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Finding Hay in a Haystack: Analysing Automated Content Extraction in the Manifestos of Far Right Lone Actor Violent Extremists

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Abstract

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In the years leading up to the Covid-19 pandemic, there has been a marked increase in attacks perpetrated by far right lone actor violent extremists. Alongside these attacks, the online publishing of a manifesto to accompany the attack has become an increasingly normal method of dispersing the ideology of the perpetrator. Naturally, the question becomes whether or not it is possible to identify such content quickly and accurately and thwart such attacks. Computer-assisted content analysis tools such as Linguistic Inquiry and Word Count (LIWC) have been used in previous research to identify categories of words that are important when distinguishing extremist content from non-extremist data.

This study argues for the social identity approach to defining extremism suggested in previous research. This becomes the foundation for an investigation into whether or not the manifestos of far right lone actor violent extremists support the application of various models from social identity theory to the understanding of extremism. In doing so, this study finds that content in said manifestos show support for Smith's (2000) model of prejudice of group-based emotion and the category dominance model of crossed-categorisation. However, whilst Hogg's (2007) uncertainty-identity theory is suggested as an additional theory suitable for furthering the understanding of extremism, this study finds no evidence either in support or in opposition of this.

In carrying out these investigations, this study encounters numerous instances where LIWC misidentifies the meaning of words where a word is not used in the context LIWC expects. Upon further querying of the results of LIWC analysis, it is shown that when using the LIWC2015 standard dictionary, LIWC fails to recognise a high proportion of content relevant to the context of the manifesto. This is suggested to be due to the structuralist

and deterministic view of language which LIWC takes, in that the context in which words are used, and thus the meaning of the word, is pre-determined by LIWC. The Natural Language Toolkit (NLTK) is used to identify nouns in the manifesto data and is found to perform better than LIWC in terms of extracting contextual information. However, NLTK also identifies a large amount of information deemed to be irrelevant to the context of the manifesto data. In turn, this irrelevant information is essentially noise in which the contextual information is often lost. Without the benefit of prior knowledge of the ideology of the author and information regarding the accompanying attacks, relevant information is difficult to identify amongst the noise; in some cases, the relevant information simply is not included in the manifesto data. These results strongly suggest that computer-assisted content analysis tools such as LIWC are not suited to the analysis of manifestos of far right lone actor violent extremists, and perhaps extremist content more generally.

This study contributes both a theoretical and methodological critique of the application of computer-assisted content analysis tools to the analysis of extremist content, particularly far right lone actor violent extremist manifestos. Alongside this critique, this study shows evidence in support of the social identity approach to defining extremism, and the application of social identity theory to furthering the understanding of extremism.

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Research Thesis: Declaration of Authorship

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I declare that this thesis and the work presented in it is my own and has been generated by me as the result of my own original research.

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For Ryan

Thank you for not letting me quit

1 Introduction

Across three hours on the 22nd July 2011 Anders Breivik carried out two sequential attacks which killed 77 people. The 1,515 page manifesto published by Breivik titled *2083: A European Declaration of Independence* contains hundreds of pages of Breivik's own takes on history and the ideology that led him to becoming a terrorist. Nearly eight years later on the 15th March 2019 Brenton Tarrant shot and killed 51 people in Christchurch, New Zealand. Tarrant's 87 page manifesto *The Great Replacement* took much from Breivik's, with Tarrant citing Breivik as his real inspiration, but repackaged parts of Breivik's ideology in a far more reader friendly manner. In the following 11 months, John Earnest, Patrick Crusius, Stephan Balliet and Tobias Rathjen had all committed their own terrorist attacks, leaving 36 people dead. Before the Covid-19 pandemic shut down large parts of the western world in 2020, far right violent extremist attacks were becoming more common and more frequent. Figure 1.1 below shows the number of attacks committed by far right violent extremists in the years 2000-2019, reflecting the recent uptick in violent incidents.

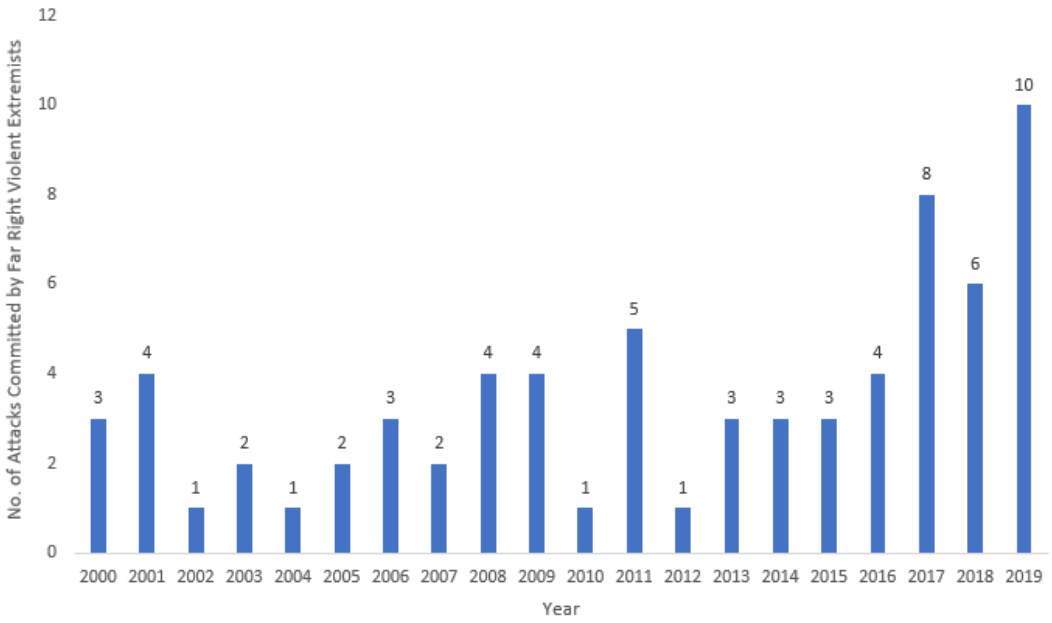


Figure 1.1: Figure showing the number of attacks carried out by far right violent extremists per year from 2000 to 2019.

It is not known whether the increase in far right violent extremist activity would have continued without the Covid-19 pandemic, but the acceleration in the frequency of attacks

beforehand and the ever-increasing presence of far right narratives in mainstream political discourse and wider society (Feldman 2019) are a legitimate cause for concern. Publishing accompanying manifestos alongside attacks has also become more popular, with Tarrant, Earnest, Crusius, Balliet and Rathjen all authoring their own manifestos. This increase brings manifestos to the centre of attention; can they be quickly and accurately analysed to reveal information about the attacks? How do the manifestos enhance understanding of their authors and the ideologies being communicated? An optimist might suggest that if Tarrant's manifesto could have been automatically analysed the Christchurch attacks could have been prevented based on the inclusion in the manifesto of information relevant to the target. However, the reality is rarely that simple.

Computer-assisted content analysis tools such as Linguistic Inquiry and Word Count (LIWC) have been used in previous research to identify categories of words which are suggested to be important in identifying extremist content. If tools such as LIWC do work, then there exists the capability to quickly and accurately identify extremist content as they are published online. However, before these tools are relied upon in this capacity, a proper investigation must take place regarding the potential advantages and limitations of such tools. With this in mind, this study utilises LIWC in an attempt to identify distinct linguistic patterns, group identity and contextually important information in the manifestos of far right lone actor violent extremists (FRLAVEs). In doing so, this study advances transdisciplinary research that draws on a variety of theoretical and methodological forms of enquiry in a knowingly promiscuous way, such an approach allows for robustness and self-reflection on the advantages and limitations of various approaches on their own, and in tandem.

There are two major aims of this study. The first aim is to investigate whether the manifestos of FRLAVEs support a social identity approach to extremism. In order to investigate the applicability of a social identity approach to extremism, this study takes a number of initiatives. The first is to put forth an argument for the social identity definition of extremism and the addition of violent extremism into the wider discourse. The second part of this is to investigate the applicability of various models found within social identity theory to the manifesto data. These models include Smith's (2000) model of prejudice as group-based emotion; Hogg's (2007) uncertainty-identity theory and a number of crossed-categorisation predictive models on group interaction. The objective of these investigations is to show whether or not models found within social identity theory are applicable to extremist content, thus showing support for the adoption of a social identity approach to extremism.

The second aim is to examine the suitability of automated tools, like LIWC and NLTK, for analysing FRLAVE manifestos, and extremist content more generally. This study takes a multi-faceted approach to this problem, using post-structuralist literary theory and mixed-methods as a basis for a discussion in order to assess overall suitability of the tools. The literary theory approach aims to provide the basis of this investigation, and it is this criticism that is generalisable to other forms of extremist content, and perhaps to content in general. The second aim is to use the mixed-methods approach to either support or reject the literary theory criticism, looking for any issues in the results of the LIWC and NLTK analysis of the manifesto data.

