms such as disinformation, and the consequences of this are wide reaching. For example, when educators, fact checkers, and policymakers create responses to disinformation, they need to be aware of how the term is used and understood by people in the real world – including the distinction between disinformation, which focuses more on actors and the people responsible for false content, compared to misinformation, which as is discussed below, focuses on a different set of themes.

3. What are the discourses of the term ‘misinformation’ on Twitter?

To answer this question, I followed the same steps as described in relation the Disinformation corpus (RQ2), only this time the Misinformation corpus was the target. From the offset, the initial wordlist analysis showed an immediate and clear pattern: discourses of ‘misinformation’ focus greatly on health and science. The manual keyword grouping corroborated this, with the Medical keyword group accounting for 19% of Misinformation Corpus keywords (compared with just 0.14% of Disinformation Corpus keywords). The analysis also revealed that operational aspects of misinformation, specifically the means, effects, and response to misinformation, accounted for almost a third of keywords – something the wordlist analysis did not reveal.

In my view, the most conclusive finding from [Chapter 9](#) is that medical discourses surrounding the term ‘misinformation’ on Twitter are over-represented compared to the term ‘disinformation’. While this result is explainable, the extent to which it happens is notable, especially as it has not been reported anywhere else in the extant literature on metadiscourses of misinformation. I suggest that *blame* is again playing an integral role here – this time as a way of absolving the sharer of false content of some of the blame of sharing it. That (lack of) intentionality is again reflected so strongly in the data shows that it is a key component of how people understand misinformation, particularly as distinct from disinformation.

In the discourses of misinformation, we see an intricate, interwoven network of discourses where health interacts with core concepts such as blame and metaphorical representation of issues, alongside discussions of social harm, pro-interventionism attitudes, and the ways in which false content spreads, especially digitally. In this sense, misinformation is used to refer to false content as a harm, specifically affecting innocent digital bystanders. This focus on the means and effects of misinformation’s spread shows that people place a big emphasis on computer-mediated technologies and that misinformation is viewed as an inherently negative practice that should be stopped.

This has important ramifications. Chief among these is that (un)intentionality is integral to how misinformation is understood and affects how the concept of misinformation is represented through discourse on social media. Therefore, not only should we not dismiss intentionality

from definitions (as called for by Baptista and Gradim (2022) in [section 3.1.](#)), but instead we should focus on it as the core distinguishing feature between disinformation and misinformation. Put simply, definitions of disinformation and misinformation need to mention intentionality, otherwise they will be at odds with public understandings of the concepts.

10.1.1. Comparison of RQs 2 and 3

The principal finding of the Twitter analysis is that metadiscourses of the terms ‘disinformation’ and ‘misinformation’ vary considerably. The discourse identified in the way that Twitter users represent each concept demonstrates the wide ranging understandings of each topic. The measures taken, including statistical cutoffs, confidence thresholds, the removal of duplicates that can artificially skew findings, a long data period (ten years), and the use of non-elicited data, means these are patterns of authentic discourse that are unlikely to be a coincidence. In other words, these findings reliably describe how metadiscourses are constructed on Twitter surrounding each term. The findings show that disinformation and misinformation are represented as distinct concepts in Twitter discourse. Furthermore, the reported differences are much more expansive than dictionary definitions, which normally only differ on the basis of intentionality. While intentionality is responsible for some of the variation we observe in the data, is not the entire picture. There are complex interactions between discourses within each corpus, resulting in a unique discursive picture in each. This thesis consequently provides the first evidence that the terms ‘disinformation’ and ‘misinformation’ are used distinctly in real-world discourse and delineates some of the way in which this happens.

That these terms are clearly used differently has impacts for, and should inform, how professionals use them. This is because until now, we have been unaware of what other concepts they may also activate when using either term. But this research shows the associations and representations of each term and subsequently shows that, for example, using the term ‘misinformation’ may evoke concepts of health while ‘disinformation’ evokes Russian hostile-estate information operations. Now we know these differences can exist, we should factor them into our communications. For example, referring to ‘health disinformation’ may be at odds with how many people understand the topic, as referring to ‘Russian misinformation’ may also be discursively jarring.

10.2. Critical Reflections on Theory and Method

In [Section 2.7](#) I wrote that we should not detach disinformation from its social influences and impacts because doing so would be to detach it from a core aspect of how it operates in the real world. I believe this has been validated in my analysis. Specifically – discourse, the socially situated study of language (Fairclough & Wodak, 1997; Angermuller, 2015) – has proven to be a useful lens through which to view disinformation and metadiscourses of disinformation online. It is an approach that draws in context and gives due consideration to a very complex phenomenon, drawing on the influences of the wider context such as social, economic, literacy, and other factors. In other words, discourse is a useful way to study disinformation. Disinformation inculcates prejudice, violence, and harm in society, and the vehicle through which it does this is discourse.

In fact, beyond just analysis, it proved fruitful to blend discourse theory with disinformation theory. Specifically, the development of Disinformation vs disinformation seen in [Section 7.4.4.](#) by drawing on Gee (2015a)’s conceptualisation of Discourse vs discourse also proved to be beneficial. The subsequent distinction between ‘disinformation’ as a single disinforming

artefact compared to 'Disinformation', which integrates in the wider social contexts and the actors and means responsible for the content, constitutes a move forward in (critical) disinformation theory.

Choosing to take a critical approach to the data allowed me to add extra nuance to my analysis, in terms of situating the discourses identified in my analysis into a wider sociohistorical context, acknowledging how power is mediated, (re)produced, and negotiated in discourse (Wodak, 2011; Bhatia, 2012) and the influences of changing power on social media (KhosraviNik, 2017). Chiefly, it allowed me to identify and analyse discourses in a way that explored how contextual factors such as social, historical and political aspects manifest themselves in texts covertly and overtly. However, my analysis was also not constrained by a single paradigm or approach.

The development and employment of a functional CMDA toolkit (Herring, 2004a; Herring, 2005), designed to tackle the data at hand while allowing for the flexibility of drawing on multiple other disciplines and approaches as needed, was very beneficial. The discourse approach acted as gateway to opening up the context-aware analysis of the discourses while acknowledging the technological affordances on the discourse types (social media data). Using CMDA allowed me to combine other theory with my analysis, ranging from drawing on legislation to integrating studies of health, wellness and medical consumerism. The result was an approach that was guided by discourse analysis but flexible enough to allow analysis that could do the data justice.

However, the integration of these approaches and theory would not have been possible without using a method that allows for the balancing of quantitative, statistical analysis with qualitative, manual analysis. A corpus linguistic approach that allowed me to implement statistical and confidence cutoffs (Brezina, 2018b) alongside being able to zoom in on the data at the micro level meant I could explore the full range of phenomena in the corpus. Importantly, my analytical approach directed me to inform my analysis with real-world language, and not just accept top level patterns. A comparative keyword approach was useful in accessing the data, but it was the corpus based (critical) discourse analysis that allowed me to analyse my data in a way not afforded by other approaches such as NLP.

This approach, that draws on naturalistically occurring organic (i.e. non-elicited) discourse, meant that the conclusions I reached were based on real instances of how these terms are used instead of being theoretical accounts based on theory or assumed usage. This type of data, free from experimental conditions and observer biases, enhances the validity and generalizability of the findings (Semino et al., 2023) and results in a study that is grounded in real-world discussions. The result is theory and conclusions derived from the observation of linguistic and discursive phenomena based in reality, and not artificially removed from it (Chafe, 1992).

All these elements in tandem resulted in a robust and thorough form of analysis that allowed for the necessary discovery of discourses and subsequent interpretation but importantly did not restrain my analysis by forcing my data to fit into specific preordained taxonomies or classifications. The result was an integrative, context-bound approach to the data that allowed me to view disinformation critically as a social-situated practice mediated through online discourse. Put simply, as a result of these approaches I discovered things not possible through just theory-driven discussions of definition, demonstrating the utility of a flexible, functional approach.

10.3. Limitations

While the approaches above improve representativeness and generalisability, there are of course still key limitations of this research that inhibit the extent to which the findings are applicable to other contexts. Three important aspects are discussed in turn below.

The first is that this data contains only English-language data; while spoken by billions in most countries, it is not representative of disinformation as a global issue. As I noted in [Section 4.4.1.](#) on the characteristics of disinformation in the Global North, some countries, especially English-speaking ones, have an advantage in dealing with disinformation when it comes to research, funding, and other factors. Therefore, despite including a range of world Englishes, this report adds to a large pre-existing bias in the literature. It also neglects disinformation in other languages and countries where disinformation is just as, if not more, harmful than in developed nations. Cross-linguistic and cross-cultural studies would help to remedy this.

While RQ1 uses a range of pre-existing and tailor made datasets, RQs 2 and 3 in this thesis draw data from a single data source: Twitter. Twitter has many unique features and functions and while we can derive interesting and useful insights from studying it, it is not representative of the wider online, or offline world. Further, Twitter's recent turmoil regarding its takeover, rebranding, and diminishing user base under the ownership of Elon Musk (Milmo, 2023) means that not only are these results no longer replicable – due to Twitter's radical changes and the loss of access to data – but they are from a now bygone social media platform that is increasingly irrelevant.

Finally, one key limitation is that my analysis looks at the corpora as a whole, and does not assess intra-corpus variation or compare different segments within corpora to each other. While this functions to give a broad overview of the phenomena, as was the aim of the RQs in this thesis, it means that certain finer grained findings may have gone undiscovered. The potential routes to these findings are discussed below.

10.4. Future Research

At the very beginning, I noted that this thesis is “very broad to address some foundational questions related to disinformation, its history, and its use online” ([Section 1.3.](#)). Consequently, this meant I could not narrow in too much on certain specific questions. There are two elements that stood out to me that I would have liked to explore in greater detail that offer up a valuable track for future research to investigate. These are: corpus similarity, and temporal analysis.

10.4.1. Similarity

RQs 2 and 3 carried out a comparative analysis between two corpora, one containing the term disinformation but not misinformation, and one containing the term misinformation but not disinformation. The purpose of this was to identify *difference* and to investigate how the metadiscourses surrounding each term vary, and what this tells us about each term. Corpus similarity, the practice of investigating what multiple corpora have in common, would have also revealed interesting insights. By exploring not just difference, but commonality, additional nuance could be added to discussions of the terms disinformation and misinformation.

Taylor (2013) notes that corpus similarity approaches in discourse analysis are often neglected in favour of corpus comparative analysis and that by focussing only on the latter we create a ‘blind spot’ that means our analysis is one sided from the offset (p. 83). Taylor frames this as research subsequently offering up a “180-degree visualisation” instead of a “360-degree

perspective” (ibid). In practical terms, this could have been carried out by looking at what Baker (2011) calls ‘lockwords’, words that are “relatively static in terms of frequency” across corpora (p. 66). The reality is that the corpus outputs discussed in [Chapter 6](#) already contain these items, which can be identified by setting a low log ratio score to indicate lack of difference. The majority of these words are items such as ‘the’ and ‘a’ which are usually universal in their use, but there are also items such as ‘facts’ and ‘video’ that could offer up potential avenues of research. This type of analysis however was simply beyond the scope of this thesis, as they would have warranted additional keyword coding and discussion, outstripping the space afforded by a thesis. It offers up an interesting avenue for future research to improve our understanding of how the terms ‘disinformation’ and ‘misinformation’ are represented online.

10.4.2. Temporal Analysis

While RQ1 explored how the term disinformation and its near-synonyms evolved over time, RQs 2 and 3 did not carry out temporal analysis on the datasets. Each dataset spans 10 years of Twitter data and could offer insights into how these terms evolved over time. This could be particularly productive given that the time frames include some key global events that have been posited in the past as affecting the words’ usage, such as the political rise of Donald Trump and the US 2016 presidential election. Such an approach could have been used to identify whether these terms have been used consistently over time or if their usage varies and fluctuates, especially relating to contextual factors and real-world events.

One way to do this could have been by carrying out a Usage Fluctuation Analysis (hereafter UFA) on the data. UFA identifies “usage manifested through collocation, i.e. the co-occurrence of words in texts” (McEnery et al., 2019, p. 413) and can be used to identify four types of collocate usage over time:

1. relatively consistent (consistent collocates)
2. consistent for a period of time but fall out of use (terminating collocates)
3. later onset collocates are consistently used during a specific time period (initiating collocates)
4. collocates which attach themselves only briefly to a word in the total period (transient collocates).

(Adapted from McEnery et al., 2019, p. 417)

Where keyness tends to be used to contrast one corpus to another (inter-corpus variation), UFA is used to identify differences over time within a corpus (intra-corpus variation). As an approach it can handle very large datasets and also visualises variation.

10.5. Concluding Remarks

In 2017 during a lunch with my granddad and a group of his mostly octogenarian friends, I was asked about what I was studying. When I spoke about my planned PhD research and the proposal I was writing, I asked, ‘have you heard of fake news?’ The answer was yes, they had heard of it, but did not know anything more about it.

Exactly a year later, I joined my granddad for the same lunch with the same group. When I again asked, ‘have you heard of fake news?’ there was uproar at the table. This group of people, mostly born in the 1930s and 1940s, began reciting examples of disinformation they had

encountered, lamenting the role of social media in modern day society, chastising politicians for spreading false content, and asking me question after question about things they wanted answers to about the topic. It was all we spoke about for the next hour or so.

While anecdotal, this demonstrates that notions of disinformation, misinformation and ‘fake news’ have experienced phenomenal growth in the past decade, both as a topic of discussion and as an issue that many of us face every day. The purpose of this thesis was to shine a light on some of the foundational questions surrounding disinformation that have been leapfrogged in the extant research, as people seek to study specific examples of disinformation but have forgotten to ask the most basic questions.

Disinformation, however, is far from just a theoretical issue and a subject of lunchtime conversations. I started this thesis by foregrounding an extreme case of the consequences of disinformation and throughout I have highlighted real-world examples from across the globe. The goal of this was to demonstrate how severe disinformation can be in the real world. In other words – disinformation is not just something to be studied, but something to be countered, and that is my hope for the future.

Summary:

This section provides evidence-based insights for policymakers, educators, and counter-disinformation practitioners derived from the analysis in this thesis. These aim to bridge the gap between theoretical insights and practical interventions, contributing to a more effective response to the challenges posed by disinformation online.

Transparency

- Transparency from social media companies directly impacts our ability to assess disinformation as an online harm.
- Large social media companies and other providers of access to user-generated content should be compelled to share detailed data on disinformation trends, the algorithms that amplify such content, and the measures they take to mitigate its spread.
- This should include the mandatory reporting of the effectiveness of interventions.
- This level of openness is crucial for developing effective policies and interventions, as well as for fostering accountability in how these platforms address the issue of disinformation.

Principles-based regulation

- Principles-based regulation is not adequate to foster the prevention of online harms.
- This is demonstrated by recent shifts by companies such as Meta and X to downscale their safety teams and reduce their obligations to tackle only illegal but not harmful content.
- More robust, enforceable frameworks are needed to hold platforms accountable and ensure proactive measures are taken to address issues like disinformation and other online harms.

Factchecks

- Where factchecks or community context is added to a social media post, it should be shown to new audiences as well as the audience that has already viewed the original unlabelled post.
- This is a simple, easy-to-enforce measure that ensures that the corrected information reaches a wider audience and helps to mitigate the spread of the original, potentially misleading content.

Scope

- There is ambiguity in government, academia, and the third sector about what disinformation is.
- It should be clarified whether disinformation refers to news only or all information/content. This clarification dramatically affects scope and clear definitions help distinguish between disinforming news artefacts and broader phenomena such as social media, deepfakes, and other narratives.

China's Influence

- Russian disinformation operations are given considerably more attention than Chinese disinformation operations. Given Russia's waning global influence however and China's sophisticated technological approaches to (dis)information operations, it is vital to improve public awareness about China.
- This is especially pertinent considering China's advanced developments in AI and the use of these new technologies in facilitating online harms.

Glossary

Term	Definition
Active measures	Offensive political warfare campaigns that use (dis)information.
Algorithm	A set of instructions carried out by a computer that is designed to complete a task such as solving a problem or creating a specific outcome
Amplification	The spread of disinformation online and how technology amplifies the reach of false content.
Anonymity	The degree to which an individual's identity is perceived to be concealed in digital contexts.
Bias	Reporting to align with specific beliefs.
Bot	An autonomous piece of software that emulates human behaviour online.
Clickbait	Deliberately sensationalist news headlines designed to garner clicks and generate advertising revenue.
Computer-mediated communication	Communication that takes place through the use of computers and digital technologies.
Conspiratoriality	A branch of spirituality that rejects modern medicine and mainstream views, and is fuelled by political disillusionment, alternative worldviews, and a sense of enlightenment that opposes conventional healthcare.
Correction	The mitigation of the effects of algorithmic disinformation individually, at the platform level, and through policy.
Counterdiscourse	A discourse that challenges, opposes, or responds to another discourse (usually one that is prevailing or institutional) to subvert it.
Deepfake	Videos where individual's faces are digitally swapped to give the appearance someone not in the original video is present.
Discourse	A socially structured set of meanings, representations, and statements that produce and shape particular versions of reality.
Disinform	a. the use of intentionally factually incorrect news to deceive and mislead b. the deliberate use of factually incorrect news to deceive and mislead for financial, political, hostile, or other purposes
Disinformation	a. A disinforming news artefact. b. Intentionally factually incorrect news that is published to deceive and mislead its reader. c. A term used to dismiss counter attitudinal news stories.
Fake news	a. Disinformation. b. A term used to dismiss counter-attitudinal news articles.
False news	A historic term for disinformation.

Hashtags	The use of # to identify topics and perform social functions.
Headline	The initial part of a news article that holds both an independent and dependent relationship to the body of the article.
Hostile-state information operation	The employment of information-related capabilities by a state to influence and disrupt adversaries.
Intentionality	The extent to which an individual does something deliberately or not.
Legitimate news	The opposite of disinformation; factually correct news.
Licentious discourses	A term that originated in the 16th century to refer to disinformation.
Likes	The active engagement with a social media post ‘like’ or ‘favourite’ feature, often indicate agreement or approval.
Literacy	The ability to use, organize, evaluate, and communicate information
Longevity	The period in which digital communication is accessible by others.
Mention	A tweet that contains the username of another Twitter user.
Microblogging	The creation of short form social media posts. These can be limited by convention or by restriction.
Misinform	To unknowingly give someone false information
Misinformation	Factually incorrect news that is published without intention to deceive and mislead
Misreported news	Unintentionally erroneous reporting.
Online harm	The negative impacts of digital technologies
Parody	Reframing and restating of real events.
Platform	An organisation or company that hosts user-generated content
Post truth	The theory that truth is relative and individuals can choose what to believe.
Propaganda	The use of information and disinformation to promote an idea, individual, or political belief.
Publisher	A party that is responsible for the content it hosts on a digital service.
Quote retweets	The republishing of a tweet with additional text.
Reception	The impact of disinformation at the individual level and the outcomes and consequences of disinformation
Recommender system	A type of algorithm that provides particular content to users of a service based on data about them such as their previous interactions and behaviours.
Replies	Tweets that address and are structurally linked to another tweet by use of the ‘reply’ function.
Retronym	The modification of a pre-existing term to distinguish an original concept from a later development. Usually

	in the form of an added qualifier such as ‘acoustic guitar’ to differentiate ‘guitar’ from ‘electric guitar’.
Satire	Fabrications for humour or critique.
Selective reporting	Reporting only part of a story by omitting facts.
Social media	The ecosystem of user-generated content, the tools used to share content, and the practices and norms involved
Social platform	An organisation or company that hosts user-generated content
Synchronicity	The extent to which communication occurs in real time or is delayed.
Thread	A series of tweets by the same users that are displayed as connected.
Transparency	Open access to data, processes, and decision-making on social media platforms to ensure accountability.
Trolling	The intentional act of disrupting others online through various means such as insults, false statements, and abuse.
Tweet	A post made to the social media platform Twitter.
User-generated content	Content created by a user or users of online services for others to consume.
Zone flooding	An online discursive practice whereby bad actors overload the information environment with all types of information to obfuscate the legitimate information, thus decreasing people’s ability to understand what is true or false.

Appendix A: Tweet and Token Counts

Disinformation:

File	Tweets	Tokens	File	Tweets	Tokens	File	Tweets	Tokens
2012_01	199	2,938	2013_01	172	2,530	2014_01	323	5,265
2012_02	211	3,186	2013_02	200	2,882	2014_02	300	5,017
2012_03	166	2,614	2013_03	188	2,772	2014_03	710	11,488
2012_04	207	3,034	2013_04	273	4,483	2014_04	590	9,572
2012_05	202	3,086	2013_05	232	3,683	2014_05	453	7,479
2012_06	276	3,900	2013_06	193	3,010	2014_06	223	3,479
2012_07	287	4,131	2013_07	305	4,535	2014_07	316	5,121
2012_08	334	4,870	2013_08	269	3,901	2014_08	395	7,683
2012_09	289	4,261	2013_09	227	3,488	2014_09	272	4,415
2012_10	189	2,964	2013_10	282	3,886	2014_10	231	3,689
2012_11	216	3,282	2013_11	1623	28,764	2014_11	228	3,540
2012_12	206	2,975	2013_12	403	6,660	2014_12	209	3,228
Totals:	2,782	41,241	Totals:	4,367	70,594	Totals:	4,250	69,976
2015_01	228	3,560	2016_01	233	3,538	2017_01	769	12,228
2015_02	231	3,411	2016_02	266	3,960	2017_02	768	13,680
2015_03	403	6,272	2016_03	371	6,267	2017_03	844	12,899
2015_04	268	3,993	2016_04	304	4,630	2017_04	646	11,791
2015_05	220	3,215	2016_05	241	3,563	2017_05	781	14,005
2015_06	327	6,537	2016_06	273	4,069	2017_06	730	14,049
2015_07	210	2,983	2016_07	267	3,961	2017_07	965	21,587
2015_08	191	2,752	2016_08	365	5,746	2017_08	848	17,328
2015_09	245	3,738	2016_09	346	5,495	2017_09	655	13,460
2015_10	217	3,133	2016_10	454	7,494	2017_10	1,275	26,564
2015_11	380	5,520	2016_11	600	10,102	2017_11	1,078	24,438
2015_12	217	3,271	2016_12	1,297	19,510	2017_12	1,149	32,148
Totals:	3,137	48,385	Totals:	5,017	78,335	Totals:	10,508	214,177
2018_01	1,088	31,621	2019_01	2,049	59,446	2020_01	4,058	117,863
2018_02	1,708	48,004	2019_02	2,225	60,697	2020_02	4,141	120,075
2018_03	1,469	41,866	2019_03	1,984	60,997	2020_03	5,522	166,255
2018_04	1,837	52,720	2019_04	1,850	54,887	2020_04	6,079	185,404
2018_05	1,371	41,555	2019_05	2,140	60,904	2020_05	4,493	134,937
2018_06	1,207	36,860	2019_06	1,843	53,329	2020_06	4,750	133,939
2018_07	1,637	50,080	2019_07	1,877	56,699	2020_07	3,932	117,283
2018_08	2,014	56,141	2019_08	2,343	65,318	2020_08	4,341	128,767
2018_09	1,532	42,259	2019_09	2,244	62,993	2020_09	5,760	170,238
2018_10	1,963	55,748	2019_10	3,433	101,589	2020_10	7,022	208,950
2018_11	2034	56,570	2019_11	3,560	108,166	2020_11	6,557	206,100
2018_12	2,251	62,936	2019_12	4,122	125,315	2020_12	5,425	165,766
Totals:	20,111	576,360	Totals:	29,670	870,340	Totals:	62,080	1,855,577
2021_01	6,984	222,447						

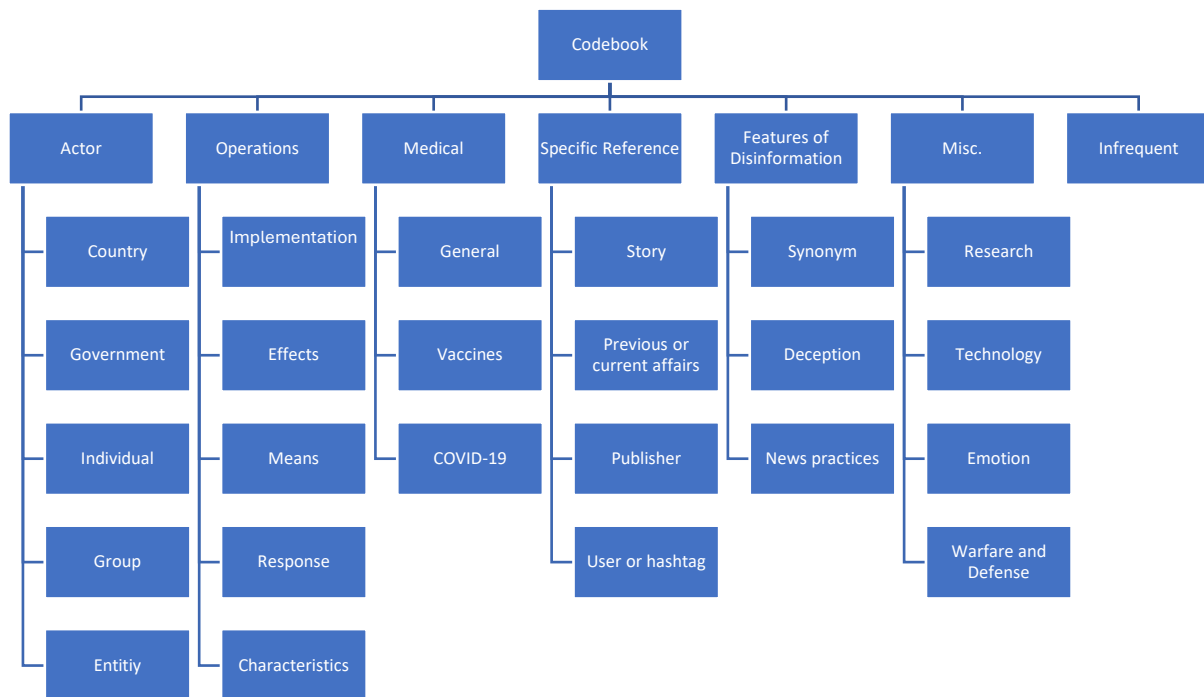
2021_02	5,928	181,394
2021_03	4,832	144,502
2021_04	4,463	135,721
2021_05	4,730	144,842
2021_06	4,146	127,516
2021_07	5,582	169,030
2021_08	5,333	162,427
2021_09	5,059	152,526
2021_10	4,985	150,967
2021_11	4,653	146,405
2021_12	4,463	136,879
Totals:	61,158	1,874,656

Misinformation:

File	Tweets	Tokens	File	Tweets	Tokens	File	Tweets	Tokens
2012_01	417	6,403	2013_01	536	8,230	2014_01	604	9,397
2012_02	516	7,835	2013_02	490	7,575	2014_02	682	10,422
2012_03	458	6,846	2013_03	469	7,545	2014_03	697	11,038
2012_04	554	8,056	2013_04	1,391	23,304	2014_04	799	13,604
2012_05	423	6,289	2013_05	547	8,518	2014_05	641	10,420
2012_06	458	7,354	2013_06	658	10,123	2014_06	501	8,096
2012_07	459	7,272	2013_07	520	8,310	2014_07	688	10,843
2012_08	538	8,234	2013_08	639	9,785	2014_08	721	11,377
2012_09	652	9,393	2013_09	528	8,460	2014_09	624	9,068
2012_10	651	9,765	2013_10	615	9,958	2014_10	1,113	16,894
2012_11	659	10,100	2013_11	518	8,595	2014_11	568	8,878
2012_12	607	9,354	2013_12	504	8,054	2014_12	561	8,837
Totals:	6,392	96,901	Totals:	7,415	118,457	Totals:	8,199	128,874
2015_01	647	10,507	2016_01	826	12,247	2017_01	1,229	20,259
2015_02	742	11,256	2016_02	656	10,079	2017_02	1,383	22,132
2015_03	623	9,804	2016_03	701	10,843	2017_03	1,008	16,360
2015_04	544	8,569	2016_04	628	9,663	2017_04	1,021	16,929
2015_05	469	7,243	2016_05	594	9,807	2017_05	1,060	19,742
2015_06	416	6,654	2016_06	693	11,226	2017_06	1,307	24,907
2015_07	610	9,460	2016_07	643	10,755	2017_07	950	19,443
2015_08	656	9,649	2016_08	726	11,595	2017_08	1,036	22,370
2015_09	493	7,662	2016_09	1,007	15,714	2017_09	1,347	24,480
2015_10	625	9,719	2016_10	731	11,694	2017_10	1,584	32,732
2015_11	853	13,545	2016_11	1,564	25,386	2017_11	1,851	42,664
2015_12	675	10,538	2016_12	1,324	21,359	2017_12	1,782	50,257
Totals:	7,353	114,606	Totals:	10,093	160,368	Totals:	15,558	312,275
2018_01	1,674	49,599	2019_01	2,731	81,307	2020_01	4,731	136,869
2018_02	1,833	53,827	2019_02	2,426	71,425	2020_02	4,966	139,339
2018_03	2,016	58,846	2019_03	3,228	94,709	2020_03	8,351	252,646

2018_04	2,083	62,887	2019_04	3,024	89,686	2020_04	7,957	224,398
2018_05	1,784	52,418	2019_05	2,915	84,252	2020_05	6,634	188,492
2018_06	2,043	62,221	2019_06	2,819	81,259	2020_06	5,834	175,592
2018_07	2,658	76,830	2019_07	2,604	81,642	2020_07	5,851	177,156
2018_08	2,696	78,229	2019_08	3,100	93,401	2020_08	6,758	197,020
2018_09	1,740	52,677	2019_09	2,888	87,001	2020_09	2,896	76,507
2018_10	2,694	83,865	2019_10	3,517	109,563	2020_10	7,399	211,383
2018_11	2,802	79,139	2019_11	3,355	105,841	2020_11	7,753	228,480
2018_12	1,977	57,998	2019_12	3,467	108,174	2020_12	6,103	180,197
Totals:	26,000	768,536	Totals:	36,074	1,088,260	Totals:	75,233	2,188,079
2021_01	7,358	223,495						
2021_02	6,606	197,563						
2021_03	6,195	175,834						
2021_04	5,902	174,997						
2021_05	5,637	167,583						
2021_06	5,359	162,507						
2021_07	7,149	207,629						
2021_08	7,839	228,603						
2021_09	7,878	228,718						
2021_10	7,453	216,179						
2021_11	6,620	198,544						
2021_12	6,736	205,625						
Totals:	80,732	2,387,277						

Appendix B: Coding Scheme



Parent Code	Code	Description	Examples
Actor	Country	Reference to a country, state, region or other geographic area, including adjectives and demonyms.	Europe, Germany, Colorado, Gujarat
	Government	Reference to the government, government offices or government positions.	Kremlin, GCHQ, [project] Mockingbird
	Individual	Reference to a named individual.	Nixon, Vladimir [Putin], Marjorie [Taylor Greene]
	Group	Reference to a number of people.	ANTIFA, allies, ADOS [American Descendants of Slavery]
	Entity	Reference to a non-sentient entity such as a business, legislative act, etc.	MH17, Burisma, Bing
Operations	Implementation	Words referring to the spread of disinformation.	Coordinated, industrial, campaign, sponsored
	Means	The specific means by which false content is spread.	WhatsApp, DM, forward
	Effects	The results and consequences of the spread of false content, including mention of groups with protected characteristics.	hysteria, indigenous, impacts, antisemitism

	Response	Countermeasures to reduce the spread of false content.	sanction, regulate, pledge, suspend
Medical	General	General health and medical terms.	AIDS, doctors, medication, abortion
	Vaccines	Medical terms specifically pertaining to vaccines and their production and rollout.	hesitancy, antivax, immunization
	COVID-19	Terms relating to COVID-19.	COVID-19
Specific Reference	Story	A specific new item that has been shared multiple times in the corpus.	PetSmart, SandalsResorts, passive
	Previous or current affairs	Past and present events of interest.	Gerrymandering, ceasefire, assassination
	Publisher	Reference to a specific news publisher or news organisation.	ZeroHedge, SkyNews, NiemanLab
	User or hashtag	Reference to an @user or #hashtag.	@MYPILLOWUSA, #SFgate, #TCOT
Disinformation Features	Synonym	Words which denote similar concepts to <i>disinformation</i> and <i>misinformation</i> .	Inauthentic, propaganda, rumour, myths
	News practices	Words associated with news discourse in general.	Expose, uncover, allegations
Miscellaneous	Research	Words referencing research and scientific inquiry	Scientific, research, studies
	Technology	Words referencing electric (often internet-enabled) tools and machines.	Emails, laptop, cyber
	Emotion and Affect	Words relating to feelings.	Gross, frustrated, annoying
	Warfare and defence	Words referencing <i>disinformation</i> and <i>misinformation</i> through a lens of war and conflict.	War, adversaries, spies
Infrequent	Words not worthy of their own category or that do not have a clear pattern of use.		Massive, initial, prayers

Appendix C: Wordlists

Table 112 Disinformation Corpus – 200 Most Frequent Words

R a n k	Word	Fre q.	Te xt s	R a n k	Word	Fr eq .	Te xt s	R a n k	Word	Fr eq .	Te xt s	R a n k	Word	Fr eq .	Te xt s	R a n k	Word	Fr eq .	Te xt s
1	THE	220,189	120	41	LIES	15,243	120	81	ELECTIO N	8,199	85	121	PUBLI C	5,173	115	161	SAY	3,913	109
2	DISINFO RMATIO N	180,623	120	42	AT	14,432	120	82	THEM	7,883	104	122	EVEN	5,162	106	162	2	3,872	119
3	TO	138,363	120	43	HOW	14,409	120	83	NEW	7,775	120	123	FOXNE WS	5,081	109	163	WELL	3,847	105
4	NEWS	131,928	120	44	SPRE AD	14,062	118	84	IT'S	7,047	81	124	SAYS	5,073	115	164	VACC INE	3,785	50
5	AND	124,273	120	45	YOU R	13,899	120	85	ITS	7,000	120	125	GOOD	5,060	115	165	TODA Y	3,779	111
6	OF	110,875	120	46	OR	13,826	120	86	TWITTER	6,820	105	126	U	5,026	120	166	HAD	3,773	98
7	A	92,113	120	47	WHA T	13,751	120	87	BEING	6,761	117	127	MUCH	5,003	118	167	TAKE	3,743	97
8	IS	87,317	120	48	SO	13,317	119	88	KNOW	6,650	116	128	FALSE	4,995	113	168	USED	3,740	98
9	IN	64,772	120	49	AN	12,892	118	89	STOP	6,649	114	129	MANY	4,987	106	169	THOS E	3,733	103
10	FOR	52,677	120	50	SPRE ADIN G	12,737	118	90	BECAUSE	6,580	106	130	HERE	4,982	110	170	AMER ICAN S	3,706	97
11	ON	50,052	120	51	WHO	12,722	118	91	ONLY	6,477	116	131	MY	4,888	114	171	WAN T	3,650	99
12	THAT	47,095	120	52	LIKE	12,359	119	92	THAN	6,460	116	132	CAMPA IGNS	4,781	103	172	1	3,641	118
13	FOX	43,541	120	53	OUT	12,097	120	93	WOULD	6,433	116	133	WING	4,719	95	173	TOO	3,631	110
14	IT	39,215	120	54	WILL	11,654	120	94	TIME	6,392	118	134	OUTLE TS	4,679	94	174	MUST	3,629	111
15	THIS	39,031	120	55	NO	11,605	119	95	OTHER	6,267	112	135	ONLIN E	4,619	99	175	ME	3,610	109
16	ARE	38,911	120	56	IF	11,547	120	96	INFORMA TION	6,160	114	136	MOST	4,584	110	176	HATE	3,574	96
17	YOU	38,787	120	57	JUST	11,522	118	97	TRUTH	6,091	120	137	SOUR CE	4,579	109	177	REAL LY	3,573	110
18	NOT	28,866	120	58	US	11,451	120	98	SOME	6,074	115	138	PART	4,465	105	178	EU	3,566	101
19	AS	27,304	120	59	OUR	10,667	114	99	OVER	6,063	115	139	FACT	4,426	104	179	DOES	3,533	106
20	WITH	26,926	120	60	RIGH T	10,530	111	100	GOP	6,012	107	140	SOUR CES	4,426	102	180	SAME	3,526	110

21	THEY	26,823	119	61	DO	10,509	119	101	WHICH	5,854	117	141	SAID	4,417	104	181	COULD	3,508	105
22	BY	26,699	120	62	HE	10,508	113	102	REPORT	5,838	114	142	ANTI	4,321	109	182	DON'T	3,496	78
23	MEDIA	26,030	120	63	HIS	10,335	111	103	CNN	5,769	116	143	BELIEVE	4,253	108	183	COUNTRY	3,490	81
24	I	25,928	120	64	NOW	10,317	120	104	SEE	5,740	115	144	POLITICAL	4,233	104	184	YEARS	3,490	98
25	BE	25,903	120	65	UP	10,152	120	105	THESE	5,736	106	145	GOVERNMENT	4,196	117	185	WAY	3,475	107
26	FROM	25,544	120	66	BEEN	10,000	114	106	STATE	5,730	108	146	19	4,192	51	186	PRESIDENT	3,433	100
27	ABOUT	22,909	120	67	IT'S	9,976	119	107	REALDONALDTRUMP	5,696	66	147	FACTS	4,191	103	187	VERY	3,427	104
28	HAVE	21,521	120	68	CAN	9,341	118	108	ANY	5,673	114	148	AFTER	4,189	105	188	NEVER	3,369	109
29	TRUMP	19,921	81	69	FACEBOOK	9,332	99	109	NEED	5,633	97	149	BIDEN	4,170	42	189	HIM	3,356	90
30	HAS	18,224	120	70	VIA	9,313	120	110	DON'T	5,489	112	150	DOWN	4,148	107	190	WHERE	3,348	105
31	WE	18,224	118	71	THERE	9,257	119	111	WERE	5,485	105	151	DEMOCRACY	4,120	90	191	WATCH	3,315	114
32	ALL	17,328	118	72	SOCIAL	8,996	109	112	NETWORK	5,436	113	152	GOING	4,104	98	192	OWN	3,301	100
33	THEIR	17,248	115	73	AGAINST	8,857	119	113	ALSO	5,350	96	153	AMERICAN	4,096	102	193	AMERICA	3,300	108
34	CAMPAIGN	17,218	120	74	SHOULD	8,792	114	114	CONSPIRACY	5,310	106	154	EVERY	4,059	98	194	FED	3,283	91
35	MORE	16,927	120	75	COVID	8,480	23	115	REAL	5,281	118	155	THEN	4,057	101	195	WHITE	3,248	93
36	RUSSIAN	16,886	108	76	GET	8,471	119	116	THINK	5,262	108	156	MAKE	4,041	110	196	REALTIL	3,235	9
37	WAS	16,457	119	77	RUSSIA	8,415	110	117	READ	5,208	118	157	STILL	4,031	109	197	BAD	3,232	102
38	PROPAGANDA	16,344	120	78	ONE	8,404	116	118	WORLD	5,196	119	158	CHINA	4,023	88	198	PLEASE	3,222	108
39	BUT	16,090	120	79	WHEN	8,387	119	119	INTO	5,185	105	159	STORY	3,949	111	199	HER	3,165	79
40	PEOPLE	15,521	117	80	WHY	8,235	119	120	DID	5,182	110	160	CORONAVIRUS	3,919	24	200	GO	3,151	105

Table 113 Misinformation Corpus – 200 Most Frequent Words

R a n k	Word	Fre q.	Te xt s	R a n k	Word	Fre q.	Te xt s	R a n k	Word	Fre q.	Te xt s	R a n k	Word	Fre q.	Te xt s	R a n k	Word	Fre q.	Te xt s
1	THE	267,841	120	41	WAS	19,850	120	81	INFORMATION	10,187	120	121	HERE	6,768	120	122	WELL	4,913	127
2	MISINFORMATION	242,536	120	42	MORE	19,750	120	82	BEING	10,130	120	122	TRUTH	6,729	120	123	DANGEROUS	4,881	124
3	TO	183,221	120	43	OR	19,594	120	83	RIGHT	10,108	120	123	AFTER	6,597	120	124	COULD	4,863	128
4	NEWS	167,459	120	44	AT	19,492	120	84	THEM	9,976	120	124	REPORT	6,531	120	125	REALLY	4,862	120
5	AND	165,306	120	45	HOW	19,382	120	85	SOME	9,905	120	125	SOURCE	6,508	120	126	POLITICAL	4,814	126
6	OF	147,905	120	46	WHAT	19,293	120	86	ITS	9,672	120	126	ANTI	6,487	120	127	STORY	4,810	120
7	A	113,981	120	47	OUT	18,880	120	87	BECAUSE	9,511	120	127	WERE	6,419	120	128	DID	4,788	129
8	IS	112,163	120	48	WHO	17,877	120	88	CORONAVIRUS	9,380	120	128	SAID	6,404	120	129	WAY	4,782	128
9	IN	79,227	120	49	TRUMP	17,791	120	89	OVER	9,354	120	129	PLEASE	6,288	120	130	DOES	4,732	129
10	ON	69,875	120	50	FACEBOOK	17,258	120	90	ONLY	9,068	120	130	SOURCES	6,274	120	131	CHECK	4,687	128
11	FOR	64,629	120	51	JUST	17,227	120	91	THAN	9,024	120	131	FOXNEWS	6,252	120	132	HAD	4,655	128
12	THAT	61,930	120	52	LIKE	16,435	120	92	KNOW	8,986	120	132	MOST	6,249	120	133	WATCH	4,599	120
13	YOU	56,359	120	53	NO	16,300	120	93	IT'S	8,828	120	133	REAL	6,131	120	134	COVID19	4,592	123
14	THIS	52,721	120	54	WILL	16,267	120	94	DON'T	8,766	120	134	REALDONALDTRUMP	6,071	120	135	GO	4,494	128
15	ARE	51,535	120	55	AN	16,220	120	95	FACT	8,557	120	135	ONLINE	6,055	120	136	PANDEMIC	4,471	128
16	IT	49,878	120	56	DO	16,063	120	96	AGAINST	8,548	120	136	U	5,911	120	137	VACCINES	4,447	126
17	FOX	44,227	120	57	IF	15,960	120	97	TIME	8,397	120	137	SAY	5,747	120	138	HER	4,433	128
18	ABOUT	41,607	120	58	CAN	15,915	120	98	THESE	8,374	120	138	BELIEVE	5,708	120	139	SAME	4,416	128
19	I	40,668	120	59	THERE	14,933	120	99	MUCH	8,340	120	139	STILL	5,699	120	140	1	4,388	120
20	NOT	39,507	120	60	SOCIAL	14,095	120	100	MY	8,288	120	140	ME	5,677	120	141	VERY	4,370	120
21	WITH	37,836	120	61	HE	13,868	120	101	FALSE	8,154	120	141	HATE	5,653	120	142	YOUTUBE	4,364	120

2 2	FROM	36, 228	1 2 0	6 2	UP	13, 32 6	1 2 0	1 0 2	WOUL D	8,1 41	1 2 0	1 4 2	DOWN	5, 64 8	1 1 8	1 8 2	BEFO RE	4, 35 6	1 1 9
2 3	THEY	34, 678	1 2 0	6 3	GET	13, 30 2	1 2 0	1 0 3	CAMP AIGN	7,9 87	1 2 0	1 4 3	CONSPIR ACY	5, 53 5	1 1 2	1 8 3	AROU ND	4, 31 1	1 1 8
2 4	BE	34, 471	1 2 0	6 4	VIA	12, 76 1	1 2 0	1 0 4	ELECTI ON	7,9 43	1 0 6	1 4 4	OUTLETS	5, 44 5	1 1 7	1 8 4	SHE	4, 27 1	1 1 2
2 5	AS	32, 983	1 2 0	6 5	BEEN	12, 68 7	1 2 0	1 0 5	READ	7,8 83	1 2 0	1 4 5	LOT	5, 41 0	1 2 0	1 8 5	BAD	4, 24 1	1 2 0
2 6	BY	31, 699	1 2 0	6 6	OUR	12, 58 9	1 2 0	1 0 6	OTHER	7,8 56	1 1 9	1 4 6	INTO	5, 36 8	1 1 9	1 8 6	EVERY	4, 21 7	1 1 8
2 7	MEDIA	31, 425	1 2 0	6 7	IT'S	12, 55 9	1 2 0	1 0 7	NEED	7,6 69	1 2 0	1 4 7	WANT	5, 35 7	1 2 0	1 8 7	DAY	4, 20 8	1 1 8
2 8	HAVE	28, 683	1 2 0	6 8	SHOU LD	12, 34 5	1 2 0	1 0 8	HEALT H	7,6 39	1 2 0	1 4 8	TOO	5, 35 5	1 2 0	1 8 8	GOP	4, 17 3	1 2 0
2 9	PEOPLE	26, 303	1 2 0	6 9	HIS	12, 30 5	1 2 0	1 0 9	GOOD	7,6 36	1 2 0	1 4 9	MAKE	5, 34 8	1 1 9	1 8 9	GOVE RNME NT	4, 11 0	1 1 7
3 0	SPREAD	24, 319	1 2 0	7 0	WHEN	12, 25 0	1 2 0	1 1 0	ANY	7,5 67	1 1 9	1 5 0	DON'T	5, 32 9	9 1 0	1 9 0	FIGHT	4, 10 1	1 1 6
3 1	HAS	24, 013	1 2 0	7 1	19	12, 00 3	7 0 1	1 1 1	SEE	7,5 13	1 2 0	1 5 1	ARTICLE	5, 29 4	1 2 0	1 9 1	REPO RTING	4, 04 9	1 2 0
3 2	BUT	23, 401	1 2 0	7 2	TWITT ER	11, 88 8	1 1 9	1 1 2	PUBLI C	7,4 76	1 2 0	1 5 2	THEN	5, 24 8	1 2 0	1 9 2	USE	4, 04 6	1 1 8
3 3	ALL	23, 303	1 2 0	7 3	STOP	11, 66 0	1 2 0	1 1 3	SAYS	7,4 52	1 2 0	1 5 3	WORLD	5, 21 4	1 2 0	1 9 3	SUCH	4, 03 8	1 1 5
3 4	SPREAD ING	23, 207	1 2 0	7 4	ONE	11, 62 7	1 2 0	1 1 4	CNN	7,3 57	1 1 7	1 5 4	GOING	5, 15 2	1 1 9	1 9 4	CLIMA TE	4, 02 5	1 1 8
3 5	WE	23, 174	1 2 0	7 5	NEW	11, 35 3	1 2 0	1 1 5	EVEN	7,2 60	1 1 9	1 5 5	TAKE	5, 13 7	1 1 9	1 9 5	HIM	4, 02 0	1 1 5
3 6	THEIR	22, 080	1 2 0	7 6	WHY	11, 24 4	1 2 0	1 1 6	MANY	7,2 42	1 2 0	1 5 6	THOSE	5, 13 5	1 1 8	1 9 6	COUN TRY	4, 01 3	1 1 2
3 7	LIES	22, 010	1 2 0	7 7	US	11, 15 7	1 2 0	1 1 7	FACTS	7,1 33	1 2 0	1 5 7	WHERE	5, 05 4	1 1 8	1 9 7	FIRST	4, 00 3	1 1 8
3 8	COVID	21, 448	2 3	7 8	PROP AGAN DA	11, 12 3	1 2 0	1 1 8	ALSO	6,9 67	1 1 6	1 5 8	NETWOR K	5, 00 6	1 1 9	1 9 8	PRESI DENT	3, 97 2	1 0 8
3 9	YOUR	21, 381	1 2 0	7 9	NOW	10, 76 6	1 2 0	1 1 9	THINK	6,8 29	1 2 0	1 5 9	2	5, 00 3	1 2 0	1 9 9	MUST	3, 96 8	1 1 9
4 0	SO	20, 390	1 2 0	8 0	VACCI NE	10, 73 0	1 1 0	1 2 0	WHIC H	6,7 91	1 1 9	1 6 0	HELP	4, 96 3	1 1 9	2 0 0	OFF	3, 96 4	1 1 7