These aims and objectives translate into the following research questions:

RQ1: Do FRLAVE manifestos contain similar language patterns to extremist texts from actors studied in previous research?

RQ2: Can contextually important information and target information be automatically extracted from FRLAVE manifestos?

RQ3: Do FRLAVE manifestos support the social identity approach to defining and understanding extremism?

- RQ3a: In particular, do FRLAVE manifestos support the hypothesis stated by Hogg, Meehan and Farquharson that "where people feel their self-relevant values and practices are under threat, self-uncertainty strengthens identification with "radical" groups" (2010, p. 1061), and that uncertainty-based identification reduces uncertainty?
- RQ3b: Do FRLAVE manifestos support the conceptualisation of prejudice as group-based emotion? That is, in an instance of extreme prejudice, is there also a significantly increased focus on groups and emotion?
- RQ3c: Do FRLAVE manifestos support any of the crossed-categorisation predictions regarding expected outgroup bias?

RQ4: Are computer-assisted content analysis tools such as LIWC, and perhaps NLP tools in general, suitable for analysing the manifestos of FRLAVEs?

Chapter two introduces the social identity approach to extremism by discussing the current definitions of radicalisation, extremism and terrorism and how such terms are actually used in practice. In doing so, this study suggests the adoption of the social identity definition of extremism, which also includes the removal of ideology from the definition

of terrorism, instead introducing violent extremism as the step up from extremism, leaving terrorism to simply refer to a tactic oft-used by violent extremists.

Chapter three reviews previous literature from the key areas that form the basis of this thesis, as well as introducing the Linguistic Inquiry and Word Count (LIWC) software. LIWC is marketed as a text analysis tool that outputs a range of psychological and sociological insights, revealing "thoughts, feelings, personality, and motivations" (Pennebaker 2020). The foundations and relevant areas of social identity theory are also covered, including Hogg's (2007) uncertainty-identity theory, Smith's (2000) model of prejudice as group-based emotion, and a number of crossed-categorisation predictive models.

Chapter four lays out the methodology and method used in this study, with a major focus on data identification, collection and processing. Included in this chapter are discussions of what is deemed a manifesto; how the manifestos and texts are collected; why certain texts are or are not included in the final dataset; and how the final dataset is processed for analysis further down the line. Alternative methodologies and approaches to data collection, and limitations of the chosen methodology are considered, alongside potential legal and ethical issues in handling data of an extremist nature.

Chapter five presents the results of LIWC analysis, showing that 20 of the 79 LIWC categories are significantly different in the manifestos of FRLAVEs when compared to control data. Third person plural pronouns such as 'they' and 'them', and words associated with negative emotion and anger are found significantly more frequently in the manifesto data, showing support for modelling prejudice as group-based emotion. Despite the promising results, this chapter also showcases the tendency for LIWC to either not recognise or mis-categorise words relevant to the overall context of a manifesto.

Chapter six builds on LIWC's context issues by using another automated tool in an attempt to better extract contextual information from the manifesto data. The Natural Language Toolkit (NLTK) is used to extract nouns from each manifesto, the results of which should then contain contextual information. While NLTK performs well at extracting nouns, the tool extracts every single word it identifies as a noun, creating a lot of noisy, irrelevant nouns alongside the important contextual words. The issue is then not one of extraction, but of identification. The needles in the metaphorical haystack have been found, but there were an awful lot of needles in the haystack and only a select few are relevant. This chapter shows that sometimes the extraction of contextual information is restrained more by the data itself than by whatever tool may be performing the analysis.

That is, some manifestos contain little to no information of that kind, especially specific information relating to the author's target.

Chapter seven aims to assess whether or not the manifestos of FRLAVEs support the use of uncertainty-identity theory in further understanding extremism. Unfortunately, there is no obvious way to measure identity uncertainty from text, and this is found to be the case when using the LIWC category of *Certainty* in an attempt to investigate this. As identity uncertainty cannot be measured accurately, this study shows no support for the use of uncertainty-identity theory to further understand extremism, although does find some content within the manifestos that should be promising for future research into the application of uncertainty-identity theory to understanding extremism.

Chapter seven also investigates the applicability of another social identity theory model to the manifestos of FRLAVEs. Crossed-categorisation refers to when multiple group category dimensions such as gender and race can interact when defining ingroups and outgroups. A number of predictive models as to how this interaction might occur are assessed, with category dominance being found the most frequently, albeit evidenced by a small sample. Chapter eight provides a conclusion and summary of the research and results presented in this study, along with potential limitations of the study and suggestions for future research.

1.1 Language, Meaning and Structure

Before this study moves forward, a discussion must take place about the nature of language and meaning. The Swiss linguist Ferdinand de Saussure (1857 - 1913) introduced the idea of signs in *Cours de linguistique générale* (1916), published after his death by two of his students. A sign is divided into the signifier and the signified. In simple terms, the signifier is the word used to refer to something, and the signified is the something which comes to mind when the signifier is used. The key here is the signifier does not determine the signified, and the signified does not determine the signifier. The associations made between signifier and signified are taught and learned. Nowhere is this more clearly illustrated than when considering foreign languages. As an example, a tree (the signified in this example) can have a signifier of tree, arbre, baum or koks depending on whether one was speaking in English, French, German or Latvian respectively. It is also important to note that, whilst a signifier is often linked to a single word to make explanations of the concept of the signifier easier, a signifier does not have to be a single word; a phrase or

group of words can also be a signifier. This can be illustrated by using an excerpt from the manifesto of Brenton Tarrant, the perpetrator of the Christchurch Mosque shootings in March 2019, which is also used to lead into a discussion of where the meaning of a text actually comes from. In the excerpt, Tarrant is responding to the question of "You are a bigot, racist, xenophobe, nazi, facist!". The main part of Tarrant's answer is the following expletive-laden paragraph, commonly referred to online as the *Navy Seal copypasta*[1]:

> What the fuck did you just fucking say about me, you little bitch? I'll have you know I graduated top of my class in the Navy Seals, and I've been involved in numerous secret raid on Al-Qaeda, and I have over 300 confirmed kills. I am trained in gorilla warfare and I'm the top sniper in the entire US armed forces. You are nothing to me but just another target. I will wipe you the fuck out with precision the likes of which has never been seen before on this Earth, mark my fucking words. You think you can get away with saying that shit to me over the Internet? Think again, fucker. As we speak I am contacting my secret network of spies across the USA and your IP is being traced right now so you better prepare for the storm, maggot. The storm that wipes out the pathetic little thing you call your life. You're fucking dead, kid. I can be anywhere, anytime, and I can kill you in over seven hundred ways, and that's just with my bare hands. Not only am I extensively trained in unarmed combat, but I have access to the entire arsenal of the United States Marine Corps and I will use it to its full extent to wipe your miserable ass off the face of the continent, you little shit. If only you could have known what unholy retribution your little "clever" comment was about to bring down upon you, maybe you would have held your fucking tongue. But you couldn't, you didn't, and now you're paying the price, you goddamn idiot. I will shit fury all over you and you will drown in it. You're fucking dead, kiddo.

Use of the *Navy Seal* copypasta is most commonly seen in a humorous context, as an overly extreme reaction to an arbitrary insult. At the time of writing, the copypasta has been circulating on 4chan (where it originated), reddit, and the wider internet community for over 10 years. It is hard to decipher an exact meaning of the copypasta; one who is aware of the history and common context may well find it humorous or dismissive; one who is not aware of the history and common context is likely to find it aggressive. If the copypasta is considered a signifier then multiple readers can bring multiple interpretations of said signifier via their own contexts, grounded in their own societal and cultural experiences. Whether their contexts are *correct* or not is another question entirely, they still

[1] A copypasta is a block of text that is copied and pasted online on forums and social networking sites. Use of a copypasta is usually humorous or mocking in nature.

exist and they still bring meaning to the signifier. To put it simply, a singular meaning of a signifier is hard to come by.

The idea of multiple readers is supported by Derrida (1967), who explains that even in the absence of the author writing continues to signify, and argues that this shows that meaning is always something made by the reader, rather than meaning being created by the author. This would suggest that there is no true meaning created by the author, and that looking for one is an effectively pointless journey. Roland Barthes, in his essay *La mort de l'auteur (The Death of the Author)* (1977), also argues against a single true meaning created by the author. Specifically, Barthes argues that the concept of the author should be avoided as said single true meaning that is often attributed to the author is an illusion. Barthes, like Derrida, leads the death of the author into the birth of multiple readings and thus multiple meanings. If there is no singular correct meaning then; and it is the post-structuralist view of this study that there is not, the use of programs such as LIWC is all the more inappropriate. As an excellent example, LIWC shoehorns the signifiers 'white' and 'black' as carrying meaning in the contexts of the LIWC categories *Perceptive Processes* and *See*. For most general texts these contexts are suitable, not so in the case of lone actor extremist manifestos, where 'white' and 'black' often refer to racial groups. Equally, programs such as LIWC cannot and should not be expected to have the necessary information and intelligence to be able to pick out the *correct* context with a high degree of accuracy. Whilst this study argues for multiple meanings, limitations must be placed on this. In an unbounded theoretical situation, a signifier could have infinite signifieds (and vice-versa); in reality, whilst a signified can have multiple signifiers, the scope of these signifiers is bound by the experiences of the reader. This set of potential meanings is referred to as the horizon of interpretation and contains the set of all possible meanings that an individual can extract from a a signifier. The horizon of interpretation can be very narrow in some situations - usually where meaning is found in familiar contexts and requires less thought - and more broad in others, where more thought is required to extract meaning (Hirsh 2013).

Derrida and Barthes' work on multiple readers and meanings is supported by the work of Wolfgang Iser in reader response theory. Iser (1972) positions text as existing at two poles: the artistic pole as created by the author, and the aesthetic pole as received and interpreted by the author. Meaning, for Iser, is produced through some combination of these two poles, and thus a reader is required for meaning to be created. This would infer that Iser views the act of reading as an active, creative process. In his essay *The Act of Reading*, Iser goes on to introduce the concept of the ideal reader as a fictional person to

which the text appeals most to, but argues that the ideal reader doesn't actually exist and is simply an abstract (Iser 1976). The reader can never be sure of the ideal reader and thus the ideal reader just becomes the ideal reader of the reader themselves, not the ideal reader of the text or the author, and is therefore a pointless concept. However, Iser states that the real reader is equally impossible to comprehend, and instead suggests the concept of the implied reader, referring to the imagined reader when the meaning of a text is being discussed. For instance, when talking about the meaning of Brenton Tarrant's manifesto, the implied reader might refer to a young white male user of the online forum 8chan. Stuart Hall builds on reception theory in his essay *Encoding and Decoding in Television Discourse*, introducing audience reception theory (Hall 1973). Although Hall's initial essay is focused on Television Discourse — the way in which an audience receives messages from television programmes — the theory can be generally applied to many other types of discourse; in the case of this study, the theory can be applied to text. A text, created by the author, can be given a set of meanings by said author; this is referred to as encoding. Decoding on the other hand refers to how the intended reader, or the audience, receives and interprets these encoded meanings. It can be said that some of Hall's concepts of encoding and decoding resemble Iser's (1972) artistic and aesthetic poles respectively. The focal point of Hall's theory is his typology of positions that the audience can take in relation to the encoded meanings in a text. These are the dominant-hegemonic position; the negotiated position; and the oppositional position. All three positions can be aware of the encoded message but differ in how the interpreter reacts to it. In the dominant-hegemonic position, the reader accepts the encoded message as it is, further reinforcing the dominant position. The negotiated position is a mixture of acceptance and critique of the dominant position; in this way the negotiated position can be viewed as the middle-ground of the three. Finally, oppositional position creates a contradictory meaning for the text in order to oppose the dominant position.

However, Hall's model of encoding and decoding does have its critiques. Notably, as is clear from the title of Hall's essay, the theory is initially focused on television discourse in the 1970s and is not at all setup to deal with an encoded meaning or a sub-culture that is not aligned to the dominant-hegemonic ideology at the time. In terms of Hall's typology, when the interpreter takes an oppositional position to a text, it is always also an oppositional position to the dominant-hegemonic ideology. That is to say, Hall's typology assumes that every text is encoded with the dominant-hegemonic ideology. In reality, and for this study in particular, this is not always the case. As an example, the manifesto of Anders Breivik is not encoded with dominant-hegemonic ideology, rather an oppositional one. Thus, taking an oppositional position to Breivik's manifesto is actually, in the bigger

picture, a dominant-hegemonic stance. Similarly, taking a dominant-hegemonic position (as per Hall's typology) to Breivik's manifesto is in fact oppositional to the dominant ideology at the time. This example would infer that Hall's initial typology is only applicable to texts encoded with the dominant ideology. Morley 2006 and Ross 2011 use similar examples to suggest that there is a need to separate ideology and text within Hall's typology.

Ross builds on this argument by suggesting Hall's typology be built on by adding a second typology in order to "handle texts that are not clearly 'dominant-hegemonic'" (Ross 2011, p. 5). Ross begins by expanding on the encoding possibilities of the text, allowing the applications of the model to a much wider range of texts that can not be considered dominant-hegemonic in nature; the manifestos used in this study are all good examples of such texts. The second step is to split the typology across two levels; the first level of ideology and the latter of text. Focusing on the ideological typology, this now allows a reader to interpret a text encoded with an oppositional ideology from an oppositional ideological position. Ross posits that this would lead to the reader agreeing with the oppositional text. Interpreting a text encoded with an oppositional ideology from a dominant-hegemonic ideological position is said to neutralise the oppositional nature of the text. The full ideological level typology proposed by Ross can be found in (Ross 2011, p. 7). Ross' second typology focuses on encoding and decoding positions at the level of text and disregards the ideological meaning of the text during the decoding phase. Instead, Ross replaces the original decoding positions with the text-focused positions of text-acceptance; text-negotiation; and text-oppositional. In this text-focused typology, interpreting a text encoded within an oppositional ideology from a text-oppositional position will neutralise the oppositional encoding of the text. Text-acceptance on the other hand, would accept the oppositional encoding of the text. Again, the full text level typology proposed by Ross can be found in (Ross 2011, p. 8). However, whilst Ross' text-level typology helps to solve one issue it also falls foul of another. Namely, the assumption that the specific type of encoding can be identified. That is, the one specific meaning. Hall (1994, cited in Ross 2011) suggests that even if a preferred meaning is identified one can never be sure if it is truly correct. If the idea of preferred meaning is rejected then the typology becomes a purely ideological exercise.

How the previous discussion applies to tools such as LIWC may not be immediately clear. To put it simply, if meaning is created at least partially by the reader, what role does LIWC play in this process, and for whom is it playing said role? If LIWC does play a role in creating meaning, then the meaning can only be seen as being a product of whatever dictionary LIWC happens to be using at the time. In the case of this study, that would

be the standard dictionary created by the developers of LIWC itself. Thus, those very same developers ought to be considered as ideal readers whenever the LIWC standard dictionary is used. This is not an issue when analysing texts in a general context and this brings LIWC back to Hall's typology. Hall's assumption that all texts are coded within the dominant-hegemonic ideology is key here. In a similar way to Hall's assumption, LIWC assumes all text to be composed in whatever context the dictionary is designed for. This can be seen in LIWCs handling of 'black' and 'white' in the manifestos investigated in this study. It is fair to assume that, given the far right extremist nature of the manifestos being investigated, uses of 'white' and 'black' is largely in a racial context. Yet LIWC only extracts 'white' and 'black' as words of perception and seeing, nothing in particular to do with racial groups. The solution to this would appear similar to Ross' 2011 critique of Stuart Hall's initial encoding and decoding typology. A set of custom LIWC dictionaries could be constructed for use in varying contexts, but this runs into the same issue as the text level encoding/decoding typology that Ross proposes, in that it would require the context to be correctly identified in the first place.

It can therefore be argued that LIWC has too much structure. The seemingly inflexible nature of LIWCs contextual information would appear, on the basis of this argument to be its greatest limitation. The argument this study is hoping to communicate, is that there are such a wide range of options when it comes to extracting meaning from the same word, or group of words, making it unclear how anything so structured can be applied to language in a post-structuralist reality without becoming unmanageable in its size, complexity and resource requirements. Put simply, it is the view of this study that the use of LIWC under a post-structuralist point of view may well lead to a collision of structuralism and post-structuralism in a most spectacularly unfruitful fashion. This is a line of thinking that will be revisited often throughout the study.

2 Defining Radicalisation, Extremism and Terrorism: In Support of a Social Identity Approach

This chapter aims to discuss in detail the issues surrounding the definition of the terms *radicalisation*, *extremism* and *terrorism*, followed by possible solutions to the issues mentioned. This discussion does not extend to the legal definition of terrorism, which carries with it its own definition and a great deal of meaning. However, in an ideal situation the legal definition has its basis in a strong, consistent definition. Following on from the previous discussion of textual interpretation and poststructuralist critiques it may be tempting to argue that affixing meaning to these concepts is an ultimately pointless exercise, considering that each reader of said terms will bring their own meaning based on their own experiences. There may be a level of truth to this when it comes to general use of these terms, but in the contexts of academia, policy and law there is great value in having a consistent definition. With a consistent definition in mind, this chapter critiques a number of previous definitions and investigates how these could be altered to build a system of consistent definitions. Notably, this chapter ends by stating such a system, based on a social-identity approach to defining extremism suggested by McCauley and Kovalenko 2008 and supported by J.M. Berger 2018. Before such a discussion takes place, initial definitions taken from the UK Home Office (2011) are used as a basis for said discussion. These definitions are as follows:

Radicalisation "The process by which a person comes to support terrorism and extremist ideologies associated with terrorist groups" (Home Office 2011, p. 108).