Table 114 Disinformation Corpus – Most Frequent Content Words

Ra nk	Word	Freq.	Tex ts	Ra nk	Word	Fre q.	Tex ts	Ra nk	Word	Fre q.	Tex ts
1	DISINFORMA TION	180,6 23	120	51	KNOW	6,6 50	116	101	GOING	4,1 04	98
2	FOX	43,54 1	120	52	STOP	6,6 49	114	102	AMERICAN	4,0 96	102
3	ARE	38,91 1	120	53	ONLY	6,4 77	116	103	MAKE	4,0 41	110
4	YOU	38,78 7	120	54	WOULD	6,4 33	116	104	STILL	4,0 31	109
5	THEY	26,82 3	119	55	TIME	6,3 92	118	105	CHINA	4,0 23	88
6	MEDIA	26,03 0	120	56	OTHER	6,2 67	112	106	STORY	3,9 49	111
7	I	25,92 8	120	57	INFORMATION	6,1 60	114	107	CORONAVI RUS	3,9 19	24
8	BE	25,90 3	120	58	TRUTH	6,0 91	120	108	SAY	3,9 13	109
9	TRUMP	19,92 1	81	59	GOP	6,0 12	107	109	2	3,8 72	119
10	HAS	18,22 4	120	60	WHICH	5,8 54	117	110	WELL	3,8 47	105
11	WE	18,22 4	118	61	REPORT	5,8 38	114	111	VACCINE	3,7 85	50
12	THEIR	17,24 8	115	62	CNN	5,7 69	116	112	TODAY	3,7 79	111
13	CAMPAIGN	17,21 8	120	63	SEE	5,7 40	115	113	HAD	3,7 73	98
14	RUSSIAN	16,88 6	108	64	STATE	5,7 30	108	114	TAKE	3,7 43	97
15	WAS	16,45 7	119	65	REALDONALDT RUMP	5,6 96	66	115	USED	3,7 40	98
16	PROPAGAND A	16,34 4	120	66	NEED	5,6 33	97	116	AMERICAN S	3,7 06	97
17	PEOPLE	15,52 1	117	67	DON'T	5,4 89	112	117	WANT	3,6 50	99
18	LIES	15,24 3	120	68	WERE	5,4 85	105	118	1	3,6 41	118
19	HOW	14,40 9	120	69	NETWORK	5,4 36	113	119	MUST	3,6 29	111
20	SPREAD	14,06 2	118	70	CONSPIRACY	5,3 10	106	120	ME	3,6 10	109
21	YOUR	13,89 9	120	71	REAL	5,2 81	118	121	HATE	3,5 74	96
22	WHAT	13,75 1	120	72	THINK	5,2 62	108	122	REALLY	3,5 73	110
23	SPREADING	12,73 7	118	73	READ	5,2 08	118	123	EU	3,5 66	101
24	WHO	12,72 2	118	74	WORLD	5,1 96	119	124	DOES	3,5 33	106
25	US	11,45 1	120	75	DID	5,1 82	110	125	SAME	3,5 26	110
26	OUR	10,66 7	114	76	PUBLIC	5,1 73	115	126	COULD	3,5 08	105
27	RIGHT	10,53 0	111	77	FOXNEWS	5,0 81	109	127	DON'T	3,4 96	78

28	DO	10,509	119	78	SAYS	5,073	115	128	COUNTRY	3,490	81
29	HE	10,508	113	79	GOOD	5,060	115	129	YEARS	3,490	98
30	HIS	10,335	111	80	U	5,026	120	130	WAY	3,475	107
31	NOW	10,317	120	81	FALSE	4,995	113	131	PRESIDENT	3,433	100
32	BEEN	10,000	114	82	HERE	4,982	110	132	NEVER	3,369	109
33	CAN	9,341	118	83	MY	4,888	114	133	HIM	3,356	90
34	FACEBOOK	9,332	99	84	CAMPAIGNS	4,781	103	134	WHERE	3,348	105
35	SOCIAL	8,996	109	85	WING	4,719	95	135	WATCH	3,315	114
36	AGAINST	8,857	119	86	OUTLETS	4,679	94	136	OWN	3,301	100
37	SHOULD	8,792	114	87	SOURCE	4,579	109	137	AMERICA	3,300	108
38	COVID	8,480	23	88	PART	4,465	105	138	FED	3,283	91
39	GET	8,471	119	89	FACT	4,426	104	139	WHITE	3,248	93
40	RUSSIA	8,415	110	90	SOURCES	4,426	102	140	REALDATIL	3,235	9
41	ONE	8,404	116	91	SAID	4,417	104	141	BAD	3,232	102
42	WHEN	8,387	119	92	ANTI	4,321	109	142	PLEASE	3,222	108
43	WHY	8,235	119	93	BELIEVE	4,253	108	143	HER	3,165	79
44	ELECTION	8,199	85	94	POLITICAL	4,233	104	144	GO	3,151	105
45	THEM	7,883	104	95	GOVERNMENT	4,196	117				
46	NEW	7,775	120	96	19	4,192	51				
47	IT'S	7,047	81	97	FACTS	4,191	103				
48	ITS	7,000	120	98	BIDEN	4,170	42				
49	TWITTER	6,820	105	99	DOWN	4,148	107				
50	BEING	6,761	117	100	DEMOCRACY	4,120	90				

Table 115 Misinformation Corpus – Most Frequent Content Words

Ra nk	Word	Freq.	Tex ts	Ra nk	Word	Fre q.	Tex ts	Ra nk	Word	Fre q.	Tex ts
1	MISINFORMA TION	242,5 36	120	51	ONLY	9,0 68	119	101	WORLD	5,2 14	120
2	YOU	56,35 9	120	52	KNOW	8,9 86	120	102	GOING	5,1 52	119
3	ARE	51,53 5	120	53	IT'S	8,8 28	104	103	TAKE	5,1 37	119
4	FOX	44,22 7	120	54	DON'T	8,7 66	120	104	WHERE	5,0 54	118
5	I	40,66 8	120	55	FACT	8,5 57	119	105	NETWORK	5,0 06	119
6	THEY	34,67 8	120	56	AGAINST	8,5 48	120	106	2	5,0 03	120
7	BE	34,47 1	120	57	TIME	8,3 97	120	107	HELP	4,9 63	119
8	MEDIA	31,42 5	120	58	MY	8,2 88	120	108	WELL	4,9 13	117
9	PEOPLE	26,30 3	120	59	FALSE	8,1 54	118	109	DANGERO US	4,8 81	114
10	SPREAD	24,31 9	120	60	WOULD	8,1 41	120	110	COULD	4,8 63	118
11	HAS	24,01 3	120	61	CAMPAIGN	7,9 87	120	111	REALLY	4,8 62	120
12	SPREADING	23,20 7	120	62	ELECTION	7,9 43	106	112	POLITICAL	4,8 14	116
13	WE	23,17 4	120	63	READ	7,8 83	120	113	STORY	4,8 10	120
14	THEIR	22,08 0	120	64	OTHER	7,8 56	119	114	DID	4,7 88	119
15	LIES	22,01 0	120	65	NEED	7,6 69	120	115	WAY	4,7 82	118
16	COVID	21,44 8	23	66	HEALTH	7,6 39	120	116	DOES	4,7 32	119
17	YOUR	21,38 1	120	67	GOOD	7,6 36	120	117	CHECK	4,6 87	118
18	WAS	19,85 0	120	68	SEE	7,5 13	120	118	HAD	4,6 55	118
19	HOW	19,38 2	120	69	PUBLIC	7,4 76	120	119	WATCH	4,5 99	120
20	WHAT	19,29 3	120	70	SAYS	7,4 52	120	120	COVID19	4,5 92	23
21	WHO	17,87 7	120	71	CNN	7,3 57	117	121	GO	4,4 94	118
22	TRUMP	17,79 1	85	72	FACTS	7,1 33	120	122	PANDEMI C	4,4 71	38
23	FACEBOOK	17,25 8	111	73	THINK	6,8 29	120	123	VACCINES	4,4 47	96
24	NO	16,30 0	120	74	WHICH	6,7 91	119	124	HER	4,4 33	118
25	DO	16,06 3	120	75	HERE	6,7 68	120	125	SAME	4,4 16	118
26	CAN	15,91 5	120	76	TRUTH	6,7 29	120	126	1	4,3 88	120
27	SOCIAL	14,09 5	120	77	AFTER	6,5 97	120	127	YOUTUBE	4,3 64	100

28	HE	13,868	120	78	REPORT	6,531	120	128	BEFORE	4,356	119
29	GET	13,302	120	79	SOURCE	6,508	120	129	AROUND	4,311	118
30	BEEN	12,687	120	80	ANTI	6,487	120	130	SHE	4,271	112
31	OUR	12,589	120	81	WERE	6,419	117	131	BAD	4,241	120
32	SHOULD	12,345	120	82	SAID	6,404	119	132	EVERY	4,217	118
33	HIS	12,305	120	83	PLEASE	6,288	120	133	DAY	4,208	118
34	19	12,003	70	84	SOURCES	6,274	120	134	GOP	4,173	120
35	TWITTER	11,888	119	85	FOXNEWS	6,252	118	135	GOVERNMENT	4,110	117
36	STOP	11,660	120	86	REAL	6,131	120	136	FIGHT	4,101	116
37	ONE	11,627	120	87	REALDONALDTRUMP	6,071	73	137	REPORTING	4,049	120
38	NEW	11,353	120	88	U	5,911	120	138	USE	4,046	118
39	WHY	11,244	120	89	SAY	5,747	120	139	CLIMATE	4,025	118
40	US	11,157	120	90	BELIEVE	5,708	120	140	HIM	4,020	115
41	PROPAGANDA	11,123	120	91	STILL	5,699	120	141	COUNTRY	4,013	112
42	NOW	10,766	120	92	ME	5,677	120	142	FIRST	4,003	118
43	VACCINE	10,730	110	93	HATE	5,653	120	143	PRESIDENT	3,972	108
44	INFORMATION	10,187	120	94	DOWN	5,648	118	144	MUST	3,968	119
45	BEING	10,130	120	95	CONSPIRACY	5,535	112	145	OFF	3,964	117
46	RIGHT	10,108	120	96	OUTLETS	5,445	117				
47	THEM	9,976	120	97	WANT	5,357	120				
48	ITS	9,672	120	98	MAKE	5,348	119				
49	CORONAVIRUS	9,380	24	99	DON'T	5,329	91				
50	OVER	9,354	120	100	ARTICLE	5,294	120				

Appendix D: Disinformation Definitions

Click to return to [Section 5.5.5](#), where the link to this appendix appears.

N	Definition	Type	Year	Citation
1	news articles that are intentionally and verifiably false, and could mislead readers	ACA	2017	(Allcott & Gentzkow, 2017)
2	either wholly false or containing deliberately misleading elements incorporated within its content or context	ACA	2018	(Bakir & McStay, 2018)
3	cases of deliberate presentation of false or misleading claims as news, where these are misleading by design	ACA	2018	(Gelfert, 2018)
4	knowingly false or misleading content created largely for the purpose of generating ad revenue	ACA	2019	(Guess et al., 2019)
5	deceptive information	ACA	2013	(Karlova & Fisher, 2013)
6	fabricated information that mimics news media content in form but not in organizational process or intent	ACA	2018	(Lazer et al., 2018)
7	The presentation of false claims that purport to be about the world in a format and with a content that resembles the format and content of legitimate media organizations.	ACA	2017	(Levy, 2017)
8	information that is designed to be confused with legitimate news and is intentionally false	ACA	2017	Facebook, cited by Oremus, 2017
9	news stories that were fabricated (but presented as if from legitimate sources) and promoted on social media in order to deceive the public for ideological and/or financial gain	ACA	2018	(Pennycook et al., 2018)
10	one that purports to describe events in the real world, typically by mimicking the conventions of traditional media reportage, yet is known by its creators to be significantly false, and is transmitted with the two goals of being widely re-transmitted and of deceiving at least some of its audience	ACA	2017	(Rini, 2017)
11	fabricated stories presented as if from legitimate sources	ACA	2020	(Pennycook et al., 2020)
12	the deliberate creation and sharing of information known to be false	ACA	2017	(Wardle, 2017)
13	information that is deliberately false or misleading	ACA	2017	(Jack, 2017)
14	Disinformation is the deliberate creation and dissemination of false and/or manipulated information that is intended to deceive and mislead audiences, either for the purposes of causing harm, or for political, personal or financial gain.	GOV	2020	(HM Government, 2020)
15	false, inaccurate, or misleading information designed, presented and promoted to intentionally cause public harm or for profit	GOV	2018	(European Commission, 2018b)

16	verifiably false or misleading information created, presented and disseminated for economic gain or to intentionally deceive the public	GOV	2017	(European Commission, 2017)
17	Information that is false and deliberately created to harm a person, social group, organisation or country	GOV	2018	(UNESCO)
18	Disinformation is the deliberate creation and/or sharing of false information with the intention to deceive and mislead audiences	GOV	2020	(Government Communication Service, 2020)
19	Information that is false and deliberately created to harm a person, social group, organization or country	GOV	2017	(Wardle & Derakhshan, 2017)
20	a message intended to mislead media users	GOV	2020	(NATO, 2020)
21	the purposeful dissemination of false information intended to mislead or harm	GOV	2019	(Nemr & Gangware, 2019)
22	information which is created or disseminated with the deliberate intent to mislead; this could be to cause harm, or for personal, political or financial gain	GOV	2019	(HM Government, 2019)
23	Is created, presented and disseminated for economic gain or to intentionally deceive the public	GOV	2018	(European Commission, 2018a)
24	the deliberate creation and sharing of false and/or manipulated information that is intended to deceive and mislead audiences, either for the purposes of causing harm, or for political, personal or financial gain	GOV	2018	(Department for Digital, 2018)
25	a completely fabricated claim or story created with an intention to deceive, often for a secondary gain	INI	2017	(FakeNewsChallenge, 2017)
26	Fake news is news or stories created to deliberately misinform or deceive readers.	INI	2019	(Webwise.ie, 2019)
27	falsehood created with the intention to cause harm	MED	2020	(Niu et al., 2020)
28	deliberately false stories that appear to come from credible, journalistic sources	MED	2018	(The Associated Press, 2018)
29	Fake news is information deliberately fabricated and published with the intention to deceive and mislead others into believing falsehoods or doubting verifiable facts	MED	2019	(Ethical Journalism Network, 2019)
30	Fake news is a catch-all phrase used to describe news based on lies or half truths that are designed to deceive	MED	2017	(Northern Insight, 2017)
31	1. False stories that are deliberately published or sent around, in order to make people believe something untrue or to get lots of people to visit a website. These are deliberate lies that are put online, even though the person writing them knows that they are made up.	MED	2019	(BBC CBBC NewsRound, 2019)
32	1. Stories that may have some truth to them, but they're not completely accurate. This is because the people writing them - for example, journalists	MED	2019	(BBC CBBC NewsRound, 2019)

	or bloggers - don't check all of the facts before publishing the story, or they might exaggerate some of it.			
33	news or stories on the internet that are not true	MED	2019	(BBC CBBC NewsRound, 2019)
34	completely false information that was created for financial gain	MED	2017	(Silverman, 2017b)
35	false or misleading information spread with the intention to deceive	NGO	2020	(Atlantic Council, 2020)
36	reports, images, and videos that are shared to purposefully spread misinformation i.e. information that is factually incorrect	OTH	2020	(IONOS, 2020)
37	the distribution online of false information disguised as legitimate news stories	OTH	2017	(Norton Rose Fulbright, 2017)
38	false information spread in order to deceive people	REF	2021	(Cambridge Dictionary, 2021a)
39	false stories that appear to be news, spread on the internet or using other media, usually created to influence political views or as a joke	REF	2021	(Cambridge Dictionary, 2021b)
40	https://libguides.madisoncollege.edu/fakenews	REF	2020	(University of Michigan Library, 2020)
41	false news stories, often of a sensational nature, created to be widely shared online for the purpose of generating ad revenue via web traffic or discrediting a public figure, political movement, company	REF	2019	(Madison College Libraries, 2019)
42	spreading false information in order to deceive people	REF	2021	(Collins Dictionary, 2021a)
43	false even though it is being reported as news	REF	2021	(Collins Dictionary, 2021b)
44	false news stories, often of a sensational nature, created to be widely shared or distributed for the purpose of generating revenue, or promoting or discrediting a public figure, political movement, company, etc.:	REF	2021	(Dictionary.com, 2021)
45	False information which is intended to mislead, especially propaganda issued by a government organization to a rival power or the media	REF	2021	(Lexico.com, 2021)
46	a story that is presented as being a genuine item of news but is in fact not true and is intended to deceive people	REF	2020	(Macmillan Dictionary)
47	false information deliberately and often covertly spread (as by the planting of rumors) in order to influence public opinion or obscure the truth	REF	2021	(Merriam Webster, 2021)
48	news that conveys or incorporates false, fabricated, or deliberately misleading information, or that is characterized as or accused of doing so	REF	2024	(OED, 2020)
49	false information that is given deliberately	REF	2021	(Oxford Learner's Dictionaries, 2021a)

50	false reports of events, written and read on websites	REF	2021	(Oxford Learner's Dictionaries, 2021b)
51	false information intended to deceive or mislead	REF	2021	(The Free Dictionary, 2021)
52	dissemination (in the press, on the radio, etc.) of false reports intended to mislead public opinion	REF	1952	(Great Soviet Encyclopedia, 1952)

Appendix E: Disinformation keyword list

Table 116 Disinformation Corpus Keywords

N	Code	Key word	Fre q.	Freq. per 10,000	Te xts	RC. Freq.	RC Freq. per 10,000	Log _L	Log _R
1	Story	CONTRA	239 5	4.20	17	15	0.02	380 7.74	7.6 9
2	Story	DIFFICULTY	266 0	4.67	21	54	0.07	394 4.35	5.9 9
3	AC Group	PRESIDENTS	294 5	5.17	42	72	0.10	428 7.56	5.7 2
4	AC Individual	VANCE	490	0.86	10	12	0.02	713. 25	5.7 2
5	Story	BAND	243 8	4.28	39	72	0.10	347 3.4	5.4 5
6	Story	SHOE	596	1.05	12	22	0.03	823. 9	5.1 3
7	AC Individual	RATCLIFFE	195	0.34	13	12	0.02	245. 59	4.3 9
8	AC group	ADOS	228	0.40	25	15	0.02	282. 8	4.3
9	AC Group	AIDES	227	0.40	29	15	0.02	281. 27	4.2 9
1 0	Story	SPRING	119 4	2.09	41	81	0.11	147 0.22	4.2 5
1 1	Publisher	EUVSDISINFO	155	0.27	54	11	0.01	188. 76	4.1 9
1 2	AC Individual	GRANDFATHE R	158	0.28	38	12	0.02	189. 1	4.0 9
1 3	Story	PARADIGM	220	0.39	29	17	0.02	262. 09	4.0 6
1 4	Story	SOMEBODY	251 0	4.40	55	198	0.27	297 3.63	4.0 3
1 5	AC Individual	SKRIPAL	165	0.29	19	14	0.02	191. 53	3.9 3
1 6	AC group	HELMETS	216	0.38	38	19	0.03	248. 09	3.8 8
1 7	AC Gov	KREMLINÂ€™S	112	0.20	37	10	0.01	128. 07	3.8 5
1 8	OP effects	NUMBING	121	0.21	20	11	0.01	137. 6	3.8 3
1 9	AC Gov	DNI	195	0.34	17	18	0.02	220. 72	3.8 1
2 0	AC Country	FUKUSHIMA	766	1.34	24	71	0.10	865. 91	3.8
2 1	Story	OPERANDI	225	0.39	34	21	0.03	253. 8	3.7 9

2 2	AC Country	EGYPT'S	114	0.20	13	11	0.01	127. 24	3.7 4
2 3	Publisher	RSF	142	0.25	40	14	0.02	157. 39	3.7 1
2 4	AC Entity	NDAA	101	0.18	31	10	0.01	111. 79	3.7 1
2 5	AC Gov	GRU	220	0.39	43	22	0.03	242. 72	3.6 9
2 6	OP response	REGS	149	0.26	23	15	0.02	164. 02	3.6 8
2 7	Story	MODUS	227	0.40	35	23	0.03	249. 35	3.6 7
2 8	Synonym	DISINFO	117 2	2.06	10 5	125	0.17	126 5.01	3.6
2 9	AC Gov	GCHQ	113	0.20	25	12	0.02	122. 15	3.6
3 0	OP implementa tion	UNDERCOVER	183	0.32	27	20	0.03	195. 83	3.5 6
3 1	AC Individual	HUNTER'S	88	0.15	17	10	0.01	92.8 5	3.5 1
3 2	OP effects	SWAMPED	137	0.24	18	16	0.02	143. 08	3.4 7
3 3	Tech	LAPTOP	931	1.63	21	111	0.15	964. 74	3.4 4
3 4	AC Individual	STEELE	526	0.92	48	64	0.09	540. 8	3.4 1
3 5	AC Country	PAKISTAN'S	81	0.14	18	10	0.01	82.8	3.3 9
3 6	Infrequent	SMARTMATIC	572	1.00	12	71	0.10	583. 49	3.3 8
3 7	AC Individual	MERKEL	145	0.25	29	18	0.02	147. 91	3.3 8
3 8	OP effects	PERSECUTION	233	0.41	41	30	0.04	234. 2	3.3 3
3 9	AC Country	IRANIANS	140	0.25	29	18	0.02	140. 8	3.3 3
4 0	AC Individual	SOLOMON	236	0.41	28	31	0.04	235. 26	3.3
4 1	OP implementa tion	DEPLOYING	84	0.15	22	11	0.01	83.8 5	3.3
4 2	News practices	UFO	286	0.50	81	38	0.05	283. 75	3.2 8
4 3	AC Country	BELARUS	90	0.16	28	12	0.02	89.1 6	3.2 8
4 4	AC Country	SOVIET	454	0.80	92	61	0.08	448. 3	3.2 7
4 5	Infrequent	2.7	268	0.47	12	36	0.05	264. 66	3.2 7

4 6	Publisher	TNI	134	0.24	14	18	0.02	132. 33	3.2 7
4 7	AC Individual	BUSH	878	1.54	79	118	0.16	866. 88	3.2 6
4 8	AC Entity	MH17	212	0.37	55	29	0.04	207. 74	3.2 4
4 9	AC Country	UNSC	102	0.18	21	14	0.02	99.8	3.2 3
5 0	AC Country	KREMLIN	144 4	2.53	90	201	0.27	140 4.3	3.2 1
5 1	AC Country	RUSSIA'S	143 8	2.52	92	204	0.28	138 9.4	3.1 9
5 2	AC Gov	FISA	198	0.35	29	28	0.04	191. 22	3.1 9
5 3	Story	INDICATOR	77	0.14	57	11	0.01	74.0 3	3.1 8
5 4	OP effects	ANTISEMITISM	402	0.71	39	58	0.08	384. 77	3.1 6
5 5	AC Country	ALGERIA	68	0.12	13	10	0.01	64.5 2	3.1 4
5 6	AC Gov	EU'S	135	0.24	29	20	0.03	127. 9	3.1 3
5 7	Infrequent	SEIZES	108	0.19	8	16	0.02	102. 13	3.1 2
5 8	Story	UNRAVELING	87	0.15	14	13	0.02	81.9 4	3.1 1
5 9	Infrequent	WWII	151	0.26	42	23	0.03	140. 95	3.0 8
6 0	Infrequent	QUIETLY	534	0.94	60	82	0.11	496. 54	3.0 7
6 1	Tech	DOMAINS	130	0.23	20	20	0.03	120. 77	3.0 7
6 2	User or Hashtag	CCPVIRUS	78	0.14	13	12	0.02	72.4 6	3.0 7
6 3	Synonym	MEDIABIAS	186	0.33	36	29	0.04	171. 69	3.0 5
6 4	AC Individual	HERRIDGE	178	0.31	19	28	0.04	163. 6	3.0 4
6 5	Publisher	SHORENSTEIN CTR	159	0.28	16	25	0.03	146. 17	3.0 4
6 6	OP characteristics	HYBRID	112	0.20	48	18	0.02	101. 86	3.0 1
6 7	Tech	CYBERATTACK S	178	0.31	49	29	0.04	160. 79	2.9 9
6 8	AC group	BOOGALOO	104	0.18	10	17	0.02	93.7 9	2.9 8
6 9	User or Hashtag	CAFREELAND	109	0.19	33	18	0.02	97.7 9	2.9 7
7 0	User or Hashtag	20COMMITTEE	91	0.16	31	15	0.02	81.7 2	2.9 7