Extremism "Vocal or active opposition to fundamental British values, including democracy, the rule of law, individual liberty and mutual respect and tolerance of different faiths and beliefs. We also include in our definition of extremism calls for the death of members of our armed forces, whether in this country or overseas" (Home Office 2011, p. 107).

Terrorism "An action that endangers or causes serious violence to a person/people; causes serious damage to property; or seriously interferes or disrupts an electronic system. The use or threat must be designed to influence the government or to intimidate the public and is made for the purpose of advancing a political, religious or ideological cause" (Home Office 2011, p. 108).

Whilst there exist a huge number of possible alternatives that could have been used,

the definitions stated above are used as they meet a number of criteria useful to this research. This approach offers consistency in terms of publisher and time of publishing, and is defined from the viewpoint of a Western democracy (that of the UK). The latter is important later on with regards to the sociological concept of *verstehen* (understanding the meaning of an action from the actors' point of view). Given the above definitions, it is clear that radicalisation, extremism, and terrorism are all intrinsically linked. For example, can there exist a terrorist who does not support a radical ideology? Based on the vast majority of definitions, a terrorist-like act without a radical ideological agenda is likely to be viewed as mass-murder; the Las Vegas mass-shooting committed by Stephen Paddock in 2017 and the DAS Building car-bomb attack committed by the Medellin Cartel in 1989 are good examples of this. Similarly, it is a fair assumption to make that no one is born extremist, and thus all extremists have been radicalised by some means at some point in their lives.

2.1 Radicalisation

Radicalisation found popularity in the counter-terrorism prose alongside homegrown terrorism from 2005, and suffers from taxonomic problems more frequently associated with *terrorism*; in particular, a high number of varying definitions as well as a context issue. Sedgwick (2010) notes three contexts in which radicalisation is mentioned: the security context; the integration context; and the foreign-policy context. Sedgwick argues that radicalisation is best defined as a position on a continuum and each of the aforementioned contexts draws the line between what is moderate and what is radical based on different factors. In the security context, this is concerned with direct or indirect threats to the security of a state or its' citizens. In the integration context, the line is drawn based on concerns about citizenship, "including cultural issues raised by neo-nationalism" (Sedgwick 2010, p. 490). Finally, the foreign-policy context takes into account the views of other governments when drawing the line between moderate and radical. In this study, unless otherwise stated, reference to radicalisation is only in the security context. A common narrative has been that there are three steps towards terrorism: radicalisation, which leads into extremism, followed potentially by acts of terrorism. From this narrative it would follow that radical action is the natural conclusion of an unchecked radical ideology (Holt et al. 2015). Such a statement comes with a clear logical fallacy, in that not every person with radical ideas and opinions takes part in radical action. This is discussed in more detail later on.

Githens-Mazer and Lambert (2010) conclude that the lack of a clear definition leads to

a general understanding of radicalisation which "promotes stereotyping" (Githens-Mazer and Lambert 2010, p. 901). Some of the varying definitions of radicalisation are shown below in Table 2.1.

Table 2.1: Table displaying a variety of definitions of radicalisation and their sources.

Source	Definition
Home Office 2011	*Radicalisation*: The process by which a person comes to support terrorism and extremist ideologies associated with terrorist groups
McCauley and Moskalenko 2011	*Political Radicalisation*: Changes in beliefs, feelings, and actions in the direction of increased support for one side of a political conflict
European Commission 2005	*Violent Radicalisation*: The phenomenon of people embracing opinions, views and ideas which could lead to acts of terrorism
Defense Science Board 2015	*Radicalization*: The process by which individuals come to believe that their engagement in or facilitation of non-stage violence to achieve social and political change is necessary and justified.

Sedgwick (2010) argues that the solution to this is to accept that radical and radicalisation are relative concepts. Assuming that even as a relative concept the terms should still be defined, it follows that radical and radicalisation cannot be defined without first defining normal, and must be defined in terms of what is deemed to be normal. As mentioned previously, Sedgwick (2010) suggests that radicalisation be treated as a value on a continuum, similar to political opinion being defined on a scale between left- and right-wing. The problem with such a solution is what the continuum should be representing, and where on the continuum should be defined as normal.

Regarding what the continuum should be representing, the Home Office definitions stated earlier are helpful. If extremism is said to be the opposition to fundamental British

values (defined by the Home Office (2011) as democracy, the rule of law, individual liberty, mutual respect and tolerance of different faiths and beliefs; and radicalisation is defined as the process by which a person comes to support extremist ideologies; then perhaps these British values can be used to define the continuums on which radicalisation is measured. Still to be decided however, would be where on the continuum a normal or moderate ideology lies.

Naturally, what is considered moderate evolves over time as society also evolves. The Brexit campaign and the election and subsequent tenure of Donald Trump as President of the United States from 2016 onwards mirrors a shift in public political opinions over the last few years, towards the extreme ends of the political spectrum, and further left- or right-wing. Similarly, there is a fine line between what might be considered outright opposition and legal protest of the fundamental values stated in the Home Office definition. A good example of this fine line is the recent protests in the UK that lead to the defacement of various statues, most notably that of Edward Colston in Bristol. Colston's involvement in the slave trade made the statue a target during the Black Lives Matter protests in the summer of 2020, and was finally toppled and pushed into Bristol Harbour on the 7th June 2020. On the face of it, pushing a statue that celebrated a slave trader doesn't appear to be the most radical of actions. However, the act itself can be seen as opposition to two of the above five fundamental British values, democracy and the rule of law. The rule of law has been opposed by breaking the rule of law and committing acts of criminal damage, and four people have since been charged in relation to the incident. Democracy has been opposed as the protesters decided to just topple the statue instead of asking politely, having 600 meetings about the issue, and then getting absolutely nothing done.

As has been seen in all of these events, mass media and social media companies both have essential roles to play in combating the spread of extreme and radical opinions and narratives, as opposed to either directly fuelling the fire or allowing themselves to be hijacked for nefarious means. If this is the case, who is responsible for initially defining, and frequently updating, what normal and radical ideologies are? A government is a likely definer in this scenario, although that brings its own obvious problems, mainly that the definition of radicalisation (and therefore probably extremism and terrorism) becomes instantly politicised. Githens-Mazer and Lambert (2010) also argue that governments have, in the past, cherry-picked certain research to fit their own agenda; something that, given the right to define what ideologies are normal and radical, would likely be replicated. These issues are very similar to those encountered by relative definitions of extremism,

which are discussed later.

Initially then, the concept of a relative definition of radicalisation seems more applicable than forcing an absolute definition on what is a huge amount of widely differing situations. However, as shown, the solution to one definitional issue quickly falls foul of another. The idea of a relative definition of radicalisation is not written off however, rather it is considered that Sedgwick (2010) is attempting to define radicalisation relative to the wrong thing. Instead of a relative definition in terms of opinions and beliefs, this study suggests a relative definition in terms of the more objective properties found at the end point of successful radicalisation, that is, extremism. It is at this point that this discussion veers off into mathematical metaphor for a moment, hopefully in order to add to the overall argument.

Radicalisation as a relative concept should not be thought of as a revolutionary idea, and relative definitions should certainly not be seen as an easy solution to — or a convenient way out of — dealing with the aforementioned problems. In mathematics, there is no real solution to the equation $x^2 = -1$, as the square root of -1 does not exist within the set of real numbers. Instead of attempting to define a solution to the equation, mathematics simply uses the imaginary number i to denote (not define!) the square root of -1. Essentially, the absolute value of i is not known. However, the absolute value of i^2 is known, that is $i^2 = -1$. Thus i is defined in this way, in terms of the known property that is $i^2 = -1$. In doing so, complex numbers were added to the mathematical toolbox and a whole new area of mathematics was born. The key take away here is that not everything has to be defined in absolute terms, and that recognising this could open up avenues and opportunities for further research, or to move on from the problem and focus resources on more pressing issues.

The above metaphor argues for a relative definition of radicalisation; and more specifically, a relative definition stated in terms of the endpoint of radicalisation. Referring to the definitions provided by the Home Office (2011), the definition of radicalisation states that once the process of radicalisation is complete, the person who has been radicalised is more likely to take part in vocal or active opposition to fundamental British values. Thus, a working definition of radicalisation might be: *a process which leads to a person/people taking part in vocal or active opposition to the fundamental British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of different faiths and beliefs*.

There are still a number of issues with this however. To begin, what if something or someone unwittingly causes radicalisation? For example, Darren Osbourne, responsible for the Finsbury Park attack on the 19th June 2017, was reportedly initially radicalised watching a BBC documentary on child abuse in Rotherham (see Jay 2014, committed by a group of men of British-Pakistani heritage (Rawlinson 2018). This is possibly more of a legal issue than anything else, and it could be simply accounted for by adding a requirement of 'intentional radicalisation' to the working definition. The second and clearest issue is that the definition is clearly Britain-centric. Each culture and society is different, some in clear and obvious ways, some in smaller and more niche ways. Even the UK and the United States, two countries that at first glance are culturally and socially fairly similar, have differences that would likely alter any legal definition of extremism. The most significant examples, and by far the most relevant to this study, are gun laws and freedom of speech. The approach to both is different in each country, and the difference is reflected in each country's culture and society. Simply put, if radicalisation is accepted as a relative concept in terms of a state-based definition of extremism then the idea of a globally accepted definition should be dismissed immediately. This is less an issue of a relative definition of radicalisation, but rather an issue of the initial definitions of extremism being used in this discussion, namely that the initial definition is clearly state-based. For now, the initial definition will still be used, but will be discussed in further detail in the next section of this chapter.

Thus, a sensible definition of radicalisation based on the above initial definitions might be as follows:

Radicalisation is a process which is intended to lead to a person/people taking part in vocal or active opposition to the fundamental British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of different faiths and beliefs.

This definition should not be taken as the magical solution to all of the definitional problems encountered with radicalisation. It is meant as an example; that it is possible, and sensible, to accept that radicalisation is a relative concept and thus the exact process of radicalisation cannot be defined in universal terms. Looking back at Table 2.1, the first word in three of the definitions is 'the'. This study suggests that radicalisation is not *the* process, it is *a* process. The point here is that there can be no exact definition of radicalisation and yet no value has been lost from the discussion. Rather, by accepting that radicalisation is a relative concept prone to change over time, this study hopes that new avenues of discussion and research can be explored.

2.1.1 Models of Radicalisation

Earlier in this discussion the narrative of the three steps of terrorism was briefly mentioned, this small subsection investigates said narrative in more detail. As stated earlier, the three steps of terrorism leads into some problematic suggestions regarding the road between radical ideology and terrorism. Namely, that a radical ideology left unchallenged could result in terrorism. This idea that terrorism is the natural, and assumed, final stop of a process that begins with radicalisation has appeared all-too-frequently in counter-terrorism and counter-radicalisation policy. This is seen in a 2007 report published by the NYPD, *Radicalization in the West: The Homegrown Threat*, which proposes that radicalisation is treated as a four-step process, consisted of Pre-Radicalisation, Self-Identification, Indoctrination and Jihadisation (Silber and Bhatt 2007). The existence of other reasons for radicalisation are seemingly dismissed, including oppression, suffering, humiliation and revenge. It would seem then that the holy grail has been found, in the shape of identifiable signatures related to the radicalisation process; unsurprisingly, the counter-terrorism policy-makers were interested.

However, what Holt et al (2015) refer to as the 'single-dimensional model' of radicalisation has its flaws. To begin with, there is a clear distinction between those with radical opinions and ideas, and those who take radical action. In a study by the Pew Research Center in 2011, when asked about suicide bombings or other forms of violence against civilian targets, 1% of Muslim Americans thought such an act was often justified, and 7% thought it was sometimes justified (Pew Research Center 2011). It follows that, according to that study, 8% of US Muslims think that terrorist violence is often or sometimes justified. However, this does not translate to the number of actual terrorist offences; according to Holt et al, "only hundreds of US Muslims have been arrested for violence-related offences" (Holt et al. 2015, p. 111). Applying these same percentages to the Muslim population of the UK (a loose inference at best but deemed a useful discussion point nonetheless) from England and Wales is roughly 216,000 people (Office of National Statistics 2012). Yet the number of arrests for terrorism offences in the UK in 2010/11 was 121 (Travis 2011). Even in 2017, a year in which five terrorist attacks were committed in the UK (of which four were linked to Islamist extremism), alongside a significant increase in the threat of Islamic terrorism (Corera 2017; MI5 2017; Travis 2017), there have still been only 379 terrorism related arrests in the year to June (MI5 2017). A loose inference can be made that of the 216,000 Muslims in England and Wales who may (the Pew Research Center study was focused on US Muslims) believe that terrorist violence is sometimes or often justified, 0.05% were arrested. It is implausible and irresponsible to infer that the remaining 99.95% (or 215,879) Muslims in England and Wales may hold

radical opinions but not take part in radical action.

The above critiques are theoretically based. On a practical level, the amount of information and intelligence that is required to scan for the 'signatures of radicalisation' is unrealistic. For example, amongst the signatures suggested by Silber and Bhatt are "giving up cigarettes, drinking, gambling and urban hip-hop gangster clothes" and "growing a beard" (Silber and Bhatt 2007, p. 31). On a practical level these suggestions do not seem at all applicable in a useful way. If anything, they only justify mass-surveillance of Muslim populations. This supports Kundnani's (2012) statement that the fixation on being able to predict terrorism has essentially lead to the justification of mass-surveillance against Muslim populations. An interesting hypothesis, and one that is certainly not without merit, is whether the mass surveillance of Muslim communities designed to counter radicalisation has in fact added to the problem of radicalisation, adding to the feelings of victimisation and oppression that Silber and Bhatt (2007) dismiss as irrelevant to the radicalisation of a Western individual. Returning to the idea of the three step process of radicalisation, extremism, then terrorism; the link between the three should still be easy to see. However, the jump from extremism to terrorism is a much harder one to make as there are clearly more factors involved. With that in mind, the next section discusses the term extremism.

2.2 Extremism

Extremism, like radicalisation, is a term that has proved difficult to define clearly, and even more difficult to define where said definition does not have the potential to be abused for political gain. Definitions of extremism can be roughly split-up into three approaches: state-based, relative, and social identity. State-based definitions are based on values, beliefs, or actions set out by a governing authority. Relative definitions usually define extremism as holding a set of beliefs that are considered outside of mainstream beliefs. Social identity theory based definitions focus on group membership and intergroup interactions. The definition used as a basis for this discussion is a state-based definition, provided by the UK Home Office, that is:

Extremism "Vocal or active opposition to fundamental British values, including democracy, the rule of law, individual liberty and mutual respect and tolerance of different faiths and beliefs. We also include in our definition of extremism calls for the death of members of our armed forces, whether in this country or overseas" (Home Office 2011, p. 107).

It is clear how UK-centric this definition is, basing what is extreme on whether or not they are opposed to a set of *British* values. There are a number of issues with such a definition however, many of which are shared with Home Office's definition of radicalisation discussed previously in Section 2.1. Notably, these include who decides what the British values are; when is the line into vocal or active opposition crossed, and who decides where that line is?

With regards to the first issue of who is responsible for deciding what values are used to conclude if an ideology is extremist or not, the government or some kind of independent committee made up of government and security personnel would be a natural place to start. However, this leaves use of the term extremism wide open to potential abuse by government authorities. This could be used to suppress political opposition; negative narratives concerning the current government; to pass laws marginalising or oppressing sections of society, and so on. The second problem, regarding when exactly does vocal or active opposition begin, occurs frequently in both state- and relative-based definitions of extremism. What is seen as opposition to these values is constantly changing as the political spectrum becomes more or less extreme. This is not even recognising that what is seen to some as opposition might not be to others, a tactic used to label political opponents or simply those that disagree as extremist or radical. As an example, British MP Sir Bernard Jenkin commented that the role of the Speaker in the British House of Commons had become "irretrievably politicised and radicalised" after the Speaker at the time, John Bercow, advised the Prime Minister not to ignore a law concerning Brexit (BBC 2019). Finally, on the question of who would decide where the line into opposition of British values lies, the discussion is identical to that of who decides what those values are in the first place, with the same problems arising. The issues described apply not only to state-based definitions, but also to relative definitions of extremism. Relative definitions of extremism that are based on non-mainstream ideologies fall down because of the number of historical examples showing why such definitions are essentially meaningless, the best example being the Nazi party. At the time, they were not non-mainstream, and thus by a relative-definition of extremism, not extremist. However, a relative definition is essentially the grounds of the *we know it when we see it* approach, in that a situation is analysed relative to a person's own behaviour and behaviour which is deemed to be socially unacceptable at the time. There is an argument that could be made then, that a relative definition is practical at a casual, individual level for identifying extremism and terrorism; but totally unacceptable and very prone to abuse when utilised in the realms of government policy and security.

The final approach to defining extremism is the social identity approach. Instead of focusing on what extremist ideas are, or how they relate to mainstream society or state values, the social identity approach describes extremist beliefs in terms of behaviour regarding ingroups, outgroups, and intergroup interactions. An ingroup, in this case, is considered to be a group of people who share a perceived identity, with racial, national, gender, or sexual identity as good examples in this context. An outgroup is the people who are purposefully rejected by the ingroup. In the case of extremism, this study considers that these ingroups and outgroups do not have to actually exist structurally. As long as a person or group perceives there to be an ingroup with which they are an active member, or whose ideology they identify with, and as long as there is a perceived outgroup, that is all that is sufficient for extremist ideologies to exist. In utilising the social identity approach, McCauley and Moskalenko give both a functional and descriptive definition of radicalisation, that are as follows:

Functional: Increased preparation for and commitment to intergroup conflict.