7 1	Infrequent	DOSSIER	693	1.22	55	116	0.16	617. 44	2.9 5
7 2	Infrequent	YOUNGEST	84	0.15	13	14	0.02	75.0 1	2.9 5
7 3	Infrequent	REPETITIVE	142	0.25	26	24	0.03	125. 89	2.9 3
7 4	User or Hashtag	DEFUNDFOXN EWS	58	0.10	6	10	0.01	50.8 9	2.9 1
7 5	Infrequent	PROBING	110	0.19	19	19	0.03	96.4 1	2.9
7 6	AC Individual	HUNTER	142 7	2.50	34	248	0.34	124 6.69	2.8 9
7 7	User or Hashtag	ANNEAPPLEB AUM	91	0.16	40	16	0.02	79.0 1	2.8 8
7 8	AC Gov	KGB	275	0.48	90	49	0.07	237. 05	2.8 6
7 9	AC Individual	RESSA	84	0.15	24	15	0.02	72.3 2	2.8 5
8 0	OP response	DEPROGRAM MING	66	0.12	23	12	0.02	56.2 6	2.8 3
8 1	User or Hashtag	SENROBPORT MAN	87	0.15	33	16	0.02	73.7	2.8 1
8 2	OP implementa tion	SPONSORED	138 4	2.43	74	256	0.35	116 8.58	2.8
8 3	AC Individual	SIDNEY	238	0.42	15	44	0.06	201. 02	2.8
8 4	Infrequent	PERJURY	113	0.20	22	21	0.03	95.1 6	2.8
8 5	Synonym	PSYOP	70	0.12	41	13	0.02	58.9 7	2.8
8 6	OP response	HOWTO	54	0.09	13	10	0.01	45.5 7	2.8
8 7	User or Hashtag	KURTSCHLICH TER	100	0.18	20	19	0.03	83.1 6	2.7 7
8 8	AC Group	VERITAS	514	0.90	31	98	0.13	426. 56	2.7 6
8 9	Infrequent	MEPS	93	0.16	31	18	0.02	76.5 1	2.7 4
9 0	OP implementa tion	ADVERSARY	62	0.11	33	12	0.02	51	2.7 4
9 1	AC Individual	CHUCKGRASS LEY	113	0.20	27	22	0.03	92.6 4	2.7 3
9 2	AC Gov	UNGENEVA	112	0.20	15	22	0.03	91.3 4	2.7 2
9 3	User or Hashtag	SENJONIERN S T	51	0.09	15	10	0.01	41.6 4	2.7 2
9 4	News practices	INTERNMENT	51	0.09	10	10	0.01	41.6 4	2.7 2

95	Tech	MIS	1190	2.09	86	235	0.32	967.38	2.71
96	AC Country	RU	218	0.38	67	43	0.06	177.34	2.71
97	OP effects	SUBVERSION	96	0.17	43	19	0.03	77.94	2.71
98	OP implementation	SOCK	66	0.12	25	13	0.02	53.74	2.71
99	Synonym	ESPIONAGE	111	0.19	42	22	0.03	90.04	2.7
1000	User or Hashtag	FOXISNOTNEWS	120	0.21	30	24	0.03	96.81	2.69
1001	Publisher	ZAKRZEWSKI	60	0.11	18	12	0.02	48.41	2.69
1002	News practices	UFOS	55	0.10	28	11	0.01	44.37	2.69
1003	Synonym	Â€œDEEP	55	0.10	19	11	0.01	44.37	2.69
1004	AC Country	RUSSIAN	17041	29.90	108	3448	4.68	13680.5	2.68
1005	AC Country	UKRAINIAN	356	0.62	68	72	0.10	285.26	2.68
1006	AC Country	CRIMEA	99	0.17	34	20	0.03	79.38	2.68
1007	News practices	SECRETLY	227	0.40	41	46	0.06	181.68	2.67
1008	User or Hashtag	TONYPOSNANSKI	59	0.10	17	12	0.02	47.11	2.67
1009	User or Hashtag	RONJOHNSONWI	59	0.10	20	12	0.02	47.11	2.67
1100	AC Country	EUROPEANS	54	0.09	28	11	0.01	43.08	2.67
1111	AC country	MOSCOW	470	0.82	76	96	0.13	374.34	2.66
1112	Infrequent	BACKFIRES	49	0.09	12	10	0.01	39.05	2.66

1 1 3	AC Individual	OTTO	49	0.09	12	10	0.01	39.0 5	2.6 6
1 1 4	AC Country	DOWNING	73	0.13	26	15	0.02	57.9 3	2.6 5
1 1 5	AC Country	TEHRAN	68	0.12	24	14	0.02	53.8 9	2.6 5
1 1 6	Story	ENTERTAINED	58	0.10	16	12	0.02	45.8 3	2.6 4
1 1 7	PCA	CEASEFIRE	48	0.08	20	10	0.01	37.7 6	2.6 3
1 1 8	Tech	DRONE	176	0.31	39	37	0.05	137. 68	2.6 2
1 1 9	News practices	COVERT	176	0.31	54	37	0.05	137. 68	2.6 2
1 2 0	News practices	POSING	767	1.35	55	162	0.22	598. 22	2.6 1
1 2 1	AC Individual	CATHERINE	142	0.25	24	30	0.04	110. 73	2.6 1
1 2 2	OP response	OSINT	66	0.12	36	14	0.02	51.3 4	2.6 1
1 2 3	OP implementa tion	BANKROLLIN G	52	0.09	9	11	0.01	40.5 2	2.6 1
1 2 4	Infrequent	MYSTERIOUS	127	0.22	34	27	0.04	98.6 4	2.6
1 2 5	AC Country	DIPLOMATS	61	0.11	28	13	0.02	47.3 1	2.6
1 2 6	OP implementa tion	LAUNDER	47	0.08	25	10	0.01	36.4 9	2.6
1 2 7	OP effects	DIPLOMACY	112	0.20	34	24	0.03	86.5 5	2.5 9
1 2 8	AC Individual	GREENWALD	102	0.18	34	22	0.03	78.4 9	2.5 8
1 2 9	AC Individual	VLADIMIR	188	0.33	55	41	0.06	143. 63	2.5 7

1 3 0	Publisher	BELLINGCAT	222	0.39	49	49	0.07	168. 27	2.5 5
1 3 1	Warfare and defence	SPIES	177	0.31	57	39	0.05	134. 32	2.5 5
1 3 2	AC Individual	FLYNN	303	0.53	44	68	0.09	227. 13	2.5 3
1 3 3	User or Hashtag	SELECTEDWIS DOM	76	0.13	35	17	0.02	57.1	2.5 3
1 3 4	OP effects	HUMANRIGHT S	374	0.66	54	84	0.11	280. 21	2.5 2
1 3 5	PCA	NOVICHOK	49	0.09	12	11	0.01	36.7 2	2.5 2
1 3 6	User or Hashtag	INFORMATION WARFARE	49	0.09	26	11	0.01	36.7 2	2.5 2
1 3 7	AC Gov	CIA	119 2	2.09	11 0	270	0.37	887. 97	2.5 1
1 3 8	User or Hashtag	ABE	53	0.09	18	12	0.02	39.4 9	2.5 1
1 3 9	AC Country	UKRAINE	163 0	2.86	96	372	0.51	120 8.04	2.5
1 4 0	AC Country	FOREIGNERS	114	0.20	26	26	0.04	84.5 3	2.5
1 4 1	User or Hashtag	MARIARESSA	105	0.18	31	24	0.03	77.7 4	2.5
1 4 2	Synonym	PSY	95	0.17	52	22	0.03	69.7	2.4 8
1 4 3	OP implementa tion	WAGING	257	0.45	57	60	0.08	187. 51	2.4 7
1 4 4	User or Hashtag	RVAWONK	166	0.29	46	39	0.05	120. 58	2.4 6
1 4 5	User or Hashtag	FAIRNESSDO CTRINE	72	0.13	22	17	0.02	52.1 2	2.4 5
1 4 6	User or Hashtag	CAITOTZ	55	0.10	25	13	0.02	39.7 8	2.4 5

1 4 7	AC Country	IRANIAN	661	1.16	62	157	0.21	476. 45	2.4 4
1 4 8	Infrequent	202	303	0.53	26	72	0.10	218. 33	2.4 4
1 4 9	AC Country	EUROPEANS	67	0.12	21	16	0.02	48.1 1	2.4 4
1 5 0	AC Individual	WOHL	42	0.07	13	10	0.01	30.2 2	2.4 4
1 5 1	AC Individual	PUTIN'S	779	1.37	74	187	0.25	558. 55	2.4 3
1 5 2	AC Individual	KOCHS	75	0.13	26	18	0.02	53.6 6	2.4 3
1 5 3	User or Hashtag	PUTINRF	50	0.09	18	12	0.02	35.7 7	2.4 3
1 5 4	OP implementation	CASHING	50	0.09	14	12	0.02	35.7 7	2.4 3
1 5 5	OP implementation	PROXIES	46	0.08	22	11	0.01	33	2.4 3
1 5 6	AC Entity	FNC	120	0.21	33	29	0.04	85.4 3	2.4 2
1 5 7	AC Gov	DCMS	58	0.10	24	14	0.02	41.3 3	2.4 2
1 5 8	News practices	POSSESSION	54	0.09	16	13	0.02	38.5 5	2.4 2
1 5 9	Warfare and defence	SPY	521	0.91	92	127	0.17	368. 6	2.4 1
1 6 0	Story	CRITIQUE	201	0.35	37	49	0.07	142. 19	2.4 1
1 6 1	PCA	WMD	82	0.14	42	20	0.03	57.9 9	2.4 1
1 6 2	OP implementation	COORDINATED	101 5	1.78	69	248	0.34	716. 86	2.4
1 6 3	PCA	WHISTLEBLOWERS	127	0.22	25	31	0.04	89.7 6	2.4

1 6 4	Infrequent	GEOPOLITICAL	57	0.10	26	14	0.02	40.1	2.4
1 6 5	PCA	INVADED	49	0.09	21	12	0.02	34.5 5	2.4
1 6 6	Publisher	JSOLOMONREPORTS	142	0.25	29	35	0.05	99.6 5	2.3 9
1 6 7	User or Hashtag	NAMO	77	0.14	8	19	0.03	53.9 9	2.3 9
1 6 8	AC Group	NATIONALIST	623	1.09	48	155	0.21	434. 18	2.3 8
1 6 9	AC Individual	HUNTERS	68	0.12	23	17	0.02	47.2 2	2.3 7
1 7 0	User or Hashtag	SPUTNIKINT	64	0.11	43	16	0.02	44.4 4	2.3 7
1 7 1	OP effects	OBSCURE	214	0.38	33	54	0.07	147. 57	2.3 6
1 7 2	AC Country	EUROPEAN	962	1.69	75	244	0.33	660. 82	2.3 5
1 7 3	AC Gov	FEC	79	0.14	21	20	0.03	54.3 4	2.3 5
1 7 4	OP implementa tion	FRONTIER	71	0.12	14	18	0.02	48.7 9	2.3 5
1 7 5	OP effects	SMEARS	431	0.76	55	110	0.15	294. 67	2.3 4
1 7 6	Infrequent	KNO	47	0.08	2	12	0.02	32.1 2	2.3 4
1 7 7	Story	BAFFLED	47	0.08	17	12	0.02	32.1 2	2.3 4
1 7 8	Story	TESTIFIED	163	0.29	27	42	0.06	110. 63	2.3 3
1 7 9	AC Group	ALLIES	893	1.57	54	231	0.31	604. 27	2.3 2
1 8 0	AC group	SPUTNIK	515	0.90	71	133	0.18	348. 93	2.3 2

1 8 1	AC group	MEK	201	0.35	29	52	0.07	136	2.3 2
1 8 2	OP implementa tion	PSYOPS	147	0.26	58	38	0.05	99.5 2	2.3 2
1 8 3	OP response	DISMANTLE	112	0.20	39	29	0.04	75.7 3	2.3 2
1 8 4	Infrequent	RECRUIT	85	0.15	23	22	0.03	57.4 9	2.3 2
1 8 5	AC Entity	CSIS	54	0.09	16	14	0.02	36.4 8	2.3 2
1 8 6	OP implementa tion	OPERATION	105 3	1.85	86	274	0.37	709. 29	2.3 1
1 8 7	Infrequent	HIJACKING	69	0.12	17	18	0.02	46.3 9	2.3 1
1 8 8	User or Hashtag	OBAMAGATE	46	0.08	14	12	0.02	30.9 2	2.3 1
1 8 9	User or Hashtag	JAMESOKEEFE III	133	0.23	17	35	0.05	88.8	2.3
1 9 0	AC Entity	BURISMA	61	0.11	19	16	0.02	40.8 3	2.3
1 9 1	AC Gov	MI6	57	0.10	32	15	0.02	38.0 6	2.3
1 9 2	AC Individual	FIONA	53	0.09	16	14	0.02	35.2 8	2.2 9
1 9 3	OP effects	MEDDLE	53	0.09	34	14	0.02	35.2 8	2.2 9
1 9 4	OP implementa tion	OPS	260	0.46	66	69	0.09	172. 45	2.2 8
1 9 5	AC group	IRA	79	0.14	32	21	0.03	52.3 3	2.2 8
1 9 6	User or Hashtag	DANABASHCN N	60	0.11	15	16	0.02	39.6 4	2.2 8
1 9 7	AC Country	CHINA'S	748	1.31	58	201	0.27	492. 43	2.2 7

1 9 8	AC Country	BEIJING	258	0.45	37	69	0.09	170. 08	2.2 7
1 9 9	News practices	CHEMTRAILS	56	0.10	32	15	0.02	36.8 7	2.2 7
2 0 0	User or Hashtag	EUROPARL	78	0.14	32	21	0.03	51.1 5	2.2 6
2 0 1	Infrequent	2024	107	0.19	21	29	0.04	69.7 9	2.2 5
2 0 2	User or Hashtag	THESPYBRIEF	48	0.08	28	13	0.02	31.3 2	2.2 5
2 0 3	AC Country	QATAR	150	0.26	39	41	0.06	97.1 6	2.2 4
2 0 4	AC Gov	DOD	84	0.15	35	23	0.03	54.3 3	2.2 4
2 0 5	Warfare and defence	SPYING	182	0.32	37	50	0.07	117. 4	2.2 3
2 0 6	User or Hashtag	MOSCOWMIT CH	51	0.09	21	14	0.02	32.9 2	2.2 3
2 0 7	Story	FLOW	131 6	2.31	60	364	0.49	844. 19	2.2 2
2 0 8	PCA	DEFUNDED	47	0.08	21	13	0.02	30.1 5	2.2 2
2 0 9	AC Individual	MANN	47	0.08	14	13	0.02	30.1 5	2.2 2
2 1 0	User or Hashtag	HONGKONGP ROTESTS	47	0.08	7	13	0.02	30.1 5	2.2 2
2 1 1	OP implementa tion	HOMEGROWN	61	0.11	23	17	0.02	38.8 9	2.2 1
2 1 2	AC Country	TAIWAN	449	0.79	43	127	0.17	282. 7	2.1 9
2 1 3	AC Country	TAIWANESE	53	0.09	24	15	0.02	33.3 5	2.1 9
2 1 4	AC Individual	BARR	552	0.97	31	157	0.21	345. 93	2.1 8

2 1 5	AC Gov	UNESCO	203	0.36	46	58	0.08	126. 73	2.1 8
2 1 6	OP implementa tion	INTERFERE	196	0.34	46	56	0.08	122. 36	2.1 8
2 1 7	OP response	DIPLOMATIC	63	0.11	28	18	0.02	39.3 3	2.1 8
2 1 8	Story	DISPLACED	56	0.10	12	16	0.02	34.9 6	2.1 8
2 1 9	PCA	INTERCEPT	56	0.10	27	16	0.02	34.9 6	2.1 8
2 2 0	AC Individual	POMPEO	255	0.45	37	73	0.10	158. 92	2.1 7
2 2 1	OP implementa tion	APPARATUS	125	0.22	55	36	0.05	77.5	2.1 7
2 2 2	AC group	OBSERVATOR Y	94	0.16	29	27	0.04	58.4 2	2.1 7
2 2 3	User or Hashtag	NHK	80	0.14	24	23	0.03	49.6 8	2.1 7
2 2 4	OP characterist ics	ZIONIST	73	0.13	42	21	0.03	45.3 1	2.1 7
2 2 5	AC Group	ANTIFA	121 3	2.13	36	350	0.48	750. 89	2.1 6
2 2 6	Warfare and defence	WEAPONIZED	511	0.90	58	148	0.20	315. 3	2.1 6
2 2 7	User or Hashtag	KIMSTRASSEL	72	0.13	19	21	0.03	44.1 6	2.1 5
2 2 8	OP effects	SUBVERSIVE	72	0.13	32	21	0.03	44.1 6	2.1 5
2 2 9	AC Individual	CLAPPER	48	0.08	25	14	0.02	29.4 4	2.1 5
2 3 0	User or Hashtag	BOKNOWSNE WS	48	0.08	3	14	0.02	29.4 4	2.1 5
2 3 1	OP effects	SOW	888	1.56	66	261	0.35	540. 95	2.1 4

2 3 2	User or Hashtag	LOUISEMENS CH	92	0.16	37	27	0.04	56.1 2	2.1 4
2 3 3	Infrequent	DECLINES	65	0.11	15	19	0.03	39.7 9	2.1 4
2 3 4	News practices	DOOMSDAY	51	0.09	12	15	0.02	31.0 5	2.1 4
2 3 5	AC Country	RUS	51	0.09	21	15	0.02	31.0 5	2.1 4
2 3 6	Warfare and defence	WARFARE	789	1.38	77	233	0.32	478. 65	2.1 3
2 3 7	Story	WARRANT	152	0.27	29	45	0.06	92.0 1	2.1 3
2 3 8	Infrequent	SEIZED	146	0.26	35	43	0.06	88.7 8	2.1 3
2 3 9	OP implementa tion	INTEL	644	1.13	81	191	0.26	389. 2	2.1 2
2 4 0	AC Individual	POPE	215	0.38	44	64	0.09	129. 51	2.1 2
2 4 1	News practices	CHEMICAL	185	0.32	43	55	0.07	111. 57	2.1 2
2 4 2	User or Hashtag	BOSTONJOAN	74	0.13	25	22	0.03	44.6 3	2.1 2
2 4 3	Infrequent	SINS	50	0.09	24	15	0.02	29.9 1	2.1 1
2 4 4	Publisher	HEDGE	366	0.64	65	110	0.15	218. 59	2.1
2 4 5	AC Individual	POWELL	297	0.52	21	90	0.12	176. 07	2.0 9
2 4 6	PCA	SUBPOENA	56	0.10	24	17	0.02	33.1 5	2.0 9
2 4 7	AC Country	EU	356 6	6.26	10 1	1087	1.48	210 2.75	2.0 8
2 4 8	User or Hashtag	BYRONYORK	85	0.15	30	26	0.04	49.9 6	2.0 8

2 4 9	User or Hashtag	BENNYJOHNS ON	59	0.10	24	18	0.02	34.7 6	2.0 8
2 5 0	AC Country	RUSSIA	845 8	14.84	11 0	2609	3.54	494 6.48	2.0 7
2 5 1	AC group	ACTORS	128 3	2.25	57	395	0.54	749. 68	2.0 7
2 5 2	AC country	KONG	455	0.80	35	140	0.19	266. 01	2.0 7
2 5 3	OP implementa tion	OPERATIVES	277	0.49	56	85	0.12	162. 35	2.0 7
2 5 4	User or Hashtag	RICHARDGRE NELL	78	0.14	21	24	0.03	45.6	2.0 7
2 5 5	AC Country	HONG	465	0.82	33	144	0.20	270. 25	2.0 6
2 5 6	Emotion and Affect	REPREHENSIB LE	219	0.38	22	68	0.09	126. 96	2.0 6
2 5 7	AC group	LOYALISTS	71	0.12	27	22	0.03	41.2 4	2.0 6
2 5 8	AC Entity	RAPPLER	71	0.12	27	22	0.03	41.2 4	2.0 6
2 5 9	Infrequent	ADVISERS	58	0.10	16	18	0.02	33.6 4	2.0 6
2 6 0	Infrequent	COM'S	208	0.36	25	65	0.09	119. 87	2.0 5
2 6 1	AC Country	SWEDISH	80	0.14	30	25	0.03	46.1	2.0 5
2 6 2	OP response	THWART	77	0.14	25	24	0.03	44.4 8	2.0 5
2 6 3	AC Entity	BING	64	0.11	16	20	0.03	36.8 8	2.0 5
2 6 4	Infrequent	INTER	64	0.11	30	20	0.03	36.8 8	2.0 5
2 6 5	Publisher	FT	143	0.25	39	45	0.06	81.8 7	2.0 4

2 6 6	AC Country	IRAN	182 5	3.20	10 1	579	0.79	103 6.86	2.0 3
2 6 7	News practices	NWO	101	0.18	49	32	0.04	57.4 6	2.0 3
2 6 8	Warfare and defence	AGENTS	639	1.12	95	204	0.28	360. 89	2.0 2
2 6 9	User or Hashtag	RUSSIAGATE	132	0.23	51	42	0.06	74.7 9	2.0 2
2 7 0	AC Individual	PUTIN	229 2	4.02	92	737	1.00	128 5.54	2.0 1
2 7 1	User or Hashtag	EMPTYWHEEL	53	0.09	28	17	0.02	29.8	2.0 1
2 7 2	User or Hashtag	NATASHABERT RAND	90	0.16	30	29	0.04	50.3 8	2
2 7 3	OP response	REG	90	0.16	21	29	0.04	50.3 8	2
2 7 4	Emotion and Affect	FEEBLE	59	0.10	20	19	0.03	33.0 4	2
2 7 5	Story	SATISFIED	59	0.10	13	19	0.03	33.0 4	2
2 7 6	AC Gov	FBI	235 8	4.14	89	767	1.04	130 7.89	1.9 9
2 7 7	AC Country	NATO	558	0.98	88	182	0.25	308. 68	1.9 9
2 7 8	AC Country	LIBYA	157	0.28	56	51	0.07	87.2	1.9 9
2 7 9	AC Individual	MCFAUL	154	0.27	41	50	0.07	85.5 7	1.9 9
2 8 0	Story	SWEEP	86	0.15	15	28	0.04	47.6 6	1.9 9
2 8 1	Warfare and defence	SOLDIER	83	0.15	29	27	0.04	46.0 3	1.9 9
2 8 2	AC Gov	MOCKINGBIR D	77	0.14	33	25	0.03	42.7 9	1.9 9

2 8 3	User or Hashtag	AARONJMATE	74	0.13	32	24	0.03	41.1 6	1.9 9
2 8 4	AC Country	LATVIA	329	0.58	44	108	0.15	180. 85	1.9 8
2 8 5	News practices	INAUTHENTIC	107	0.19	32	35	0.05	59.0 2	1.9 8
2 8 6	AC Gov	REGIMEÂ€™S	98	0.17	22	32	0.04	54.1 5	1.9 8
2 8 7	OP implementa tion	OPERATIONS	626	1.10	59	206	0.28	343. 28	1.9 7
2 8 8	OP effects	CORROSIVE	87	0.15	36	29	0.04	47.1	1.9 5
2 8 9	PCA	NOTICES	72	0.13	7	24	0.03	38.9 8	1.9 5
2 9 0	News practices	RECKONING	169	0.30	29	57	0.08	90.4 2	1.9 4
2 9 1	User or Hashtag	THEPLUMLINE GS	110	0.19	37	37	0.05	59.0 2	1.9 4
2 9 2	Story	PASSIVE	92	0.16	20	31	0.04	49.2 7	1.9 4
2 9 3	AC Individual	HOFFMAN	89	0.16	22	30	0.04	47.6 5	1.9 4
2 9 4	AC Gov	IC	74	0.13	36	25	0.03	39.5 3	1.9 4
2 9 5	AC Individual	ASSAD	150	0.26	60	51	0.07	79.6	1.9 3
2 9 6	Publisher	BBC'S	130	0.23	34	44	0.06	69.3 1	1.9 3
2 9 7	AC Individual	LINDSEY	100	0.18	27	34	0.05	53.0 7	1.9 3
2 9 8	AC group	REBELS	71	0.12	34	24	0.03	37.9	1.9 3
2 9 9	Story	ARSONIST	56	0.10	7	19	0.03	29.7 8	1.9 3