Descriptive: Change in beliefs, feelings, and behaviours in directions that increasingly justify intergroup violence and demand sacrifice in defense of the ingroup (McCauley and Moskalenko 2008, p. 416).

Berger also favours a social identity approach to defining extremism, that is:

Extremism refers to the belief that ingroup's success or survival can never be separated from the need for hostile action against an outgroup (Berger 2018, p. 44).

One potential issue is that it is not immediately clear how lone actor terrorists such as Dylann Roof and Anders Breivik (responsible for the 17th June 2015 Charleston Church shooting and the 22nd July 2011 Norway terrorist attacks respectively) fit into such a definition. If the focus is on social groups surely lone actors, who by definition are not part of a larger organisation (that which would be considered an obvious ingroup), are not considered. This is not the case because, as noted earlier, the ingroups and outgroups do not have to exist structurally for someone to identify with them. In support of this argument, Table 2.2 below shows that lone actor terrorists have a high use of third person plural pronouns in their manifestos, suggesting high referencing of outgroup(s). Also shown is that use of first person plural pronouns is not consistently significantly higher than their use in non-extremist text (shown in the table as LIWC2015 Mean). This suggests that in the case of lone actor extremists, the existence or membership of an ingroup is not necessary for extreme behaviour towards an outgroup. That this is similar to the ideas found in self-categorisation theory supports the use of a social identity approach to defining extremism; with self-categorisation theory being closely linked to social identity theory and

a component of the social identity approach. The case of Anders Breivik stands out here as a possible anomaly due to the results showing that his manifesto contains the second lowest percentage of first person plural pronouns and the lowest percentage of third person plural pronouns out of the lone actor terrorist manifestos being studied. Upon further investigation using noun analysis, and as Table 2.3 shows, Breivik frequently addresses both his ingroups and outgroups directly. Despite this, Breivik still uses 70% more third person plural pronouns than the average non-extremist text. These results suggest that even in the case of lone actor terrorists, the social identity approach to defining extremism is superior to relative and state-based definitions.

Table 2.2: Table showing usage of first and third person plural pronouns in a sample of lone actor terrorist manifestos and the average use in non-extremist texts. Usage given as percentage of total word count.

Source	1st Person Plural	3rd Person Plural
LIWC2015 Mean	0.72	0.66
Anders Breivik	0.75	1.12
Brenton Tarrant	1.64	2.04
Dylann Roof	1.96	2.01

Table 2.3: Table showing some of the most frequently referenced groups in the manifesto of Anders Breivik

Group Referenced	Frequency (% of word count)
Muslim	0.2
Muslims	0.19
Christians	0.10
Knights Justiciar	0.04
Jews	0.04

This is a basic approach to this kind of analysis, focusing solely on the pronouns used when referring to ingroups and outgroups. There are a number of limitations to such an approach, such as direct references to groups not considered. As shown in Table 2.3, direct references can come in the form of either referring to groups by their given name or through slurs that dehumanise the outgroup. A similar technique is also used in some cases to refer to ingroups, but with the intention of putting said ingroup on a higher level of morality and righteousness. Statistically speaking, the usage of first person plural

pronouns cannot be said to be significantly statistically different in lone actor extremist manifestos compared to non-extremist texts such as tweets, blogs and news articles (the full composition of this set of non-extremist text can be found in Pennebaker et al (2015, pp. 9–10). This infers that in the case of lone actor extremists, there is a lack of consistent focus on an ingroup but still a very high focus on outgroups. In terms of the social identity approach, it can be argued that the terms 'ingroup' and 'outgroup' suggest a level of structural existence that simply is not present in the in- and outgroups discussed in the manifestos of lone actor far right violent extremists. A potential alternative may be to add 'perceived' before in- and outgroups in the social identity definition, although this study appreciates that this would lead to yet another additional definition. This does not conflict with the social identity approach, as the author still perceives the in- and outgroups to exist and perceives themselves to be part of, or acting on behalf of, their perceived ingroup.

Thus, this section has shown that the current definition of extremism in use by the UK Home Office is unsuitable, for the reasons discussed, whilst also showing evidence in support of a social identity approach to defining extremism. Although this study has suggested that the manifestos of lone actor violent extremist manifestos may require a slight alteration of the social identity approach to defining extremism, for the sake of continuity, this study will use Berger's definition of extremism, that is:

Extremism refers to the belief that an ingroup's success or survival can never be separated from the need for hostile action against an outgroup (Berger 2018, p. 44).

As per the previous section, since the definition of extremism being used has changed, so has the way in which this study has defined the end-point of successful radicalisation and thus the definition of radicalisation suggested in the previous section must now be updated to reflect this. That is,

Radicalisation is a process which is intended to lead to a person/group believing that their perceived ingroup's success or survival can never be separated from the need for hostile action against a perceived outgroup.

2.3 Terrorism

More so than radicalisation and extremism, terrorism has long-suffered from the same definitional issues. There are of course an ever-increasing number of suggested definitions from a wide variety of sources. However, as of yet, including a number of "individual agencies within the same governmental apparatus . . . cannot agree on a single definition

of terrorism" (Hoffman 2017, p. 34) has not been agreed. Although certainly not separate from the definitional in-decisions, are the various, commonly-seen phrases such as *one man's terrorist is another man's freedom fighter*, and the approach of *we'll know it when we see it*. Such phrases can be linked back to the poststructuralist reality discussed previously. Accordingly, not just words but actions also will be interpreted differently dependent on life experiences. Consider, therefore, rather than multiple readers of a given text, multiple viewers of a political situation. That neither of these statements are explicitly wrong (or arguably too far from the truth) is very likely adding to the definitional issues raised above. They also allow the issue to be skipped over. Also not to be ignored are the cynical (yet not without merit or reason) ideas about what terrorism means that arise from political decisions in recent years. A good example of such is Greenwald's (2012) comments on the case of Mujahedin-e Khalq (discussed in further detail later on):

> the application of the term 'terrorist' by the U.S. government has nothing to do with how that term is commonly understood, but is instead exploited solely as a means to punish those who defy U.S. dictates (Greenwald 2012).

Interestingly, Greenwald uses the phrase "commonly understood", suggesting that there may be an identifiable single definition or, as Berger (2019) suggests, general agreement over a number of key components such as a political or ideological motivation. However, given the evidence to the contrary, it can also suggest that there is merit in the *we'll know it when we see it* approach, even if a single definition is not found. This may fit with Friedersdorf's (2012) statement that terrorism is rarely used with an actual meaning in mind, although the *we'll know it when we see it* approach would suggest a common meaning exists, perhaps just not one that is easily stated in terms of the English language. Other cynical definitions include *terrorism is just violence that one doesn't like* (Harmon 2013). There is certainly an argument that can be made that the use of of "terrorist" or "terrorism" is far more dependent on who is attempting to apply those labels rather than who or what they are being applied to. Whilst such a conclusion may appear to be unhelpful in the search for definitional clarity, it would appear to mirror reality, as is illustrated by the following cases of Mujahedin-e Khalq, Dylann Roof, and Darren Osborne. The following case study is designed to investigate how the use of the term terrorism can change along with the change in political stances of not only the group being labelled as terrorist, but also the group or nation responsible for said labelling.

2.3.1 Mujahedin-e Khalq

This section provides a brief overview of the organisation known as *Mujahedin-e Khalq* (MEK), focusing on the events that led to changes in how the organisation was viewed

(i.e. terrorist or non-terrorist). The purpose of this case study is not to bring foreign policy into question (although there is certainly a discussion that can be had), but to illustrate how views of who is a terrorist, or who is not a terrorist, can change for a number of complex reasons.

Mujahedin-e Khalq, also known as the *People's Mojahedin Organisations of Iran*; *National Council of Resistance of Iran*; and *Mujahedin-e Khalq Organisation* are an Iranian political/militant organisation established in 1965 as a splinter group of the *Iran Liberation Movement* (Schmid and Jongman 1988). It is led by Massoud and Maryam Rajavi, although Massoud has not been seen since 2003 and is presumed dead. In the 1979 Islamic Revolution, MEK supported Ayatollah Khomeini and with him the seizure of the U.S. Embassy in Tehran (BBC 2015b; Global Security 2018). However, although initially supporting the new government, when Massoud Rajavi was barred from being able to stand in the next election, MEK quickly turned against the Iranian government; and were soon fighting alongside Saddam Hussein's Iraqi forces in the Iran-Iraq war during the 1980s. It was this decision, to fight on the Iraqi side, that lost MEK the vast majority of its domestic support inside Iran. The support from Hussein's Iraq would last for many years, with the USA using MEK as an example of Hussein sheltering terrorists to justify the second gulf war:

> Iraq shelters terrorist groups including the Mujahedin-e Khalq Organisation (MKO), which has used terrorist violence against Iran and in the 1970s was responsible for killing several U.S. military personnel and U.S. civilians (The White House 2002).

However, once MEK had revealed the existence of the Iranian nuclear weapons programme in 2002, followed shortly after by the fall of Saddam Hussein's Iraq in 2003, the focus shifted towards Iran and MEK had seemingly gained some political favour in the United States. So much so that in 2004, they were designated as *civilian protected persons* under the Geneva Convention by the U.S., ignoring advice from several agencies and organisations, including its own state department (Council on Foreign Relations 2005). Unsurprisingly, the decision was seen as highly controversial, as the U.S. had just granted special status to a group it had also designated as a Foreign Terrorist Organisation (FTO). Because of the threat of potential Iranian nuclear weapons, Iranian dissident groups including MEK suddenly found themselves to be very useful to advocates of regime change in Tehran, and were discreetly given funds and resources to carry out a number of anti-regime activities. This went as far as several MEK members, reportedly, receiving training from U.S. Joint Special Operations Command (JSOC) in 2005, when the group were still a designated FTO (Hersh 2012). Israeli Mossad may have also provided support to MEK,

with U.S. officials stating that a number of assassinations of Iranian nuclear scientists were carried out by MEK units that had been trained and financed by the Mossad. Hersh (2012) speculates, via an unnamed source, that those operations "benefited from American Intelligence".

In 2008, the UK removed MEK from its list of terrorist organisations, a decision mirrored by the EU a year later, and Canada and the U.S. in 2012. In response to the decision by the U.S., Iranian State TV said that the MEK were treated as "friendly terrorists" by the U.S. and were in fact being used as a tool against the Iranian regime (Associated Press 2012). The de-listing in the U.S. followed a sustained period of lobbying by several Washington political elites who supported MEK. The decision was heavily criticised in a joint-expert statement published in the Financial Times, (see (Abrahamian et al. 2011)), referring to the claims by the MEK that the group was the main opposition in Iran, whereas in reality they haven't had a large domestic support since supporting Iraq in the Iran-Iraq war. A Human Rights Watch report that describes how MEK has, on numerous occasions, committed human rights abuses against its own members who simply wanted to leave the organisations, including:

> prolonged incommunicado and solitary confinement to beatings, verbal and psychological abuse, coerced confessions, threats of execution, and torture that in two cases led to death (Human Rights Watch 2005, p. 14)

The report, built on the testimonies of ex-MEK members, describes how the group required total divorce from any physical and emotional attachments, forcing members to divorce their spouses. This behaviour appears to support the conclusion that MEK is a cult-like group (Abrahamian et al. 2011). The de-listing of MEK as an FTO is argued to be most harmful to the legitimate, non-violent, political opposition parties in Iran, such as Iran's Green Movement (Abrahamian et al. 2011).

The issue of MEK has been raised again recently, with Donald Trump naming John Bolton as his National Security Advisor. Bolton had previously delivered a speech to MEK and supporting groups, in which he suggested that MEK was a "viable alternative to the Islamic Regime" in Iran (Bozorgmehr and Manson 2018). A top security official in Iran expressed concerns that Bolton had "received salary from a terrorist sect" (Bozorgmehr and Manson 2018). In summarising this case study, Table 2.4 below displays the changes in the Iranian and US views of MeK over the past 20 years.

One man's terrorist is another man's freedom fighter rings true in this situation. Would having a single, internationally agreed upon definition of terrorism prevent this

Table 2.4: Table displaying the change in Iranian and American views of Mujahedin-e Khalq over the past 20 year period.

Year	Iranian Gov. View	US Gov. View
-2002	Terrorists	Terrorists
2004	Terrorists	Protected civilians under the Geneva Condition, also a designated FTO
2005	Terrorists	Protected civilians under the Geneva Convention; training provided; designated FTO
2012-	Terrorists	Legitimate political organisation

sort of situation from occurring? It is, unfortunately, unlikely. For it not to occur the political situation between the USA and Iran would have to be dramatically different; a simple agreed definition of terrorism would be unlikely to affect that political situation. It might, at the very most, slightly increase public outrage that a number of governments have worked with MEK.

A similar, more widely known situation is that of the Soviet-Afghan war and the US support for Mujahideen groups fighting the Soviet Army. During the Soviet-Afghan war, (which spanned just over nine years from 1979 to 1989), a major part of the resistance was Sunni Mujahideen groups, bolstered by foreign fighters and volunteers. Many of these groups were supported, (in the form of arms, training, and finances), by the USA and its allies; including the UK, West Germany, Saudi Arabia, and Pakistan. Notably, Stingers[1] were provided to these groups by the CIA to counter the Russian's air superiority. Whilst the success of the Stingers remains contested, the CIA later tried to buy them back from the Mujahideen, with many remaining unaccounted for. Following the withdrawal of the Soviet army in 1989, a number of Mujahideen fighters continued to commit acts of violence in Afghanistan and surrounding countries such as Pakistan. Most notably, Osama Bin Laden's Al-Qaeda was among these groups. Veterans of the Soviet-Afghan war were later found to be leading extremist groups and insurgency efforts around the world, including in Bosnia and Chechnya.

Again, the question to be asked here is would an internationally agreed upon definition have stopped those Mujahideen groups from being trained and supplied with arms by

[1] A man-portable surface-to-air anti-aircraft missile platform.

the US Government? As previously the answer is, unfortunately, very unlikely. Similar to the Iran/USA situation, the existence of such a definition would not have changed the political climate, especially considering that the Soviet-Afghan war was essentially a Cold War proxy for the Soviets and the US. This would suggest that no matter the definition of terrorism being used, governments cannot be expected to be able to use the term consistently.

2.3.2 Dylann Roof & Darren Osborne

On 17 June 2015, 21 year old Dylann Roof attended a Bible study session at the Emanuel African Methodist Episcopal Church in Charleston, South Carolina. Roof waited until the other churchgoers were praying, before shooting dead nine victims, all African American, having told them that "You are raping our women and taking over our country" (Fausset et al. 2015). Roof was arrested the next day in North Carolina. Police and government officials repeatedly referred to the attack as a hate crime (BBC 2015a), with many media reports stating that there were no signs of terrorism (Greenwald 2015). Roof's racial motivation for the shooting was confirmed days later when his manifesto and website were discovered, making clear his political ideologies and his opinion of various races, but largely focused on African Americans. However, even after the discovery of the manifesto, the American government did not refer to the attack as an act of terror. The PATRIOT Act defines 'domestic terrorism' as activities that:

> "(A) involve acts dangerous to human life that are a violation of the criminal laws of the United States or any State; (B) appear to be intended – (i) to intimidate or coerce a civilian population; (ii) to influence the policy of a government by intimidation or coercion; or (iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and (C) occur primarily within he territorial jurisdiction of the United States. (USA PATRIOT ACT 2001)

Norris argues that the Charleston Church shooting "without any doubt fit the definition of terrorism in the USA PATRIOT Act" (Norris 2017, p. 273). Although Norris goes on to critique the definition offered by the PATRIOT Act by stating that the requirement of intimidation or coercion introduces awkward complexities and confusion based on what the attacker wanted the attack to cause. Norris is also one of the many to note the inconsistency in which the term 'terrorism' is used, although not going as far as Greenwald who states that terrorism is "a term that justifies everything yet means nothing" (Greenwald 2015).

It helps here to compare the case of Dylann Roof in the USA to that of Darren Osborne in the UK. On 19 June 2017 Darren Osborne drove a rental van into a group of Muslims leaving evening prayers at Finsbury Park Mosque, killing one man and injuring 12 others (BBC 2017b; Rawlinson 2018). Osborne self-radicalised after watching a documentary on a child-abuse ring run by British-Pakistani Muslims in Rotherham (BBC 2018). This is a recurring theme within the far right, Brenton Tarrant (responsible for the 15th March 2019 Christchurch attacks) also focused on the case in Rotherham and linked to information regarding a number of similar cases in the UK, Australia, Finland and Germany; Tarrant accused the media and judicial systems of covering up these crimes as they would harm the 'Multicultural utopia'. Also contributing to Osborne's radicalisation was material from far right group Britain First and Tommy Robinson, the former leader of the English Defence League (Rawlinson 2018). According to a statement by UK Prime Minister Theresa May, the "police declared it a terrorist incident within eight minutes" (BBC 2017a). A comparison of the two cases described here is found in the table below.

Table 2.5: Table comparing key areas of the attacks carried out by Dylann Roof and Darren Osborne.

	Dylann Roof	Darren Osborne
Victim Group	African American	Muslim
Number of Victims	Nine people killed	One person killed and 12 injured
Attack Method	Mass-shooting	Vehicle ramming
Criminal Charges	Nine counts of murder	Murder and attempted murder
Location	Charleston, USA	London, UK
Treated as	Hate crime	Terrorism

It should now be clear that expecting a consistent and objective application of the term 'terrorism' is unrealistic. Even with two governments who are clearly allied in the 'war on terror' and whose rhetoric has, for the most part, been very similar regarding terrorism, there are still differences in how the term is applied. Objectively speaking, both cases discussed here should be treated as terrorism. These cases, along with that of the MEK, show just some of the difficulties faced when defining terrorism, especially how political situations and stances take priority over maintaining a stable and respected definition of terrorism.