300	OP implementation	AGENT	564	0.99	83	192	0.26	298.91	1.92
301	News practices	UNCOVERED	152	0.27	46	52	0.07	80.15	1.92
302	AC Country	BAHRAIN	79	0.14	20	27	0.04	41.7	1.92
303	AC Country	SYRIA	1104	1.94	109	379	0.51	580.07	1.91
304	AC Country	CZECH	334	0.59	58	115	0.16	174.96	1.91
305	OP characteristics	POPULISM	212	0.37	34	73	0.10	111.04	1.91
306	Infrequent	BIBLE	166	0.29	29	57	0.08	87.2	1.91
307	OP characteristics	MALIGN	150	0.26	42	52	0.07	78.02	1.9
308	PCA	FUSION	84	0.15	31	29	0.04	43.88	1.9
309	Infrequent	SIGNS	459	0.81	65	160	0.22	237.36	1.89
310	AC Country	EMBASSY	92	0.16	37	32	0.04	47.68	1.89
311	Publisher	TASS	86	0.15	33	30	0.04	44.44	1.89
312	AC Country	BERLIN	83	0.15	32	29	0.04	42.82	1.89
313	Story	AWAKENING	63	0.11	11	22	0.03	32.52	1.89
314	Infrequent	WALKED	137	0.24	26	48	0.07	70.47	1.88
315	News practices	SNOW	100	0.18	17	35	0.05	51.49	1.88
316	User or Hashtag	CYBERATTACK	60	0.11	27	21	0.03	30.9	1.88

3 1 7	Infrequent	ING	176	0.31	37	62	0.08	90.0 1	1.8 7
3 1 8	OP effects	RADICALIZATI ON	164	0.29	35	58	0.08	83.5 2	1.8 7
3 1 9	News practices	MASKED	102	0.18	44	36	0.05	52.0 6	1.8 7
3 2 0	AC Country	PRC	65	0.11	25	23	0.03	33.0 8	1.8 7
3 2 1	AC Individual	HRC	245	0.43	60	87	0.12	124. 23	1.8 6
3 2 2	AC Country	IRAN'S	275	0.48	33	98	0.13	139. 31	1.8 6
3 2 3	AC Country	BRUSSELS	128	0.22	44	46	0.06	64.0 7	1.8 5
3 2 4	AC Country	SALISBURY	64	0.11	20	23	0.03	32.0 3	1.8 5
3 2 5	User or Hashtag	THOMAS1774 PAINE	64	0.11	15	23	0.03	32.0 3	1.8 5
3 2 6	User or Hashtag	HOUSEDEMO CRATS	162	0.28	36	59	0.08	79.9 1	1.8 3
3 2 7	News practices	ALLEGATION	138	0.24	36	50	0.07	68.4 6	1.8 3
3 2 8	Medical	CPHO	102	0.18	19	37	0.05	50.5 4	1.8 3
3 2 9	AC Country	XINJIANG	99	0.17	19	36	0.05	48.9 2	1.8 3
3 3 0	PCA	OLIGARCH	66	0.12	31	24	0.03	32.6 1	1.8 3
3 3 1	AC Individual	RUDY	791	1.39	38	290	0.39	387. 33	1.8 2
3 3 2	Synonym	PROPAGANDI ST	493	0.86	62	180	0.24	242. 52	1.8 2
3 3 3	AC Individual	MANAFORT	120	0.21	43	44	0.06	58.7 5	1.8 2

334	User or Hashtag	WW2	60	0.11	29	22	0.03	29.38	1.82
335	OP implementation	CAMPAIGNS	4781	8.39	103	1757	2.39	2334.93	1.81
336	AC Individual	GIULIANI	1053	1.85	43	389	0.53	511.27	1.81
337	Infrequent	SPECIALIST	233	0.41	49	86	0.12	113.24	1.81
338	News practices	ASSET	228	0.40	52	84	0.11	111.04	1.81
339	Infrequent	EMPIRE	478	0.84	56	177	0.24	231.47	1.8
340	Story	ARSON	361	0.63	25	134	0.18	174.34	1.8
341	OP implementation	PLANTED	154	0.27	66	57	0.08	74.61	1.8
342	PCA	LAUNDERING	124	0.22	46	46	0.06	59.92	1.8
343	AC Individual	CHRISTOPHER	113	0.20	39	42	0.06	54.49	1.8
344	OP effects	SUBVERT	86	0.15	37	32	0.04	41.42	1.8
345	PCA	PRESSURED	62	0.11	13	23	0.03	29.96	1.8
346	AC Country	RUSSIANS	1453	2.55	78	544	0.74	694.89	1.79
347	OP response	COUNTERING	1058	1.86	76	396	0.54	506.15	1.79
348	News practices	REVELATIONS	102	0.18	35	38	0.05	49.06	1.79
349	OP implementation	CONDUIT	167	0.29	39	63	0.09	79.18	1.78
350	OP implementation	POSED	152	0.27	44	57	0.08	72.56	1.78

3 5 1	Infrequent	SUBSTITUTE	80	0.14	12	30	0.04	38.1 9	1.7 8
3 5 2	Infrequent	DESCRIBED	467	0.82	56	177	0.24	220. 22	1.7 7
3 5 3	AC Country	ESTONIA	285	0.50	38	108	0.15	134. 43	1.7 7
3 5 4	OP effects	SEMITISM	100	0.18	39	38	0.05	47.0 2	1.7 7
3 5 5	AC Country	HK	100	0.18	29	38	0.05	47.0 2	1.7 7
3 5 6	PCA	RIOTING	66	0.12	22	25	0.03	31.1 5	1.7 7
3 5 7	OP implementa tion	INTELLIGENC E	192 3	3.37	91	732	0.99	902. 31	1.7 6
3 5 8	Infrequent	INDEED	862	1.51	56	331	0.45	400. 37	1.7 5
3 5 9	AC Gov	DOJ	394	0.69	57	151	0.21	183. 42	1.7 5
3 6 0	AC Country	MACEDONIA	135	0.24	23	52	0.07	62.4 8	1.7 5
3 6 1	Publisher	ATLANTIC	214	0.38	44	83	0.11	98.2 3	1.7 4
3 6 2	OP implementa tion	WAGED	176	0.31	57	68	0.09	81.1 6	1.7 4
3 6 3	Story	DEMONIZATIO N	70	0.12	23	27	0.04	32.3 4	1.7 4
3 6 4	User or Hashtag	PIZZAGATE	67	0.12	36	26	0.04	30.7 4	1.7 4
3 6 5	AC Country	FOREIGN	292 8	5.14	91	1140	1.55	133 7.91	1.7 3
3 6 6	OP implementa tion	ORCHESTRAT ED	180	0.32	52	70	0.10	82.3 6	1.7 3
3 6 7	Infrequent	FLIES	108	0.19	27	42	0.06	49.4 2	1.7 3

3 6 8	Story	REPORTAGE	85	0.15	23	33	0.04	38.9 7	1.7 3
3 6 9	Tech	CYBER	935	1.64	71	367	0.50	423. 11	1.7 2
3 7 0	Infrequent	DISCOVERY	140	0.25	30	55	0.07	63.2 9	1.7 2
3 7 1	User or Hashtag	PRESSFREED OM	107	0.19	45	42	0.06	48.4 2	1.7 2
3 7 2	Story	INCOMING	79	0.14	25	31	0.04	35.7 6	1.7 2
3 7 3	Publisher	MILLENNIAL	74	0.13	23	29	0.04	33.5 5	1.7 2
3 7 4	AC Individual	OBAMA'S	192	0.34	67	76	0.10	86.0 1	1.7 1
3 7 5	User or Hashtag	MZHEMINGW AY	188	0.33	38	74	0.10	84.7 9	1.7 1
3 7 6	Tech	FILES	305	0.54	49	121	0.16	136. 25	1.7
3 7 7	OP implementa tion	PARTICIPATIN G	183	0.32	39	73	0.10	81.2	1.7
3 7 8	AC Individual	KREBS	93	0.16	14	37	0.05	41.4	1.7
3 7 9	Synonym	PROPAGANDI STS	387	0.68	70	155	0.21	170. 88	1.6 9
3 8 0	AC Country	LITHUANIA	267	0.47	36	107	0.15	117. 81	1.6 9
3 8 1	AC Individual	COLIN	149	0.26	18	60	0.08	65.3 5	1.6 8
3 8 2	OP implementa tion	DEPLOYED	104	0.18	42	42	0.06	45.4 5	1.6 8
3 8 3	OP characterist ics	ILLEGITIMATE	77	0.14	36	31	0.04	33.7 8	1.6 8
3 8 4	OP effects	DEMOCRACIE S	281	0.49	51	114	0.15	122. 11	1.6 7

3 8 5	Publisher	PRAVDA	148	0.26	55	60	0.08	64.3 7	1.6 7
3 8 6	User or Hashtag	SULLIVIEW	96	0.17	27	39	0.05	41.6 5	1.6 7
3 8 7	AC Country	UN	226 2	3.97	10 1	925	1.26	973. 23	1.6 6
3 8 8	Tech	HACKING	503	0.88	79	206	0.28	216. 01	1.6 6
3 8 9	AC Country	SLOVAKIA	254	0.45	32	104	0.14	109. 11	1.6 6
3 9 0	Story	SIZE	238	0.42	33	97	0.13	102. 83	1.6 6
3 9 1	Infrequent	DISAPPEAR	174	0.31	32	71	0.10	75.0 7	1.6 6
3 9 2	Infrequent	ISSUING	103	0.18	23	42	0.06	44.4 8	1.6 6
3 9 3	News practices	COLLUSION	502	0.88	64	206	0.28	215. 04	1.6 5
3 9 4	OP implementa tion	MEDDLING	341	0.60	55	140	0.19	145. 98	1.6 5
3 9 5	Publisher	WIKILEAKS	320	0.56	81	132	0.18	136. 17	1.6 5
3 9 6	OP implementa tion	ACTIVITIES	221	0.39	58	91	0.12	94.2 6	1.6 5
3 9 7	Publisher	GEO	112	0.20	51	46	0.06	47.9 2	1.6 5
3 9 8	Infrequent	BOMBSHELL	78	0.14	28	32	0.04	33.4 2	1.6 5
3 9 9	AC Country	SYRIAN	263	0.46	73	109	0.15	111. 24	1.6 4
4 0 0	AC Individual	BARTIROMO	104	0.18	17	43	0.06	44.1 2	1.6 4
4 0 1	AC Gov	CISA	77	0.14	11	32	0.04	32.4 6	1.6 4

402	OP implementation	FED	3283	5.76	91	1371	1.86	1375.14	1.63
403	OP effects	EMBRACED	79	0.14	34	33	0.04	33.08	1.63
404	Infrequent	BRIEFED	72	0.13	25	30	0.04	30.25	1.63
405	AC Individual	MUELLER	798	1.40	55	336	0.46	330.7	1.62
406	AC Country	ISRAELI	345	0.61	78	145	0.20	143.31	1.62
407	AC Country	HAMAS	147	0.26	28	62	0.08	60.78	1.62
408	OP effects	DISRUPTION	107	0.19	41	45	0.06	44.41	1.62
409	User or Hashtag	ERICGARLAND	95	0.17	46	40	0.05	39.37	1.62
410	OP response	RESILIENCE	93	0.16	36	39	0.05	38.74	1.62
411	AC Individual	TULSI	83	0.15	21	35	0.05	34.33	1.62
412	publisher	NTD	83	0.15	20	35	0.05	34.33	1.62
413	AC group	DOZEN	285	0.50	36	121	0.16	116.83	1.61
414	AC Country	HUNGARY	274	0.48	40	116	0.16	112.74	1.61
415	AC Country	HONGKONG	99	0.17	21	42	0.06	40.62	1.61
416	OP effects	INTERFERED	85	0.15	31	36	0.05	34.96	1.61
417	OP implementation	COORDINATION	78	0.14	37	33	0.04	32.12	1.61
418	AC Individual	KUSHNER	73	0.13	27	31	0.04	29.92	1.61

4 1 9	OP implemen- ta- tion	PLAYBOOK	433	0.76	64	184	0.25	177. 29	1.6
4 2 0	AC Country	BULGARIA	242	0.42	33	103	0.14	98.8 7	1.6
4 2 1	AC group	OLIGARCHS	103	0.18	43	44	0.06	41.8 8	1.6
4 2 2	AC group	NAZI	708	1.24	66	304	0.41	285. 9	1.5 9
4 2 3	AC Individual	JAMES	672	1.18	72	289	0.39	270. 79	1.5 9
4 2 4	AC group	HACKERS	270	0.47	60	116	0.16	108. 95	1.5 9
4 2 5	AC Gov	STATEDEPT	119	0.21	46	51	0.07	48.1 8	1.5 9
4 2 6	Infrequent	GLOBALIST	79	0.14	42	34	0.05	31.8	1.5 9
4 2 7	AC Country	LUXEMBOURG	234	0.41	26	101	0.14	93.8 3	1.5 8
4 2 8	Story	MOMENTUM	81	0.14	26	35	0.05	32.4 3	1.5 8
4 2 9	AC Country	BELGIUM	262	0.46	36	114	0.15	103. 92	1.5 7
4 3 0	Publisher	TANKS	140	0.25	47	61	0.08	55.4 3	1.5 7
4 3 1	AC Individual	FRANCIS	124	0.22	28	54	0.07	49.1 3	1.5 7
4 3 2	News practices	OBTAINED	124	0.22	35	54	0.07	49.1 3	1.5 7
4 3 3	User or Hashtag	TCOT	466	0.82	91	204	0.28	183. 31	1.5 6
4 3 4	AC Individual	ROGER	315	0.55	57	138	0.19	123. 78	1.5 6
4 3 5	PCA	IMPEACHED	233	0.41	47	102	0.14	91.6 6	1.5 6

4 3 6	OP effects	DISCREDITIN G	96	0.17	40	42	0.06	37.8	1.5 6
4 3 7	OP implementa tion	TARGETING	963	1.69	73	425	0.58	374. 61	1.5 5
4 3 8	AC Country	ROMANIA	253	0.44	36	112	0.15	98	1.5 5
4 3 9	OP response	SANCTIONS	236	0.41	50	104	0.14	91.9 9	1.5 5
4 4 0	AC Individual	TRUMPISM	179	0.31	39	79	0.11	69.6 3	1.5 5
4 4 1	PCA	ASSASSINATIO N	95	0.17	49	42	0.06	36.8 7	1.5 5
4 4 2	AC Country	EUROPE	869	1.52	89	386	0.52	335. 02	1.5 4
4 4 3	Warfare and defence	CYBERSECURI TY	679	1.19	64	302	0.41	261. 29	1.5 4
4 4 4	News practices	COLLUDING	106	0.19	39	47	0.06	40.9 7	1.5 4
4 4 5	Tech	EMAILS	604	1.06	61	270	0.37	230. 79	1.5 3
4 4 6	OP response	SANCTION	78	0.14	29	35	0.05	29.6 5	1.5 3
4 4 7	News practices	EXPOSE	680	1.19	78	306	0.42	257. 41	1.5 2
4 4 8	OP effects	DISTRACT	326	0.57	65	147	0.20	123. 05	1.5 2
4 4 9	AC Country	SAUDI	313	0.55	63	141	0.19	118. 3	1.5 2
4 5 0	AC Country	SLOVENIA	231	0.41	28	104	0.14	87.3 8	1.5 2
4 5 1	User or Hashtag	AMNESTY	160	0.28	31	72	0.10	60.5 7	1.5 2
4 5 2	OP implementa tion	EXTENSIVE	104	0.18	48	47	0.06	39.1 3	1.5 2

4 5 3	AC Country	CUBA	82	0.14	39	37	0.05	30.9 2	1.5 2
4 5 4	OP implementa tion	CAMPAIGN	177 49	31.14	12 0	8090	10.99	662 0.02	1.5 1
4 5 5	AC group	HARVARD	391	0.69	44	177	0.24	146. 76	1.5 1
4 5 6	PCA	BUSHFIRES	261	0.46	15	118	0.16	98.1 4	1.5 1
4 5 7	OP implementa tion	FARMS	222	0.39	42	101	0.14	82.7 3	1.5 1
4 5 8	AC group	NATIONALISTS	143	0.25	32	65	0.09	53.3 6	1.5 1
4 5 9	Infrequent	FUNDAMENTA LLY	108	0.19	25	49	0.07	40.4 1	1.5 1
4 6 0	AC Country	CHINA	402 3	7.06	88	1839	2.50	148 8.97	1.5
4 6 1	AC country	COMMISSION	723	1.27	65	331	0.45	267. 01	1.5
4 6 2	AC Country	MALTA	262	0.46	35	120	0.16	96.7	1.5
4 6 3	OP effects	LEGITIMACY	188	0.33	47	86	0.12	69.5 1	1.5
4 6 4	User or Hashtag	BPOLITICS	79	0.14	28	36	0.05	29.3 7	1.5
4 6 5	AC Country	WESTERN	882	1.55	10 1	407	0.55	321. 99	1.4 9
4 6 6	User or Hashtag	HRW	126	0.22	36	58	0.08	46.1 6	1.4 9
4 6 7	User or Hashtag	MKRAJU	89	0.16	27	41	0.06	32.5 7	1.4 9
4 6 8	OP effects	ACTIVE	717	1.26	74	332	0.45	260. 44	1.4 8
4 6 9	AC group	ELECTORATE	337	0.59	49	156	0.21	122. 46	1.4 8

4 7 0	OP effects	LATINOS	317	0.56	24	147	0.20	114. 89	1.4 8
4 7 1	AC Country	FINLAND	282	0.49	45	131	0.18	101. 94	1.4 8
4 7 2	User or Hashtag	SECPOMPEO	108	0.19	26	50	0.07	39.2 4	1.4 8
4 7 3	AC Country	EC	99	0.17	36	46	0.06	35.7 8	1.4 8
4 7 4	User or Hashtag	UNGA	97	0.17	18	45	0.06	35.1 4	1.4 8
4 7 5	Story	UNARMED	84	0.15	13	39	0.05	30.3 9	1.4 8
4 7 6	OP effects	INTERFERENC E	966	1.69	57	449	0.61	348. 92	1.4 7
4 7 7	AC group	DOMINION	404	0.71	15	188	0.26	145. 67	1.4 7
4 7 8	AC Country	NETHERLAND S	261	0.46	36	122	0.17	93.4 9	1.4 7
4 7 9	OP characterist ics	HOSTILE	208	0.36	54	97	0.13	74.7 6	1.4 7
4 8 0	OP characterist ics	ORWELLIAN	122	0.21	54	57	0.08	43.7 3	1.4 7
4 8 1	AC Individual	SHEPARD	92	0.16	24	43	0.06	32.9 6	1.4 7
4 8 2	Infrequent	LINKED	118 1	2.07	64	555	0.75	419. 65	1.4 6
4 8 3	AC Country	POLAND	346	0.61	51	162	0.22	123. 63	1.4 6
4 8 4	AC Individual	MARIA	234	0.41	46	110	0.15	83.1 1	1.4 6
4 8 5	OP implementa tion	COMPROMISE D	204	0.36	51	96	0.13	72.3 4	1.4 6
4 8 6	AC Country	AZERBAIJAN	196	0.34	64	92	0.12	69.7 7	1.4 6

4 8 7	OP effects	SWING	177	0.31	51	83	0.11	63.1	1.4 6
4 8 8 8	OP implementa tion	CONCERTED	155	0.27	49	73	0.10	54.9	1.4 6
4 8 9	Story	OBSSESSION	111	0.19	71	52	0.07	39.6 3	1.4 6
4 9 0	AC Gov	REGIME	517	0.91	76	244	0.33	182. 53	1.4 5
4 9 1	AC Entity	PATRIOT	231	0.41	55	109	0.15	81.5 8	1.4 5
4 9 2	AC Country	CROATIA	232	0.41	27	110	0.15	81.3 4	1.4 5
4 9 3	OP effects	RADICALIZED	165	0.29	31	78	0.11	58.1 1	1.4 5
4 9 4	AC Country	PHILIPPINES	231	0.41	48	110	0.15	80.4 6	1.4 4
4 9 5	User or Hashtag	SENRONJOHN SON	223	0.39	23	106	0.14	77.8 8	1.4 4
4 9 6	OP characterist ics	FASCISTS	176	0.31	47	84	0.11	61.0 9	1.4 4
4 9 7	Infrequent	ALIGNED	120	0.21	46	57	0.08	41.9 6	1.4 4
4 9 8	Infrequent	SHILLS	90	0.16	53	43	0.06	31.1 9	1.4 4
4 9 9	AC Individual	CARTER	88	0.15	41	42	0.06	30.5 4	1.4 4
5 0 0	Infrequent	TIES	355	0.62	62	170	0.23	122. 59	1.4 3
5 0 1	AC Individual	ROY	125	0.22	31	60	0.08	43.0 1	1.4 3
5 0 2	User or Hashtag	CAROLECAD WALLA	113	0.20	40	54	0.07	39.1 5	1.4 3
5 0 3	Publisher	WAPO	382	0.67	69	184	0.25	130. 73	1.4 2

5 0 4	AC group	ANALYTICA	199	0.35	48	96	0.13	67.9 4	1.4 2
5 0 5	AC Individual	ASSANGE	184	0.32	59	89	0.12	62.5 6	1.4 2
5 0 6	News practices	ASSESSMENT	144	0.25	43	70	0.10	48.5 8	1.4 1
5 0 7	Infrequent	EP	117	0.21	41	57	0.08	39.3 4	1.4 1
5 0 8	AC Gov	MFA	99	0.17	43	48	0.07	33.5 4	1.4 1
5 0 9	AC Gov	CCP	429	0.75	36	210	0.29	143. 15	1.4
5 1 0	Publisher	TANK	188	0.33	57	92	0.12	62.7 6	1.4
5 1 1	Infrequent	AUTHORS	165	0.29	38	81	0.11	54.8 1	1.4
5 1 2	OP response	REBUTTAL	135	0.24	28	66	0.09	45.1 4	1.4
5 1 3	OP effects	SOCIETIES	110	0.19	44	54	0.07	36.5 4	1.4
5 1 4	OP effects	DESTABILIZE	90	0.16	34	44	0.06	30.0 9	1.4
5 1 5	AC Country	SPAIN	321	0.56	54	158	0.21	106. 18	1.3 9
5 1 6	tech	DOCUMENT	276	0.48	43	136	0.18	91.1 3	1.3 9
5 1 7	AC Individual	SOROS	237	0.42	52	117	0.16	78.0 2	1.3 9
5 1 8	AC Country	CYPRUS	237	0.42	32	117	0.16	78.0 2	1.3 9
5 1 9	OP characteristics	SOPHISTICATED	217	0.38	57	107	0.15	71.5 8	1.3 9
5 2 0	User or Hashtag	B52MALMET	93	0.16	31	46	0.06	30.5 2	1.3 9

5 2 1	OP response	PROBE	341	0.60	64	169	0.23	111.56	1.38
5 2 2	AC Country	PORTUGAL	238	0.42	29	118	0.16	77.81	1.38
5 2 3	AC Country	AUSTRIA	235	0.41	30	117	0.16	76.32	1.38
5 2 4	User or Hashtag	NOMORE	232	0.41	2	115	0.16	75.88	1.38
5 2 5	AC Individual	COMEY	190	0.33	39	94	0.13	62.34	1.38
5 2 6	AC Individual	PIRRO	111	0.19	25	55	0.07	36.33	1.38
5 2 7	OP effects	EXTREMISM	370	0.65	54	185	0.25	119.33	1.37
5 2 8	AC Country	SWEDEN	364	0.64	54	182	0.25	117.39	1.37
5 2 9	PCA	PLOT	252	0.44	53	126	0.17	81.27	1.37
5 3 0	AC Individual	GLENN	204	0.36	52	102	0.14	65.79	1.37
5 3 1	Infrequent	UNDERWAY	150	0.26	38	75	0.10	48.38	1.37
5 3 2	PCA	COUP	450	0.79	67	227	0.31	143.04	1.36
5 3 3	OP implementation	HACKED	250	0.44	62	127	0.17	78.55	1.35
5 3 4	AC group	NEO	168	0.29	57	85	0.12	53.14	1.35
5 3 5	OP implementation	ADVANCES	95	0.17	23	48	0.07	30.12	1.35
5 3 6	OP implementation	DISCREDIT	534	0.94	71	272	0.37	167.03	1.34
5 3 7	News practices	TREASON	294	0.52	55	150	0.20	91.71	1.34

538	AC Individual	REAGAN	219	0.38	53	112	0.15	68.04	1.34
539	OP implementation	TECHNIQUES	209	0.37	56	107	0.15	64.82	1.34
540	AC Individual	STONE	323	0.57	57	166	0.23	99.53	1.33
541	OP implementation	AIDED	192	0.34	50	99	0.13	58.83	1.33
542	OP effects	DISRUPT	140	0.25	48	72	0.10	43.09	1.33
543	OP effects	AUTHORITARIANISM	113	0.20	41	58	0.08	34.89	1.33
544	User or Hashtag	SARACARTER DC	107	0.19	37	55	0.07	32.96	1.33
545	OP implementation	UNIT	262	0.46	60	136	0.18	79.37	1.32
546	AC Individual	CHARLES	203	0.36	46	105	0.14	61.87	1.32
547	News practices	IMPUNITY	120	0.21	37	62	0.08	36.64	1.32
548	News practices	FRAME	116	0.20	48	60	0.08	35.36	1.32
549	PCA	INDICTED	110	0.19	36	57	0.08	33.42	1.32
550	OP implementation	INFILTRATED	110	0.19	47	57	0.08	33.42	1.32
551	OP implementation	ATTEMPTING	331	0.58	51	173	0.23	99.09	1.31
552	Story	QUESTIONABLE	306	0.54	47	159	0.22	92.54	1.31
553	Infrequent	SUMMIT	222	0.39	41	116	0.16	66.49	1.31
554	OP effects	CORRUPTED	117	0.21	40	61	0.08	35.18	1.31

555	OP characteristics	STYLE	672	1.18	82	352	0.48	200.41	1.3
556	OP implementation	SMEAR	519	0.91	72	273	0.37	153.66	1.3
557	AC Individual	BIDEN'S	776	1.36	29	409	0.56	229.88	1.3
558	AC Country	CHINESE	1772	3.11	78	939	1.28	517.86	1.29
559	AC Individual	GGREENWALD	415	0.73	58	219	0.30	122.17	1.29
560	OP characteristics	AUTHORITARIAN	369	0.65	56	195	0.26	108.36	1.29
561	AC Country	IRAQ	357	0.63	81	188	0.26	105.48	1.29
562	User or Hashtag	RADIOFREETO M	222	0.39	47	117	0.16	65.5	1.29
563	Tech	ALTERED	220	0.39	45	116	0.16	64.86	1.29
564	Infrequent	PACKAGE	168	0.29	38	89	0.12	49.12	1.29
565	Warfare and defence	ADVERSARIES	166	0.29	41	88	0.12	48.48	1.29
566	AC Individual	GOEBBELS	131	0.23	53	69	0.09	38.69	1.29
567	AC Individual	OBAMA	2346	4.12	117	1246	1.69	682.86	1.28
568	Infrequent	2016	2064	3.62	77	1095	1.49	601.97	1.28
569	OP Effects	FASCIST	645	1.13	70	343	0.47	187.33	1.28
570	AC Individual	LOU	223	0.39	37	119	0.16	64.37	1.28
571	PCA	ARMS	186	0.33	53	99	0.13	53.93	1.28

5 7 2	OP implementa tion	CREATION	128	0.22	50	68	0.09	37.2 4	1.2 8
5 7 3	OP implementa tion	TARGETED	111 6	1.96	68	596	0.81	321. 67	1.2 7
5 7 4	Infrequent	CODE	521	0.91	54	280	0.38	148. 48	1.2 7
5 7 5	AC group	ANONYMOUS	389	0.68	72	209	0.28	110. 92	1.2 7
5 7 6	Infrequent	ALLY	134	0.24	40	72	0.10	38.2	1.2 7
5 7 7	OP effects	IMPARTIALITY	116	0.20	33	62	0.08	33.3 9	1.2 7
5 7 8	AC Individual	LE	110	0.19	35	59	0.08	31.4 6	1.2 7
5 7 9	AC Individual	TROLL	950	1.67	74	514	0.70	267. 47	1.2 6
5 8 0	AC Country	GERMANY	595	1.04	72	320	0.43	169. 35	1.2 6
5 8 1	AC Individual	CHUCK	331	0.58	41	178	0.24	94.2 3	1.2 6
5 8 2	User or Hashtag	CHUCKTODD	235	0.41	48	127	0.17	66.3	1.2 6
5 8 3	User or Hashtag	THEDEMOCRA TS	193	0.34	48	104	0.14	54.7 4	1.2 6
5 8 4	OP implementa tion	SUSPECTED	148	0.26	49	80	0.11	41.7 4	1.2 6
5 8 5	Infrequent	COOPERATIO N	128	0.22	45	69	0.09	36.2 8	1.2 6
5 8 6	AC Individual	GAETZ	106	0.19	20	57	0.08	30.1 8	1.2 6
5 8 7	OP implementa tion	INFLUENCE	148 5	2.61	78	804	1.09	417. 59	1.2 5
5 8 8	PCA	IMPEACHMEN T	531	0.93	44	288	0.39	148. 84	1.2 5

589	OP implementation	ARM	468	0.82	66	254	0.34	131.02	1.25
590	AC Individual	JOSEPH	155	0.27	36	84	0.11	43.51	1.25
591	OP implementation	ORIGINATED	129	0.23	37	70	0.10	36.13	1.25
592	AC Individual	HILLARY	698	1.22	70	383	0.52	191.51	1.24
593	News practices	INVESTIGATING	381	0.67	59	208	0.28	105.52	1.24
594	Infrequent	WEAPONS	291	0.51	77	159	0.22	80.47	1.24
595	AC Country	KINGDOM	268	0.47	38	147	0.20	73.58	1.24
596	AC Country	ALABAMA	237	0.42	32	130	0.18	65.07	1.24
597	AC Gov	HOMELAND	141	0.25	39	77	0.10	39.03	1.24
598	OP implementation	TACTICS	1205	2.11	96	663	0.90	328.94	1.23
599	Infrequent	MASSIVE	1324	2.32	90	736	1.00	354.51	1.22
600	AC Country	GREECE	287	0.50	46	159	0.22	77.34	1.22
601	Story	WITHHELD	273	0.48	36	151	0.21	73.79	1.22
602	PCA	MATERIALS	148	0.26	24	82	0.11	39.88	1.22
603	User or Hashtag	MAGA	1084	1.90	63	604	0.82	288.96	1.21
604	Infrequent	INTERNAL	415	0.73	49	232	0.32	109.93	1.21
605	OP implementation	STRATEGIC	221	0.39	58	123	0.17	59.04	1.21

606	Warfare and defence	BASES	190	0.33	37	106	0.14	50.53	1.21
607	Synonym	SABOTAGE	145	0.25	50	81	0.11	38.46	1.21
608	Emotion and Affect	INSIDIOUS	143	0.25	49	80	0.11	37.83	1.21
609	OP implementation	INDUSTRIAL	113	0.20	42	63	0.09	30.09	1.21
610	AC Individual	SON	435	0.76	47	245	0.33	113.59	1.2
611	OP effects	DESTROYED	312	0.55	53	175	0.24	82.12	1.2
612	PCA	GERRYMANDERING	155	0.27	52	87	0.12	40.74	1.2
613	Publisher	ZEROHEDGE	117	0.21	52	66	0.09	30.46	1.2
614	Warfare and defence	SECURITY	1863	3.27	87	1052	1.43	484.06	1.19
615	OP Effects	COMMUNIST	590	1.04	73	335	0.45	151.67	1.19
616	AC group	MURDOCHS	164	0.29	33	93	0.13	42.26	1.19
617	News practices	MANIPULATIVE	170	0.30	32	97	0.13	43.28	1.18
618	Story	EPIC	139	0.24	35	79	0.11	35.66	1.18
619	OP implementation	AUTOMATED	130	0.23	32	74	0.10	33.25	1.18
620	OP implementation	DOMESTIC	747	1.31	66	429	0.58	187.76	1.17
621	OP implementation	TACTIC	394	0.69	69	227	0.31	98.4	1.17
622	OP response	REGULATE	336	0.59	50	193	0.26	84.42	1.17

6 2 3	AC Country	DENMARK	252	0.44	35	145	0.20	63.1	1.1 7
6 2 4	User or Hashtag	BILLKRISTOL	131	0.23	43	75	0.10	33.1 3	1.1 7
6 2 5	User or Hashtag	DEVINNUNES	122	0.21	33	70	0.10	30.7 2	1.1 7
6 2 6	Infrequent	GUESTS	312	0.55	41	180	0.24	77.7 1	1.1 6
6 2 7	Publisher	AFP	278	0.49	52	161	0.22	68.7 1	1.1 6
6 2 8	AC Individual	SETH	192	0.34	50	111	0.15	47.6 2	1.1 6
6 2 9	User or Hashtag	MEETTHEPRES S	161	0.28	45	93	0.13	40	1.1 6
6 3 0	OP implementa tion	DEFLECT	156	0.27	45	91	0.12	38	1.1 5
6 3 1	AC Gov	SENATE	126 9	2.23	72	743	1.01	306. 77	1.1 4
6 3 2	Emotion and Affect	TRAITOR	265	0.46	51	155	0.21	64.2	1.1 4
6 3 3	Infrequent	SEDITION	179	0.31	34	105	0.14	43.1 1	1.1 4
6 3 4	AC Individual	NIXON	157	0.28	51	92	0.12	37.8 9	1.1 4
6 3 5	Infrequent	SOURCED	148	0.26	47	87	0.12	35.4 9	1.1 4
6 3 6	Warfare and defence	MILITARY	132 5	2.32	92	784	1.06	313. 42	1.1 3
6 3 7	OP implementa tion	STRATEGY	856	1.50	88	506	0.69	202. 89	1.1 3
6 3 8	AC Individual	CLINTON	795	1.39	80	468	0.64	190. 06	1.1 3
6 3 9	Infrequent	EARLIER	756	1.33	54	447	0.61	179. 1	1.1 3

640	OP characteristics	EXTREMIST	418	0.73	51	246	0.33	99.99	1.13
641	OP implementation	SUCCESSFUL	381	0.67	58	225	0.31	90.49	1.13
642	Infrequent	MEMO	267	0.47	43	158	0.21	63.14	1.13
643	Infrequent	AMBASSADOR	218	0.38	57	129	0.18	51.56	1.13
644	User or Hashtag	TRUMPRUSSIA	158	0.28	42	93	0.13	37.78	1.13
645	Infrequent	DEMOCRACY	4120	7.23	90	2451	3.33	963.6	1.12
646	OP effects	UNDERMINE	764	1.34	68	453	0.62	179.93	1.12
647	AC Individual	TODD	309	0.54	34	184	0.25	72.13	1.12
648	PCA	HEARINGS	256	0.45	41	152	0.21	60.12	1.12
649	PCA	DEBT	220	0.39	38	131	0.18	51.35	1.12
650	AC group	DEMS	1183	2.08	73	706	0.96	274.85	1.11
651	Infrequent	INSTITUTIONS	396	0.69	57	237	0.32	91.45	1.11
652	OP implementation	ORGANIZED	330	0.58	65	198	0.27	75.8	1.11
653	AC Individual	MCCONNELL	159	0.28	41	95	0.13	36.85	1.11
654	OP response	INFOSEC	160	0.28	49	96	0.13	36.75	1.11
655	News practices	STOLEN	243	0.43	45	146	0.20	55.65	1.1
656	Publisher	DAWN	199	0.35	59	120	0.16	45.22	1.1

6 5 7	News practices	SECRET	423	0.74	80	257	0.35	94.5 8	1.0 9
6 5 8	User or Hashtag	THERICKWILSON	223	0.39	48	135	0.18	50.2 5	1.0 9
6 5 9	OP implementation	EXPLOIT	184	0.32	45	112	0.15	40.9 8	1.0 9
6 6 0	Infrequent	INCL	132	0.23	39	80	0.11	29.6 7	1.0 9
6 6 1	AC Country	SPANISH	448	0.79	42	274	0.37	98.7 3	1.0 8
6 6 2	User or Hashtag	MARKLEVINSHOW	169	0.30	34	103	0.14	37.5 3	1.0 8
6 6 3	AC Individual	AILES	162	0.28	58	99	0.13	35.7 7	1.0 8
6 6 4	News practices	SWAMP	152	0.27	49	93	0.13	33.4 7	1.0 8
6 6 5	OP implementation	AIMED	566	0.99	64	349	0.47	122. 51	1.0 7
6 6 6	AC group	DEPT	236	0.41	63	145	0.20	51.4 9	1.0 7
6 6 7	AC Individual	JOEBIDEN	951	1.67	36	591	0.80	202. 27	1.0 6
6 6 8	AC Individual	MURDOCH'S	475	0.83	55	295	0.40	101. 17	1.0 6
6 6 9	OP implementation	DONORS	142	0.25	37	88	0.12	30.3 9	1.0 6
6 7 0	OP effects	POSE	139	0.24	39	86	0.12	29.8 6	1.0 6
6 7 1	Infrequent	POWERFUL	748	1.31	76	467	0.63	157. 43	1.0 5
6 7 2	AC group	DNC	625	1.10	66	389	0.53	132. 47	1.0 5
6 7 3	OP implementation	ECOSYSTEM	376	0.66	51	235	0.32	78.9 5	1.0 5

6 7 4	PCA	DOLLAR	167	0.29	44	104	0.14	35.3 5	1.0 5
6 7 5	AC Gov	NSA	152	0.27	60	95	0.13	31.9 1	1.0 5
6 7 6	AC Individual	RUPERT	122 9	2.16	62	770	1.05	256. 61	1.0 4
6 7 7	Publisher	POLITICO	936	1.64	68	590	0.80	192. 73	1.0 4
6 7 8	Infrequent	ALLEGATIONS	386	0.68	67	243	0.33	79.7 2	1.0 4
6 7 9	AC group	CAMBRIDGE	287	0.50	53	180	0.24	59.7 8	1.0 4
6 8 0	AC group	DHS	275	0.48	41	173	0.23	56.8 8	1.0 4
6 8 1	OP implementa tion	ACTIVITY	259	0.45	54	163	0.22	53.5 2	1.0 4
6 8 2	Infrequent	GQP	256	0.45	12	161	0.22	52.9 9	1.0 4
6 8 3	OP effects	EXPRESSION	181	0.32	46	114	0.15	37.3 4	1.0 4
6 8 4	User or Hashtag	MARIANNASP RING	150	0.26	23	94	0.13	31.3	1.0 4
6 8 5	OP effects	MANIPULATED	570	1.00	60	360	0.49	116. 84	1.0 3
6 8 6	AC Individual	BANNON	405	0.71	56	256	0.35	82.8 6	1.0 3
6 8 7	OP implementa tion	TIED	347	0.61	49	220	0.30	70.5	1.0 3
6 8 8	OP response	PREPARE	176	0.31	49	111	0.15	36.1 9	1.0 3
6 8 9	AC group	DEM	566	0.99	64	360	0.49	114. 13	1.0 2
6 9 0	News practices	FABRICATED	344	0.60	60	219	0.30	69.2 1	1.0 2

6 9 1	AC Individual	HITLER	190	0.33	55	121	0.16	38.2	1.0 2
6 9 2	AC Individual	NUNES	157	0.28	34	100	0.14	31.5 5	1.0 2
6 9 3	OP implementa tion	TARGET	977	1.71	79	627	0.85	192. 88	1.0 1
6 9 4	Infrequent	BILLION	618	1.08	65	397	0.54	121. 72	1.0 1
6 9 5	Infrequent	ADMIN	425	0.75	67	272	0.37	84.4 5	1.0 1
6 9 6	Warfare and defence	WEAPON	383	0.67	70	245	0.33	76.2	1.0 1
6 9 7	AC Country	EN	196	0.34	55	126	0.17	38.5 4	1.0 1
6 9 8	Warfare and defence	WAR	289 4	5.08	11 8	1863	2.53	567. 14	1
6 9 9	Infrequent	2022	158	0.28	19	102	0.14	30.7 5	1

Appendix F: Misinformation keyword list

Table 117 Misinformation Corpus Keywords

N	Key word	Code	Freq. q.	Freq. per 10,000	Texts	RC. Freq.	RC Freq. per 10,000	Log_ L	Log_ R
1	1500	Infrequent	334	0.45	12	15	0.03	284.06	4.11
2	SOCIALMEDIA2DAY	User or Hashtag	411	0.56	39	22	0.04	333.74	3.85
3	COKE	Infrequent	173	0.23	34	11	0.02	133.29	3.61
4	PROMPTS	OP Response	157	0.21	34	11	0.02	117.01	3.47
5	STIGMA	OP Effects	407	0.55	87	29	0.05	301.50	3.44
6	AMITSHAH	User or Hashtag	147	0.20	40	11	0.02	106.94	3.37
7	FARMING	OP effects	217	0.29	38	17	0.03	155.11	3.30
8	NUTRITION	ME General	201	0.27	69	17	0.03	139.26	3.19
9	HIV	ME General	436	0.59	80	38	0.07	298.25	3.15
10	INFREQUENT ONCEPTIONS	Synonym	204	0.28	79	18	0.03	138.80	3.13
11	FOODS	Story	136	0.18	42	12	0.02	92.54	3.13
12	800	Infrequent	429	0.58	25	38	0.07	291.40	3.13
13	VAPE	ME General	109	0.15	34	10	0.02	72.89	3.08
14	GOVERNOR'S	AC Gov	103	0.14	17	10	0.02	67.09	3.00
15	CASUAL	Story	202	0.27	28	20	0.04	130.35	2.97
16	DPFUNKE	User or Hashtag	109	0.15	29	11	0.02	69.69	2.94
17	PREGNANCY	ME General	138	0.19	55	14	0.02	88.00	2.93
18	EBOLA	ME General	751	1.02	70	79	0.14	470.23	2.88
19	COWS	Infrequent	103	0.14	14	11	0.02	63.99	2.86
20	AAJTAK	Publisher	92	0.12	40	10	0.02	56.63	2.83
21	NRC	AC Entity	118	0.16	14	13	0.02	72.12	2.81
22	NESTLE	AC Entity	198	0.27	24	22	0.04	120.46	2.80

2 3	CAA	AC Entity	196	0.27	16	22	0.04	118. 60	2.7 9
2 4	PICARDONHEALTH	User or Hashtag	89	0.12	30	10	0.02	53.8 2	2.7 8
2 5	POYNTER	Publisher	518	0.70	62	59	0.10	310. 93	2.7 6
2 6	TPP	AC Entity	131	0.18	17	15	0.03	78.4 0	2.7 6
2 7	RAMBLINGS	Story	95	0.13	22	11	0.02	56.5 1	2.7 4
2 8	EXPEDIA	User or Hashtag	94	0.13	13	11	0.02	55.5 8	2.7 3
2 9	INFERTILITY	ME General	110	0.15	17	13	0.02	64.6 8	2.7 1
3 0	HUNTING	OP Response	227	0.31	36	27	0.05	132. 98	2.7 0
3 1	MEASLES	ME General	848	1.15	59	101	0.18	496. 39	2.7 0
3 2	EDTECH	User or Hashtag	83	0.11	40	10	0.02	48.2 6	2.6 8
3 3	FRANCES	AC Individual	91	0.12	19	11	0.02	52.8 1	2.6 8
3 4	MYTHS	Synonym	122 1	1.66	11 7	150	0.26	701. 95	2.6 6
3 5	ABORTIONS	ME General	81	0.11	39	10	0.02	46.4 3	2.6 5
3 6	CLIVE	AC Individual	80	0.11	18	10	0.02	45.5 2	2.6 3
3 7	THUMBS	Infrequent	80	0.11	14	10	0.02	45.5 2	2.6 3
3 8	MISUNDERSTANDING	Synonym	223	0.30	72	28	0.05	126. 54	2.6 2
3 9	BESTBUY	User or Hashtag	191	0.26	15	24	0.04	108. 33	2.6 2
4 0	DISPEL	OP Response	517	0.70	89	65	0.11	293. 14	2.6 2
4 1	LAS	AC Country	167	0.23	36	21	0.04	94.6 8	2.6 2
4 2	CORNELL	AC Entity	133	0.18	20	17	0.03	74.6 6	2.6 0
4 3	LIBERTYMUTUAL	User or Hashtag	233	0.32	27	30	0.05	130. 20	2.5 9
4 4	CANNABIS	ME General	315	0.43	84	41	0.07	174. 84	2.5 7
4 5	DM	OP Means	310	0.42	37	41	0.07	170. 34	2.5 5
4 6	ALTNEWS	User or Hashtag	149	0.20	38	20	0.04	81.1 0	2.5 3
4 7	VAPING	ME General	445	0.60	77	60	0.11	241. 53	2.5 2

48	PINTEREST	OP Means	373	0.51	30	51	0.09	200.61	2.50
49	DELAYS	Infrequent	73	0.10	31	10	0.02	39.21	2.50
50	MISINFO	Synonym	502	0.68	91	69	0.12	269.06	2.49
51	INVENTOR	PCA	80	0.11	10	11	0.02	42.87	2.49
52	CHRISTENSEN	AC Individual	87	0.12	8	12	0.02	46.52	2.49
53	FISCAL	Story	94	0.13	27	13	0.02	50.18	2.48
54	RIPPLE	OP Implementation	101	0.14	37	14	0.02	53.83	2.48
55	TRANSGENDER	OP effects	180	0.24	47	25	0.04	95.81	2.48
56	FORWARDED	OP Means	93	0.13	29	13	0.02	49.29	2.47
57	EVANS	AC Entity	135	0.18	25	19	0.03	71.23	2.46
58	PRIVILEGES	OP Response	71	0.10	13	10	0.02	37.44	2.46
59	FACILITY	PCA	190	0.26	41	27	0.05	99.59	2.45
60	DISCOURAGES	OP Effects	70	0.10	21	10	0.02	36.56	2.44
61	PETSMART	Story	229	0.31	26	33	0.06	118.89	2.43
62	GALLUP	Research	90	0.12	28	13	0.02	46.65	2.42
63	GP	ME General	83	0.11	34	12	0.02	42.99	2.42
64	SURVEYS	Research	89	0.12	35	13	0.02	45.77	2.41
65	MARATHON	PCA	82	0.11	27	12	0.02	42.12	2.40
66	CLEARs	OP Response	123	0.17	68	18	0.03	63.18	2.40
67	DONATED	OP Implementation	143	0.19	35	21	0.04	73.27	2.40
68	230	AC Entity	444	0.60	26	66	0.12	225.56	2.38
69	NEWSGUARDRA TING	Story	168	0.23	33	25	0.04	85.28	2.38
70	CORRECTING	OP Response	571	0.78	109	85	0.15	289.78	2.38
71	ALLSTATE	User or Hashtag	255	0.35	29	38	0.07	129.31	2.38

7 2	PETS	ME General	67	0.09	32	10	0.02	33.9 4	2.3 7
7 3	ARVINDKEJRIWAL	User or Hashtag	67	0.09	30	10	0.02	33.9 4	2.3 7
7 4	LABELS	OP Response	555	0.75	54	83	0.15	280. 73	2.3 7
7 5	ASSURE	Story	132	0.18	20	20	0.04	66.1 4	2.3 5
7 6	VACCINESWORK	User or Hashtag	353	0.48	59	54	0.09	175. 65	2.3 4
7 7	SOMALI	AC Country	65	0.09	24	10	0.02	32.2 1	2.3 3
7 8	ABORTION	ME General	914	1.24	95	141	0.25	452. 00	2.3 3
7 9	IMMUNIZATION	ME Vax	77	0.10	39	12	0.02	37.7 9	2.3 1
8 0	PNEUMONIA	ME General	77	0.10	18	12	0.02	37.7 9	2.3 1
8 1	SURGERY	ME General	70	0.10	37	11	0.02	34.1 4	2.3 0
8 2	LIFESITENEWS	Publisher	164	0.22	16	26	0.05	79.4 6	2.2 9
8 3	HTTWEETS	User or Hashtag	63	0.09	28	10	0.02	30.5 0	2.2 9
8 4	SEARCHES	OP Response	195	0.26	41	31	0.05	94.2 9	2.2 8
8 5	GUJARAT	AC Country	87	0.12	24	14	0.02	41.6 8	2.2 7
8 6	MISSTEPS	PCA	62	0.08	20	10	0.02	29.6 5	2.2 6
8 7	DISCIPLINE	OP Response	74	0.10	24	12	0.02	35.2 4	2.2 5
8 8	CLARIFY	OP Response	289	0.39	89	47	0.08	137. 31	2.2 5
8 9	XRP	User or Hashtag	110	0.15	32	18	0.03	52.0 1	2.2 4
9 0	INDIATODAY	Publisher	91	0.12	34	15	0.03	42.7 8	2.2 3
9 1	AUTISM	ME General	300	0.41	71	50	0.09	139. 81	2.2 2
9 2	SCICOMM	User or Hashtag	168	0.23	65	28	0.05	78.2 9	2.2 2
9 3	FRASER	AC Individual	84	0.11	22	14	0.02	39.1 5	2.2 2
9 4	TRIVAGO	Story	95	0.13	15	16	0.03	43.9 0	2.2 0
9 5	SFGATE	User or Hashtag	83	0.11	18	14	0.02	38.3 1	2.2 0
9 6	UGANDA	AC Country	71	0.10	35	12	0.02	32.7 2	2.2 0

97	SARDESAIRAJDEP	User or Hashtag	71	0.10	38	12	0.02	32.72	2.20
98	TAG	OP Response	401	0.54	51	68	0.12	184.29	2.19
99	SCAREMONGERING	OP Effects	159	0.22	68	27	0.05	72.99	2.19
100	CLARIFIED	OP Response	94	0.13	50	16	0.03	43.07	2.19
101	METADATA	OP Response	70	0.10	16	12	0.02	31.89	2.17
102	FREEZES	OP Response	64	0.09	6	11	0.02	29.09	2.17
103	REGULATOR	OP Response	168	0.23	34	29	0.05	76.09	2.16
104	PSEUDOSCIENCE	Synonym	162	0.22	58	28	0.05	73.30	2.16
105	MISINTERPRETATION	Synonym	75	0.10	41	13	0.02	33.85	2.16
106	EXEMPTIONS	ME General	80	0.11	26	14	0.02	35.82	2.15
107	SKEPTICS	ME Vax	97	0.13	37	17	0.03	43.38	2.14
108	ALCOHOL	ME General	97	0.13	43	17	0.03	43.38	2.14
109	CONSTRUCTION	Infrequent	74	0.10	38	13	0.02	33.03	2.14
110	UNPROVEN	Synonym	209	0.28	37	37	0.06	92.68	2.13
111	BUSTING	OP Response	96	0.13	54	17	0.03	42.56	2.13
112	CURES	ME General	259	0.35	43	46	0.08	114.53	2.12
113	NSW	AC Country	129	0.18	39	23	0.04	56.86	2.12
114	SANDALSRESORTS	Story	224	0.30	24	40	0.07	98.60	2.12

1 1 5	ABOUND	OP Effects	123	0.17	55	22	0.04	54.0 6	2.1 1
1 1 6	CONTACT	Infrequent	766	1.04	69	138	0.24	334. 60	2.1 0
1 1 7	MARRIAGE	Story	215	0.29	51	39	0.07	93.3 6	2.0 9
1 1 8	TENNESSEE	AC Country	187	0.25	31	34	0.06	81.0 3	2.0 9
1 1 9	VEGAN	Infrequent	87	0.12	29	16	0.03	37.3 2	2.0 7
1 2 0	HEATED	Infrequent	76	0.10	35	14	0.02	32.5 6	2.0 7
1 2 1	PASTORS	Story	141	0.19	18	26	0.05	60.3 5	2.0 7
1 2 2	SUPERSPREADE RS	ME General	81	0.11	16	15	0.03	34.5 4	2.0 6
1 2 3	ICKE	AC Individual	81	0.11	11	15	0.03	34.5 4	2.0 6
1 2 4	SHOOTER	PCA	205	0.28	48	38	0.07	87.3 3	2.0 6
1 2 5	SMUG	Infrequent	86	0.12	24	16	0.03	36.5 2	2.0 6
1 2 6	UNICEF	AC Entity	75	0.10	26	14	0.02	31.7 5	2.0 5
1 2 7	AAP	AC Gov	117	0.16	48	22	0.04	49.2 1	2.0 4
1 2 8	UW	Research	85	0.12	34	16	0.03	35.7 1	2.0 4
1 2 9	SWIRLING	OP Implementa tion	85	0.12	45	16	0.03	35.7 1	2.0 4
1 3 0	MYPILLOWUSA	User or Hashtag	106	0.14	14	20	0.04	44.4 4	2.0 4
1 3 1	FAULTS	Infrequent	95	0.13	19	18	0.03	39.6 8	2.0 3

1 3 2	MARKING	OP Response	105	0.14	14	20	0.04	43.6 4	2.0 2
1 3 3	CONTROVERSIES	Story	120	0.16	16	23	0.04	49.5 9	2.0 1
1 3 4	RWANDA	AC Country	73	0.10	28	14	0.02	30.1 5	2.0 1
1 3 5	TRAVELS	OP Means	201	0.27	57	39	0.07	82.1 2	2.0 0
1 3 6	VOXDOTCOM	User or Hashtag	201	0.27	42	39	0.07	82.1 2	2.0 0
1 3 7	DOCTOR'S	ME General	72	0.10	21	14	0.02	29.3 6	1.9 9
1 3 8	COMMUNAL	OP Effects	113	0.15	42	22	0.04	46.0 2	1.9 9
1 3 9	PHYSICIAN	ME General	159	0.22	47	31	0.05	64.6 7	1.9 9
1 4 0	CERTIFICATION	PCA	82	0.11	18	16	0.03	33.3 3	1.9 9
1 4 1	FORWARDING	OP Means	174	0.24	24	34	0.06	70.6 2	1.9 9
1 4 2	BUG	Tech	122	0.17	31	24	0.04	49.2 0	1.9 8
1 4 3	ABOUNDS	Infrequent	132	0.18	68	26	0.05	53.1 7	1.9 7
1 4 4	DAIRY	OP Effects	71	0.10	37	14	0.02	28.5 7	1.9 7
1 4 5	BREEDS	OP Effects	76	0.10	39	15	0.03	30.5 5	1.9 7
1 4 6	PALMER	AC Individual	91	0.12	27	18	0.03	36.5 1	1.9 7
1 4 7	BOSTON	PCA	278	0.38	56	55	0.10	111. 50	1.9 7
1 4 8	OUTBREAKS	ME General	161	0.22	37	32	0.06	64.2 9	1.9 6

1 4 9	MARIJUANA	ME General	261	0.35	75	52	0.09	103. 98	1.9 6
1 5 0	INACCURACIES	Synonym	150	0.20	61	30	0.05	59.5 4	1.9 5
1 5 1	TRANS	OP Effects	363	0.49	59	73	0.13	143. 31	1.9 4
1 5 2	FERGUSON	AC Individual	109	0.15	28	22	0.04	42.8 8	1.9 4
1 5 3	ROBERTKENNED YJR	User or Hashtag	104	0.14	19	21	0.04	40.9 0	1.9 4
1 5 4	SEPARATED	PCA	84	0.11	24	17	0.03	32.9 6	1.9 4
1 5 5	GMOS	ME General	79	0.11	37	16	0.03	30.9 7	1.9 3
1 5 6	OCASIO	AC Individual	79	0.11	18	16	0.03	30.9 7	1.9 3
1 5 7	FLAGGED	OP Response	559	0.76	47	114	0.20	217. 68	1.9 2
1 5 8	CIGARETTES	ME General	98	0.13	47	20	0.04	38.1 3	1.9 2
1 5 9	BONE	ME General	88	0.12	32	18	0.03	34.1 7	1.9 2
1 6 0	ELIGIBLE	ME Vax	97	0.13	33	20	0.04	37.3 6	1.9 1
1 6 1	UBER	AC Entity	97	0.13	36	20	0.04	37.3 6	1.9 1
1 6 2	CENSURED	OP Response	87	0.12	26	18	0.03	33.3 9	1.9 0
1 6 3	HESITANCY	ME Vax	649	0.88	39	135	0.24	247. 76	1.9 0
1 6 4	TORONTO	AC Country	259	0.35	75	54	0.09	98.6 4	1.8 9
1 6 5	OPIOID	ME General	105	0.14	37	22	0.04	39.7 9	1.8 9

1 6 6	PHYSICIANS	ME General	276	0.37	48	58	0.10	104. 28	1.8 8
1 6 7	FEMA	AC Gov	76	0.10	16	16	0.03	28.6 6	1.8 8
1 6 8	MOUNTAINS	OP Effects	85	0.12	42	18	0.03	31.8 6	1.8 7
1 6 9	NEWSLITPROJEC T	User or Hashtag	141	0.19	41	30	0.05	52.5 9	1.8 6
1 7 0	CARVANA	User or Hashtag	94	0.13	12	20	0.04	35.0 6	1.8 6
1 7 1	FARMERS	OP Effects	285	0.39	69	61	0.11	105. 65	1.8 5
1 7 2	NEWSLITERACY	User or Hashtag	181	0.25	55	39	0.07	66.6 3	1.8 4
1 7 3	36	Story	204	0.28	36	44	0.08	75.0 1	1.8 4
1 7 4	NIEMANLAB	Publisher	125	0.17	40	27	0.05	45.8 9	1.8 4
1 7 5	HOUSTON	AC Country	194	0.26	44	42	0.07	71.0 6	1.8 4
1 7 6	VACCINESSAVEL IVES	User or Hashtag	83	0.11	28	18	0.03	30.3 4	1.8 4
1 7 7	DIEGO	AC Country	129	0.18	23	28	0.05	47.1 2	1.8 3
1 7 8	MASHABLE	Publisher	87	0.12	36	19	0.03	31.5 7	1.8 3
1 7 9	EXPANDS	OP Response	160	0.22	37	35	0.06	57.9 6	1.8 2
1 8 0	PRAYERS	Infrequent	82	0.11	30	18	0.03	29.5 9	1.8 2
1 8 1	DAM	Infrequent	132	0.18	38	29	0.05	47.5 9	1.8 2
1 8 2	CRYPTOCURREN CY	Tech	154	0.21	41	34	0.06	55.2 3	1.8 1

1 8 3	PATIENT	ME General	330	0.45	68	73	0.13	118. 10	1.8 1
1 8 4	MINNEAPOLIS	AC Country	122	0.17	15	27	0.05	43.6 4	1.8 1
1 8 5	CAULFIELDTIM	User or Hashtag	122	0.17	36	27	0.05	43.6 4	1.8 1
1 8 6	SENSATIONALIS M	Synonym	262	0.36	88	58	0.10	93.6 9	1.8 1
1 8 7	TEMPORARILY	OP Response	230	0.31	43	51	0.09	82.1 0	1.8 0
1 8 8	RN	Infrequent	126	0.17	45	28	0.05	44.8 7	1.8 0
1 8 9	REDUCE	OP Response	665	0.90	69	149	0.26	234. 69	1.7 9
1 9 0	PROFESSORS	Research	187	0.25	32	42	0.07	65.8 2	1.7 9
1 9 1	UPTAKE	ME General	111	0.15	34	25	0.04	38.9 5	1.7 8
1 9 2	NEGATIVITY	Emotion and Affect	119	0.16	42	27	0.05	41.4 1	1.7 7
1 9 3	KNIGHTFDN	User or Hashtag	119	0.16	35	27	0.05	41.4 1	1.7 7
1 9 4	DIGITALMARKETI NG	User or Hashtag	88	0.12	34	20	0.04	30.5 7	1.7 7
1 9 5	NDP	Infrequent	132	0.18	39	30	0.05	45.8 5	1.7 7
1 9 6	DEMO	OP Response	105	0.14	34	24	0.04	36.2 4	1.7 6
1 9 7	FLU	ME General	958	1.30	59	219	0.38	330. 60	1.7 6
1 9 8	TIMESNOW	User or Hashtag	96	0.13	42	22	0.04	33.0 4	1.7 6
1 9 9	NURSE	ME General	239	0.32	44	55	0.10	81.8 6	1.7 5

2 0 0	VACCINATION	ME Vax	218 4	2.97	87	504	0.88	745. 66	1.7 5
2 0 1	HURRICANE	OP Effects	169	0.23	29	39	0.07	57.7 0	1.7 5
2 0 2	BALTIMORE	AC Country	91	0.12	28	21	0.04	31.0 7	1.7 5
2 0 3	NFL	OP effects	341	0.46	56	79	0.14	115. 91	1.7 4
2 0 4	SHOOTING	OP Implementa tion	771	1.05	85	179	0.31	261. 42	1.7 4
2 0 5	MEDICAL	ME General	284 3	3.86	10 1	661	1.16	962. 37	1.7 4
2 0 6	COUGH	ME General	124	0.17	37	29	0.05	41.6 9	1.7 3
2 0 7	SURVEY	OP Effects	499	0.68	81	117	0.21	167. 27	1.7 2
2 0 8	PROCTERGAMBL E	User or Hashtag	324	0.44	29	76	0.13	108. 56	1.7 2
2 0 9	ANNOYING	Emotion and Affect	98	0.13	53	23	0.04	32.8 1	1.7 2
2 1 0	SURROUNDING	OP Implementa tion	741	1.01	94	175	0.31	246. 31	1.7 1
2 1 1	CORRECTS	OP Response	165	0.22	79	39	0.07	54.7 9	1.7 1
2 1 2	RANK	OP Response	203	0.28	46	48	0.08	67.3 8	1.7 1
2 1 3	CRACKING	OP Response	177	0.24	44	42	0.07	58.5 1	1.7 1
2 1 4	TRIPLE	ME General	88	0.12	35	21	0.04	28.8 9	1.7 0
2 1 5	MEDICATION	ME General	88	0.12	32	21	0.04	28.8 9	1.7 0
2 1 6	DISEASES	ME General	234	0.32	52	56	0.10	76.5 7	1.6 9

2 1 7	SHERIFF	AC Individual	104	0.14	39	25	0.04	33.8 5	1.6 9
2 1 8	MT	Infrequent	249	0.34	79	60	0.11	80.8 2	1.6 8
2 1 9	MISDIRECTION	Synonym	249	0.34	82	60	0.11	80.8 2	1.6 8
2 2 0	DOCTORS	ME General	183 0	2.49	85	445	0.78	587. 44	1.6 7
2 2 1	PREMIER	AC Gov	160	0.22	40	39	0.07	51.2 1	1.6 7
2 2 2	FLOATING	OP Implementa tion	246	0.33	81	60	0.11	78.6 8	1.6 7
2 2 3	INTENSIFIED	ME General	94	0.13	12	23	0.04	29.9 5	1.6 6
2 2 4	POLIO	ME General	237	0.32	37	58	0.10	75.4 9	1.6 6
2 2 5	CHILDREN'S	AC Entity	147	0.20	38	36	0.06	46.7 8	1.6 6
2 2 6	BTC	Infrequent	106	0.14	39	26	0.05	33.6 7	1.6 6
2 2 7	VEGAS	AC Country	194	0.26	39	48	0.08	60.9 6	1.6 5
2 2 8	DORITMI	User or Hashtag	97	0.13	35	24	0.04	30.4 8	1.6 5
2 2 9	SMM	User or Hashtag	105	0.14	42	26	0.05	32.9 6	1.6 4
2 3 0	CLINICAL	ME General	109	0.15	40	27	0.05	34.2 0	1.6 4
2 3 1	HANNITY™S	AC Individual	189	0.26	23	47	0.08	59.0 2	1.6 4
2 3 2	RESPONSIBILITIES	OP Response	92	0.12	28	23	0.04	28.5 4	1.6 3
2 3 3	ASSUMPTIONS	Infrequent	140	0.19	52	35	0.06	43.4 3	1.6 3

2 3 4	CELEBRITIES	OP Means	226	0.31	51	57	0.10	69.3 3	1.6 2
2 3 5	EXPLORES	OP Response	214	0.29	49	54	0.09	65.6 1	1.6 2
2 3 6	BARRIERS	ME General	103	0.14	37	26	0.05	31.5 6	1.6 2
2 3 7	INDIANA	AC Country	103	0.14	37	26	0.05	31.5 6	1.6 2
2 3 8	SPAM	Synonym	316	0.43	54	80	0.14	96.4 7	1.6 1
2 3 9	ABLEG	User or Hashtag	146	0.20	60	37	0.06	44.5 1	1.6 1
2 4 0	DESTROYS	Story	205	0.28	49	52	0.09	62.4 3	1.6 1
2 4 1	NIGERIA	AC Country	448	0.61	79	114	0.20	135. 88	1.6 0
2 4 2	REFUGEE	OP Effects	153	0.21	52	39	0.07	46.3 0	1.6 0
2 4 3	FENCE	PCA	94	0.13	31	24	0.04	28.3 9	1.6 0
2 4 4	CARRIERS	ME General	137	0.19	26	35	0.06	41.3 4	1.6 0
2 4 5	OZ	AC Individual	253	0.34	64	65	0.11	75.7 9	1.5 9
2 4 6	PATIENTS	OP Effects	676	0.92	77	175	0.31	200. 50	1.5 8
2 4 7	HARPER	AC Individual	166	0.23	52	43	0.08	49.2 0	1.5 8
2 4 8	SURGES	ME General	131	0.18	20	34	0.06	38.7 2	1.5 8
2 4 9	COLORADO	AC Country	173	0.23	50	45	0.08	50.9 9	1.5 7
2 5 0	AB	Infrequent	115	0.16	53	30	0.05	33.7 7	1.5 7

2 5 1	PREVENTION	OP Response	172	0.23	50	45	0.08	50.3 1	1.5 6
2 5 2	AMIT	AC Individual	107	0.15	26	28	0.05	31.2 9	1.5 6
2 5 3	SHOTS	ME Vax	477	0.65	82	125	0.22	139. 21	1.5 6
2 5 4	ERRORS	Synonym	209	0.28	72	55	0.10	60.6 5	1.5 6
2 5 5	PREGNANT	ME General	171	0.23	40	45	0.08	49.6 3	1.5 6
2 5 6	OVERLOOKED	OP Effects	200	0.27	25	53	0.09	57.5 0	1.5 5
2 5 7	FACEBOOK™S	OP Means	760	1.03	57	202	0.35	217. 62	1.5 4
2 5 8	VACCINATE	ME Vax	210	0.29	56	56	0.10	59.8 6	1.5 4
2 5 9	PLEDGES	OP Response	131	0.18	31	35	0.06	37.2 5	1.5 3
2 6 0	COMPANY'S	OP Means	164	0.22	41	44	0.08	46.3 6	1.5 3
2 6 1	FUNDRAISING	ME Vax	108	0.15	27	29	0.05	30.5 0	1.5 3
2 6 2	RUMOURS	Synonym	464	0.63	87	125	0.22	130. 43	1.5 2
2 6 3	HOUSING	PCA	111	0.15	56	30	0.05	31.0 6	1.5 2
2 6 4	PROFESSIONALS	ME General	429	0.58	51	117	0.21	118. 55	1.5 0
2 6 5	FRUSTRATED	Emotion and Affect	165	0.22	55	45	0.08	45.6 0	1.5 0
2 6 6	WHATSAPP	OP Means	138 5	1.88	59	378	0.66	382. 34	1.5 0
2 6 7	MISREPRESENTA TION	Synonym	146	0.20	65	40	0.07	40.0 9	1.5 0

268	WEIGHT	ME General	164	0.22	63	45	0.08	44.93	1.50
269	LGBT	OP Effects	153	0.21	67	42	0.07	41.89	1.50
270	AGRICULTURE	Story	160	0.22	39	44	0.08	43.70	1.49
271	SPORTS	OP Effects	410	0.56	90	113	0.20	111.63	1.49
272	KELLY	AC Individual	486	0.66	65	134	0.24	132.24	1.49
273	KNIGHT	AC Entity	105	0.14	35	29	0.05	28.50	1.49
274	HEALTH	ME General	7639	10.37	120	2116	3.71	2064.92	1.48
275	ONPOLI	User or Hashtag	137	0.19	57	38	0.07	36.96	1.48
276	SCHEER	AC Individual	108	0.15	27	30	0.05	29.08	1.48
277	UNNECESSARY	Infrequent	295	0.40	59	82	0.14	79.34	1.48
278	FUELLED	OP Implementation	151	0.21	44	42	0.07	40.58	1.48
279	DIAMOND	OP Response	122	0.17	18	34	0.06	32.69	1.47
280	BITCOIN	Tech	343	0.47	66	96	0.17	91.34	1.47
281	CAMERON	AC Individual	128	0.17	42	36	0.06	33.85	1.46
282	INDIGENOUS	OP Effects	181	0.25	39	51	0.09	47.73	1.46
283	WA	AC Country	110	0.15	55	31	0.05	29.00	1.46
284	RESPONDS	OP Response	237	0.32	80	67	0.12	62.20	1.45

2 8 5	VIOLATE	OP Response	145	0.20	33	41	0.07	38.0 4	1.4 5
2 8 6	INCORRECT	Synonym	544	0.74	86	154	0.27	142. 48	1.4 5
2 8 7	CONTAINING	OP Response	235	0.32	44	67	0.12	60.9 0	1.4 4
2 8 8	ALBERTA	AC Country	403	0.55	58	115	0.20	104. 31	1.4 4
2 8 9	KENTUCKY	AC Country	147	0.20	38	42	0.07	37.9 8	1.4 4
2 9 0	WELFARE	OP Effects	126	0.17	56	36	0.06	32.5 5	1.4 4
2 9 1	PULLS	OP Implementa tion	185	0.25	45	53	0.09	47.6 0	1.4 3
2 9 2	CORRECT	OP Response	245 5	3.33	12 0	704	1.24	630. 77	1.4 3
2 9 3	TIKTOK	OP Means	707	0.96	29	203	0.36	181. 30	1.4 3
2 9 4	PEER	Research	247	0.34	50	71	0.12	63.2 3	1.4 3
2 9 5	DOCTOR	ME General	120 7	1.64	75	347	0.61	308. 94	1.4 3
2 9 6	GIRL	OP Effects	264	0.36	72	76	0.13	67.4 4	1.4 3
2 9 7	TEEN	OP Effects	149	0.20	42	43	0.08	37.9 2	1.4 2
2 9 8	CURB	OP Response	689	0.94	60	199	0.35	175. 13	1.4 2
2 9 9	FEATURES	OP Response	290	0.39	56	84	0.15	73.3 9	1.4 2
3 0 0	PRINCE	AC Individual	248	0.34	37	72	0.13	62.5 4	1.4 1
3 0 1	MEDICINE	ME General	426	0.58	69	124	0.22	107. 00	1.4 1

3 0 2	TESLA	AC Entity	151	0.21	48	44	0.08	37.8 7	1.4 1
3 0 3	RATES	ME General	676	0.92	72	197	0.35	169. 50	1.4 1
3 0 4	OBAMACARE	Infrequent	314	0.43	58	92	0.16	78.0 8	1.4 0
3 0 5	COUNTY	AC Country	841	1.14	10 0	247	0.43	208. 35	1.4 0
3 0 6	PUBLICHEALTH	User or Hashtag	211	0.29	55	62	0.11	52.2 4	1.4 0
3 0 7	DISTRICT	AC Country	265	0.36	66	78	0.14	65.4 3	1.3 9
3 0 8	INFECTIOUS	ME General	163	0.22	40	48	0.08	40.2 2	1.3 9
3 0 9	COVIDVACCINE	User or Hashtag	146	0.20	15	43	0.08	36.0 1	1.3 9
3 1 0	REVIEWED	Research	241	0.33	46	71	0.12	59.4 2	1.3 9
3 1 1	CONTAINS	OP Means	234	0.32	72	69	0.12	57.6 1	1.3 9
3 1 2	DEBUNK	OP Response	598	0.81	92	177	0.31	146. 37	1.3 9
3 1 3	SCIENTIFIC	Research	106 7	1.45	96	317	0.56	259. 64	1.3 8
3 1 4	EPIDEMIC	ME General	525	0.71	93	156	0.27	127. 72	1.3 8
3 1 5	STATS	Research	222	0.30	66	66	0.12	53.9 6	1.3 8
3 1 6	CRACKS	OP Response	131	0.18	37	39	0.07	31.7 7	1.3 8
3 1 7	OPPORTUNITIES	Infrequent	218	0.30	50	65	0.11	52.7 5	1.3 8
3 1 8	SANDY	PCA	184	0.25	34	55	0.10	44.3 4	1.3 7

3 1 9	UNFORTUNATE	Infrequent.	204	0.28	66	61	0.11	49.1 4	1.3 7
3 2 0	LOUIS	AC Individual	137	0.19	43	41	0.07	32.9 5	1.3 7
3 2 1	PARTISANSHIP	Story	294	0.40	47	88	0.15	70.7 0	1.3 7
3 2 2	NURSES	ME General	230	0.31	43	69	0.12	55.1 1	1.3 7
3 2 3	AUSTRALIANS	AC Country	206	0.28	35	62	0.11	49.1 1	1.3 6
3 2 4	DELETES	OP Response	219	0.30	29	66	0.12	52.0 9	1.3 6
3 2 5	ALERTS	OP Response	139	0.19	43	42	0.07	32.9 3	1.3 6
3 2 6	SURGEON	ME General	268	0.36	36	81	0.14	63.4 6	1.3 6
3 2 7	AMAZON	OP Means	721	0.98	57	218	0.38	170. 61	1.3 6
3 2 8	INACCURATE	Synonym	626	0.85	98	190	0.33	147. 21	1.3 5
3 2 9	CIRCULATING	OP Implementa tion	672	0.91	83	204	0.36	157. 98	1.3 5
3 3 0	TREATMENTS	ME General	227	0.31	41	69	0.12	53.2 5	1.3 5
3 3 1	SYMPTOMS	ME General	187	0.25	36	57	0.10	43.6 7	1.3 4
3 3 2	DRIVER	OP Effects	232	0.32	39	71	0.12	53.8 3	1.3 4
3 3 3	SPECULATION	Synonym	401	0.54	10 6	123	0.22	92.6 9	1.3 4
3 3 4	REDUCING	OP Response	163	0.22	51	50	0.09	37.6 7	1.3 4
3 3 5	SIGNIFICANTLY	Research	241	0.33	49	74	0.13	55.6 1	1.3 3

3 3 6	SUSPENDS	OP Response	420	0.57	29	129	0.23	96.8 7	1.3 3
3 3 7	REFUGEES	OP Effects	315	0.43	75	97	0.17	72.3 4	1.3 3
3 3 8	CELEBRITY	OP Means	211	0.29	64	65	0.11	48.4 3	1.3 3
3 3 9	PARENTS	OP Effects	100 6	1.37	96	311	0.55	229. 54	1.3 2
3 4 0	RUMOUR	Synonym	142	0.19	66	44	0.08	32.2 8	1.3 2
3 4 1	TEACHER	OP Response	161	0.22	58	50	0.09	36.4 6	1.3 2
3 4 2	BLOCKCHAIN	Tech	212	0.29	52	66	0.12	47.8 1	1.3 1
3 4 3	CATHOLIC	Infrequent	228	0.31	56	71	0.12	51.3 9	1.3 1
3 4 4	OPTION	OP Response	311	0.42	54	97	0.17	69.9 2	1.3 1
3 4 5	MARY	AC Individual	208	0.28	36	65	0.11	46.6 1	1.3 1
3 4 6	MP	AC Individual	585	0.79	88	183	0.32	130. 86	1.3 1
3 4 7	MORRISON	AC Individual	316	0.43	34	99	0.17	70.5 1	1.3 0
3 4 8	BIGOTRY	OP Effects	587	0.80	89	184	0.32	130. 86	1.3 0
3 4 9	WILDFIRE	PCA	255	0.35	69	80	0.14	56.7 6	1.3 0
3 5 0	INSTAGRAM	OP Means	110 6	1.50	53	347	0.61	246. 17	1.3 0
3 5 1	PLS	Emotion and Affect	551	0.75	10 0	173	0.30	122. 49	1.3 0
3 5 2	RUMORS	Synonym	114 1	1.55	11 5	359	0.63	252. 74	1.3 0

3 5 3	DOSES	ME Vax	133	0.18	27	42	0.07	29.2 8	1.2 9
3 5 4	AUTHORITATIVE	Synonym	136	0.18	41	43	0.08	29.8 7	1.2 9
3 5 5	DEFENDS	Infrequent	325	0.44	71	103	0.18	71.1 0	1.2 9
3 5 6	ANTIVAXXERS	ME Vax	210	0.29	43	67	0.12	45.4 1	1.2 8
3 5 7	CHICAGO	AC Country	178	0.24	58	57	0.10	38.2 5	1.2 7
3 5 8	LNP	AC Gov	237	0.32	60	76	0.13	50.8 0	1.2 7
3 5 9	NDTV	Publisher	296	0.40	70	95	0.17	63.3 5	1.2 7
3 6 0	ACA	ME General	149	0.20	47	48	0.08	31.6 8	1.2 6
3 6 1	CORRECTED	OP Response	381	0.52	92	123	0.22	80.7 0	1.2 6
3 6 2	SAN	AC Country	322	0.44	61	104	0.18	68.1 5	1.2 6
3 6 3	TWITTER'S	OP Means	352	0.48	59	114	0.20	74.1 4	1.2 6
3 6 4	TEACHERS	OP Effects	382	0.52	75	124	0.22	80.1 3	1.2 5
3 6 5	MISINFORMED	Synonym	754	1.02	87	245	0.43	157. 88	1.2 5
3 6 6	PREVENTABLE	ME General	175	0.24	40	57	0.10	36.4 9	1.2 5
3 6 7	CRYPTO	Tech	316	0.43	51	103	0.18	65.8 0	1.2 5
3 6 8	PRODUCTS	Infrequent	411	0.56	68	134	0.24	85.5 4	1.2 5
3 6 9	INFECTED	ME General	552	0.75	49	180	0.32	114. 85	1.2 5

3 7 0	PROMISED	Infrequent	144	0.20	43	47	0.08	29.9 1	1.2 5
3 7 1	ASYLUM	PCA	147	0.20	56	48	0.08	30.5 1	1.2 5
3 7 2	PARK	Infrequent	150	0.20	52	49	0.09	31.1 1	1.2 4
3 7 3	HOSPITAL	ME General	765	1.04	67	250	0.44	158. 55	1.2 4
3 7 4	HINDU	OP Effects	327	0.44	66	107	0.19	67.6 1	1.2 4
3 7 5	LIMIT	OP Response	626	0.85	60	205	0.36	129. 26	1.2 4
3 7 6	ICE	AC Gov	229	0.31	57	75	0.13	47.2 7	1.2 4
3 7 7	BANS	ME General	641	0.87	52	210	0.37	132. 25	1.2 4
3 7 8	UPDATES	OP Response	596	0.81	79	196	0.34	122. 12	1.2 3
3 7 9	SCOTTMORRISO NMP	User or Hashtag	164	0.22	33	54	0.09	33.5 3	1.2 3
3 8 0	NARENDRAMODI	User or Hashtag	206	0.28	60	68	0.12	41.9 2	1.2 3
3 8 1	TREATMENT	ME General	545	0.74	76	180	0.32	110. 80	1.2 3
3 8 2	VIOLATING	OP Response	224	0.30	33	74	0.13	45.5 2	1.2 3
3 8 3	STEM	OP Implementa tion	284	0.39	66	94	0.16	57.5 1	1.2 3
3 8 4	ROHINGYA	AC Country	142	0.19	34	47	0.08	28.7 6	1.2 3
3 8 5	RIDDLED	OP Effects	151	0.21	56	50	0.09	30.5 5	1.2 3
3 8 6	SUSPENSION	OP Response	166	0.23	26	55	0.10	33.5 5	1.2 2

3 8 7	SHARES	OP Means	508	0.69	70	169	0.30	101. 91	1.2 2
3 8 8	ADULTS	OP Means	351	0.48	55	117	0.21	70.1 6	1.2 2
3 8 9	PAIN	Infrequent	234	0.32	59	78	0.14	46.7 7	1.2 2
3 9 0	CONSENT	Infrequent	198	0.27	42	66	0.12	39.5 8	1.2 2
3 9 1	CHECKERS	OP Response	605	0.82	57	202	0.35	120. 55	1.2 1
3 9 2	HIGHER	Infrequent	672	0.91	66	225	0.39	133. 21	1.2 1
3 9 3	NZ	AC Country	205	0.28	63	69	0.12	40.2 4	1.2 0
3 9 4	2013	Infrequent	285	0.39	70	96	0.17	55.8 6	1.2 0
3 9 5	CARBON	Infrequent	172	0.23	58	58	0.10	33.6 4	1.2 0
3 9 6	OUTBREAK	ME General	897	1.22	73	303	0.53	174. 87	1.2 0
3 9 7	SUSPENDED	OP Response	784	1.06	47	265	0.46	152. 66	1.2 0
3 9 8	APOLOGY	Emotion and Affect	345	0.47	74	117	0.21	66.7 6	1.1 9
3 9 9	CRAIG	AC Individual	392	0.53	44	133	0.23	75.7 8	1.1 9
4 0 0	AFFECTING	OP Effects	150	0.20	47	51	0.09	28.8 8	1.1 9
4 0 1	CONVERSATION S	Infrequent	194	0.26	52	66	0.12	37.3 1	1.1 9
4 0 2	VERIZON	Story	238	0.32	20	81	0.14	45.7 4	1.1 9
4 0 3	DROWNING	OP Effects	173	0.23	44	59	0.10	33.1 2	1.1 8

4 0 4	TEENS	OP Effects	164	0.22	56	56	0.10	31.3 2	1.1 8
4 0 5	ANIMALS	ME General	199	0.27	45	68	0.12	37.9 5	1.1 8
4 0 6	MANDATORY	ME Vax	152	0.21	45	52	0.09	28.9 2	1.1 8
4 0 7	GUIDELINES	OP Response	312	0.42	58	107	0.19	59.0 8	1.1 7
4 0 8	OMICRON	ME General	207	0.28	2	71	0.12	39.1 9	1.1 7
4 0 9	INCIDENT	OP Effects	288	0.39	74	99	0.17	54.2 9	1.1 7
4 1 0	USERS	OP Means	199 7	2.71	86	687	1.21	375. 90	1.1 7
4 1 1	TIPS	OP Response	558	0.76	86	192	0.34	104. 99	1.1 7
4 1 2	HARRY	AC Individual	276	0.37	33	95	0.17	51.9 0	1.1 7
4 1 3	PROJECTS	Infrequent	273	0.37	57	94	0.16	51.3 0	1.1 7
4 1 4	INITIAL	Infrequent	171	0.23	54	59	0.10	32.0 0	1.1 7
4 1 5	DISEASE	ME General	941	1.28	91	325	0.57	175. 76	1.1 6
4 1 6	GOVERNOR	AC Gov	448	0.61	60	155	0.27	83.3 9	1.1 6
4 1 7	LETTER	Infrequent	102 1	1.39	10 8	354	0.62	189. 26	1.1 6
4 1 8	FACEBOOK'S	OP Means	778	1.06	63	270	0.47	143. 95	1.1 6
4 1 9	STUDENTS	OP Effects	966	1.31	86	337	0.59	176. 89	1.1 5
4 2 0	19	ME COVID	120 03	16.30	70	4192	7.35	2193 .09	1.1 5

4 2 1	CLEARING	OP Response	157	0.21	75	55	0.10	28.5 1	1.1 4
4 2 2	CNET	User or Hashtag	467	0.63	52	164	0.29	84.3 9	1.1 4
4 2 3	ANSWERS	OP Response	353	0.48	71	124	0.22	63.7 5	1.1 4
4 2 4	MARJORIE	AC Individual	185	0.25	14	65	0.11	33.4 0	1.1 4
4 2 5	CITY	AC Country	785	1.07	10 4	276	0.48	141. 51	1.1 4
4 2 6	ANIMAL	ME General	173	0.23	61	61	0.11	31.0 1	1.1 3
4 2 7	VACCINE	ME Vax	107 30	14.57	11 0	3785	6.64	1921 .53	1.1 3
4 2 8	HOAXES	Synonym	470	0.64	75	166	0.29	83.9 5	1.1 3
4 2 9	PARTNERSHIP	OP Response	300	0.41	57	106	0.19	53.5 4	1.1 3
4 3 0	ROLLOUT	ME Vax	164	0.22	27	58	0.10	29.2 2	1.1 3
4 3 1	TRIALS	ME General	192	0.26	41	68	0.12	34.1 0	1.1 3
4 3 2	ADVOCATES	Infrequent	248	0.34	74	88	0.15	43.8 8	1.1 3
4 3 3	IMPACTS	OP Effects	228	0.31	62	81	0.14	40.2 4	1.1 2
4 3 4	DOWNRIGHT	Synonym	166	0.23	57	59	0.10	29.2 7	1.1 2
4 3 5	TESTING	OP Response	658	0.89	61	234	0.41	115. 90	1.1 2
4 3 6	SMH	Emotion and Affect	365	0.50	97	130	0.23	64.0 9	1.1 2
4 3 7	AUSPOL	User or Hashtag	103 8	1.41	10 6	370	0.65	181. 95	1.1 2

4 3 8	SEX	OP effects	535	0.73	88	191	0.34	93.4 8	1.1 2
4 3 9	ADVICE	OP Response	806	1.09	83	288	0.51	140. 58	1.1 2
4 4 0	CTV	Publisher	193	0.26	55	69	0.12	33.6 3	1.1 1
4 4 1	XENOPHOBIA	OP Effects	165	0.22	53	59	0.10	28.7 4	1.1 1
4 4 2	TYPES	Infrequent	439	0.60	65	157	0.28	76.4 3	1.1 1
4 4 3	SCAMS	Synonym	170	0.23	46	61	0.11	29.3 9	1.1 1
4 4 4	DAUGHTER	Infrequent	248	0.34	41	89	0.16	42.8 7	1.1 1
4 4 5	ROUNDUP	Infrequent	203	0.28	54	73	0.13	34.9 4	1.1 1
4 4 6	WEED	ME General	169	0.23	62	61	0.11	28.8 6	1.1 0
4 4 7	EDIT	OP Response	168	0.23	54	61	0.11	28.3 3	1.0 9
4 4 8	CLICKS	OP Means	369	0.50	60	134	0.24	62.2 1	1.0 9
4 4 9	STUDY	Research	337 3	4.58	11 5	1226	2.15	567. 60	1.0 9
4 5 0	CORONA	ME General	393	0.53	25	143	0.25	65.9 8	1.0 9
4 5 1	BLINDLY	OP Effects	250	0.34	54	91	0.16	41.9 4	1.0 9
4 5 2	DELETE	Infrequent	434	0.59	62	158	0.28	72.7 8	1.0 9
4 5 3	ADVOCATE	Infrequent	181	0.25	50	66	0.12	30.2 5	1.0 9
4 5 4	VIRAL	ME General	151 7	2.06	95	555	0.97	251. 74	1.0 8

4 5 5	NRA	AC Entity	437	0.59	71	160	0.28	72.4 0	1.0 8
4 5 6	ANTHONY	AC Individual	172	0.23	35	63	0.11	28.4 7	1.0 8
4 5 7	EXPOSURE	Research	264	0.36	59	97	0.17	43.4 1	1.0 7
4 5 8	ABCNEWS	Publisher	451	0.61	92	166	0.29	73.8 7	1.0 7
4 5 9	SHOT	ME Vax	759	1.03	76	280	0.49	123. 70	1.0 7
4 6 0	GROSS	Emotion and Affect	290	0.39	75	107	0.19	47.2 5	1.0 7
4 6 1	ANTIVAX	ME Vax	276	0.37	52	102	0.18	44.8 1	1.0 7
4 6 2	DRUGS	ME General	286	0.39	71	106	0.19	46.1 4	1.0 6
4 6 3	BATTLING	OP Response	318	0.43	60	118	0.21	51.1 7	1.0 6
4 6 4	BOARD	Infrequent	976	1.33	90	364	0.64	155. 30	1.0 5
4 6 5	RETWEET	Infrequent	670	0.91	81	250	0.44	106. 49	1.0 5
4 6 6	LOT	Infrequent	541 0	7.35	12 0	2022	3.55	856. 73	1.0 5
4 6 7	CITING	OP Effects	404	0.55	61	151	0.26	63.9 7	1.0 5
4 6 8	CUSTOMERS	Infrequent	187	0.25	50	70	0.12	29.5 1	1.0 5
4 6 9	SKYNEWSAUST	Publisher	315	0.43	46	118	0.21	49.6 3	1.0 5
4 7 0	CHECKING	OP Response	197 5	2.68	94	741	1.30	310. 09	1.0 4
4 7 1	IMMUNE	ME General	276	0.37	48	104	0.18	42.9 1	1.0 4

4 7 2	DELHI	AC Country	199	0.27	51	75	0.13	30.9 3	1.0 4
4 7 3	SCARE	OP Effects	456	0.62	97	172	0.30	70.7 4	1.0 4
4 7 4	PROPOSED	OP Response	249	0.34	95	94	0.16	38.5 5	1.0 4
4 7 5	DR	ME General	214 5	2.91	97	811	1.42	330. 97	1.0 3
4 7 6	HYSTERIA	OP Effects	357	0.48	85	135	0.24	55.0 6	1.0 3
4 7 7	MISLEADING	Synonym	273 1	3.71	10 7	1033	1.81	420. 99	1.0 3
4 7 8	CENSUS	PCA	354	0.48	30	134	0.24	54.4 8	1.0 3
4 7 9	PREVENTING	OP Response	280	0.38	55	106	0.19	43.0 8	1.0 3
4 8 0	GUIDANCE	ME General	216	0.29	40	82	0.14	33.0 2	1.0 3
4 8 1	CONTAIN	OP Implementa tion	374	0.51	67	142	0.25	57.1 6	1.0 3
4 8 2	BLOGS	OP Implementa tion	234	0.32	87	89	0.16	35.6 2	1.0 3
4 8 3	MAYOR	AC Gov	344	0.47	83	131	0.23	52.2 1	1.0 2
4 8 4	STUDIES	Research	842	1.14	72	321	0.56	127. 48	1.0 2
4 8 5	COMMUNITY	OP effects	187 2	2.54	10 6	714	1.25	283. 12	1.0 2
4 8 6	TON	OP Effects	199	0.27	62	76	0.13	30.0 1	1.0 2
4 8 7	FILLED	OP Effects	921	1.25	99	352	0.62	138. 63	1.0 2
4 8 8	BORDER	Infrequent	767	1.04	76	294	0.52	114. 67	1.0 1

4 8 9	VERGE	Publisher	271	0.37	51	104	0.18	40.4 0	1.0 1
4 9 0	USER	OP Effects	379	0.51	59	146	0.26	56.0 1	1.0 1
4 9 1	VAXXERS	ME Vax	545	0.74	49	210	0.37	80.4 9	1.0 1
4 9 2	AIDS	ME General	205	0.28	64	79	0.14	30.2 7	1.0 1
4 9 3	PERMANENTLY	OP Response	272	0.37	40	105	0.18	40.0 0	1.0 0

Appendix G: Actor-Country Codes

N	Key word	Freq.	Texts	RC. Freq.	Log_R
1	RUSSIAN	17041	108	3448	2.68
3	RUSSIA	8458	110	2609	2.07
10	EU	3566	101	1087	2.08
11	CHINA	4023	88	1839	1.5
13	KREMLIN	1444	90	201	3.21
15	FOREIGN	2928	91	1140	1.73
20	UKRAINE	1630	96	372	2.5
22	IRAN	1825	101	579	2.03
23	UN	2262	101	925	1.66
30	FUKUSHIMA	766	24	71	3.8
38	RUSSIANS	1453	78	544	1.79
39	RUSSIA'S	1438	92	204	3.19
41	EUROPEAN	962	75	244	2.35
47	SYRIA	1104	109	379	1.91
51	CHINESE	1772	78	939	1.29
57	IRANIAN	661	62	157	2.44
58	SOVIET	454	92	61	3.27
69	MOSCOW	470	76	96	2.66
77	EUROPE	869	89	386	1.54
80	WESTERN	882	101	407	1.49
85	NATO	558	88	182	1.99
91	UKRAINIAN	356	68	72	2.68
94	TAIWAN	449	43	127	2.19
99	HONG	465	33	144	2.06
101	COMMISSION	723	65	331	1.5
102	KONG	455	35	140	2.07
115	CHINA'S	748	58	201	2.27
150	LATVIA	329	44	108	1.98
153	RU	218	67	43	2.71
156	CZECH	334	58	115	1.91
161	BEIJING	258	37	69	2.27
162	GERMANY	595	72	320	1.26
184	ISRAELI	345	78	145	1.62
190	IRANIANS	140	29	18	3.33
197	ESTONIA	285	38	108	1.77
205	EGYPT'S	114	13	11	3.74
211	POLAND	346	51	162	1.46
225	SAUDI	313	63	141	1.52
226	LITHUANIA	267	36	107	1.69

228	SWEDEN	364	54	182	1.37
235	HUNGARY	274	40	116	1.61
239	SYRIAN	263	73	109	1.64
246	SLOVAKIA	254	32	104	1.66
249	SPAIN	321	54	158	1.39
251	IRAQ	357	81	188	1.29
252	BELGIUM	262	36	114	1.57
255	FINLAND	282	45	131	1.48
259	UNSC	102	21	14	3.23
264	BULGARIA	242	33	103	1.6
265	SPANISH	448	42	274	1.08
270	ROMANIA	253	36	112	1.55
272	QATAR	150	39	41	2.24
274	MALTA	262	35	120	1.5
280	LUXEMBOURG	234	26	101	1.58
282	NETHERLANDS	261	36	122	1.47
298	BELARUS	90	28	12	3.28
301	SLOVENIA	231	28	104	1.52
303	LIBYA	157	56	51	1.99
309	FOREIGNERS	114	26	26	2.5
317	PAKISTAN'S	81	18	10	3.39
325	CROATIA	232	27	110	1.45
330	PHILIPPINES	231	48	110	1.44
335	CRIMEA	99	34	20	2.68
343	CYPRUS	237	32	117	1.39
347	PORTUGAL	238	29	118	1.38
351	GREECE	287	46	159	1.22
353	AUSTRIA	235	30	117	1.38
366	KINGDOM	268	38	147	1.24
376	AZERBAIJAN	196	64	92	1.46
391	ALABAMA	237	32	130	1.24
394	ALGERIA	68	13	10	3.14
398	BRUSSELS	128	44	46	1.85
401	DENMARK	252	35	145	1.17
405	MACEDONIA	135	23	52	1.75
409	HAMAS	147	28	62	1.62
424	DOWNING	73	26	15	2.65
442	TEHRAN	68	24	14	2.65
474	XINJIANG	99	19	36	1.83
482	EUROPEANS	67	21	16	2.44
484	EMBASSY	92	37	32	1.89
488	DIPLOMATS	61	28	13	2.6
494	HK	100	29	38	1.77
497	SWEDISH	80	30	25	2.05

523	EUROPEANS	54	28	11	2.67
525	BERLIN	83	32	29	1.89
531	BAHRAIN	79	20	27	1.92
545	HONGKONG	99	21	42	1.61
572	EN	196	55	126	1.01
598	IRAN'S	275	33	98	1.86
605	EC	99	36	46	1.48
635	TAIWANESE	53	24	15	2.19
639	PRC	65	25	23	1.87
656	SALISBURY	64	20	23	1.85
667	RUS	51	21	15	2.14
669	CUBA	82	39	37	1.52

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