2.3.3 Defining Terrorism

The picture painted by these two case studies depicts 'terrorism' as being a term which is used seemingly at will, depending totally on whatever is most politically helpful at the time. This is not to say that terrorism as a term carries no meaning in all contexts, within a legal context the term still carries a great deal of meaning. As an unnamed academic so eloquently put it, "you'd be having a much shittier day if you were arrested for terrorism than if you were arrested for murder". However, there are many more cases that would support such a conclusion. As noted by Greenwald, critics allege that the term 'terrorism' is a "completely malleable, manipulated, vapid term of propaganda that has no consistent application whatsoever" (Greenwald 2015). It is hard to argue that there is not overwhelming proof for Greenwald's claim. However, under the assumption that such a conclusion is provable and correct, it could mean a number of things for finding an actual definition of 'terrorism'.

Begorre-Bret (2006) proposes that a typology of terrorism would be more suitable, which may solve a number of issues encountered by the search for a single definition. Begorre-Bret argues that it is necessary for there to be multiple definitions of terrorism as 'the terrorism' does not exist; that "there are several forms of violence that are called 'terrorism', but have nothing in common aside from their name" (Begorre-Bret 2006, p. 1990); and that there is no objective definition of 'terrorism'. A typology, properly implemented, may make it easier to distinguish terrorism from other forms of violence using the principles of the typology. Begorre-Bret (2006) suggests the following principles: quantity and status of targets or victims; nature of the authors (who the terrorists are); methods used by the terrorist(s); effects of the terrorism action and finally, the goals of the terrorist action.

In relation to the earlier discussion, the key question is if a typology would significantly increase the consistency in the use of the term terrorism. It may do, in that the misapplication of Begorre-Bret's (2006) specific terms might be harder to get away with. On the other hand, introducing yet more definitions is likely to make the situation even more confusing. Begorre-Bret (2006) notes that some previous works have enumerated over 100 definitions of terrorism, whilst many previous efforts to find a single definition have only resulted in yet another new, 'better', definition that only adds to the problem (Ramsay 2015). Taking into account Rapoport's (2004) 'waves of terrorism' concept, that terrorism changes over time and continuously moves through different 'waves', the trend throughout the first two decades of the 21st century of religious terrorism are considered the fourth wave. More recently however, particularly with the growth in far

right violent extremist attacks, it can be argued that a more realistic stance is that there are currently two waves overlapping, the fourth wave of religious terrorism and the new fifth wave of far right violent extremism covering ideologies including white nationalism; white supremacism; eco-nationalism and incel. Using Rapoport's model, (assuming that terrorism does change over time), the typology would need to be frequently updated to accommodate new forms of terrorism. The typology approach is also likely to fall foul of an issue that single definitions also encounter; that of the typology being decided largely by whoever happens to be the most powerful state/nation/group at the time of its creation. In addition, it is quite unlikely that a typology would be agreed upon on an international scale, returning the whole effort back to square one.

An argument can be made that the definition of terrorism is no longer the problem. The primary issue, in reality, is that no one appears to be able to apply the term consistently. As Schwenkenbecher states, "there is a tendency to apply the term 'terrorism' to a variety of incidents that do not actually have much in common apart from being disaffirmed" (2012, p. 9). This is supported by definitions of terrorism that encompass a huge variety of incidents. For example, the UK definition of terrorism given in the Terrorism Act 2000 is capable of covering essentially any damage that has been caused with the intention to influence a government. The government justifies such a wide definition by stating that either the Director of Public Prosecutions or the Attorney General must approve before any prosecutions are made (R v Gul UKSC 64 [30], 2013). This discretion allows for select operations carried out by British military abroad to be not labelled as terrorism.

At the time of writing, there have been a number of recent protests in London by Extinction Rebellion – who describe themselves as "an international movement that uses non-violent civil disobedience in an attempt to halt mass extinction and minimise the risk of social collapse" (Extinction Rebellion, 2019) – which have resulted in a number of protesters being arrested and charged with criminal damage. By the UK definition of terrorism, causing serious damage to property in an attempt to influence a government and advance a political cause is terrorism. There is also an argument to be made that the relative- and state-based definition of extremism in use by the UK government can also be stretched in a way that Extinction Rebellion falls under the umbrella of extremism. This study considers this further evidence that a definition of terrorism that ensures consistency of use, is narrow enough that it cannot be abused by government organisations, whilst also being wide enough that it is practical in terms of policing and criminal justice, is an unreasonable expectation.

However, as mentioned earlier Berger (2019) argues that although a definition cannot be agreed upon, the main properties of terrorism are well known and widely agreed upon: violence must be of a public nature; must be politically or ideologically motivated; the act must be committed with the intention to influence the public or government; and the act should involve indirect targeting, civilians as a common example. This mostly agrees with Groll's (2015) statement that the most widely accepted definition of terrorism amongst academics is 'an act of violence carried out by a non-state actor against a civilian target with some political aim'.

Despite this, Berger supports a change in perspective regarding terrorism and extremism. This change is driven by three parts: (1) Shunning relative- and state-based definitions of extremism and moving to a social identity definition; (2) Recognising terrorism is merely a tactic that is often used as part of violent extremism; and (3) the introduction of violent extremism as the third term in the triumvirate of radicalisation, extremism, and terrorism (Berger 2018). Violent extremism is defined as the "the belief that an ingroup's success or survival can never be separated from the need for violence against an outgroup" (Berger 2018, p. 172). Terrorism then becomes a strategy that is often used by violent extremists, thus separating the act of terrorism from the ideology behind it. By doing this, the basis for many previous disagreements are removed. The discussion then becomes whether an attack qualifies as violent extremism. The question of whether an ideology fits the framework of "the belief that an ingroup's success or survival can never be separated from the need for hostile action against an outgroup" (Berger 2018, p. 44) can be answered far more objectively than the question of whether an ideology fits the framework of "vocal or active opposition to fundamental British values" (Home Office 2011, p. 107). Together with the evidence against traditional approaches to defining radicalisation, extremism and terrorism, this study uses the following terms and definitions:

Extremism refers to the belief that an ingroup's success or survival can never be separated from the need for hostile action against an outgroup (Berger 2018, p. 44).

Violent Extremism refers to the belief that an ingroup's success or survival can never be separated from the need for violence against an outgroup (Berger 2018, p. 172).

Radicalisation is a process which is intended to lead to a person or group believing that their ingroup's success or survival can never be separated from the need for hostile action against an outgroup.

The next chapter introduces the areas used in this study. This includes the software that is used throughout the study, Linguistic Inquiry and Word Count (LIWC), and a dis-

cussion of its uses in previous studies researching extremist and terrorist literature. Social identity theory is also introduced as the theoretical framework to be used throughout the study, as well as a more detailed look at uncertainty-identity theory and its applications to extremism.

3 Literature Review: Introducing LIWC and Social Identity Theory

This chapter assesses the key areas in previous research that form the basis for this thesis. To begin, key literature that makes use of the LIWC software is reviewed to not only show how the software is suitable for this research, but also to identify any potential issues that are likely to be raised as a result from using the software. Following this, a review focused on applications of LIWC to studying extremist literature is carried out in order to identify LIWC categories that have been previously identified as important in extremists texts. A review of applications of LIWC to studying literature authored by lone actor violent extremists is also completed, again with the aim of identifying expected findings in the work carried out in this study. Building on the social identity approach to defining extremism, social identity theory, a key theory of explaining intergroup behaviour, is also introduced with the ideas of partial outgroup bias and prejudice as a group-based emotion receiving particular focus. Finally, following on from social identity theory, uncertainty-identity theory is also introduced as another potential theory that may be useful when attempting to explain extremism.

3.1 Linguistic Inquiry and Word Count (LIWC)

Linguistic Inquiry and Word Count (LIWC) is a text analysis tool that allows users to extract "social and psychological insights" (Pennebaker 2020) from written text. The functionality of LIWC is split into two parts, text analysis and dictionaries, where the dictionaries are further split up into various categories. Crudely put, the software reads every word, number and piece of punctuation in a given text and compares this against a pre-defined dictionary; the results for each category in the dictionary are then output as a percentage of total words. For a detailed explanation of how LIWC works, see Pennebaker, Boyd, et al. 2015; Pennebaker, Booth, et al. 2015a,b. There have been a number of versions, each with slight differences in their dictionaries. The dictionaries from LIWC2001 and LIWC2007 are included in LIWC2015, alongside the standard internal LIWC2015 dictionary. From this point forward, LIWC will refer to LIWC2015, and LIWC standard dictionary will refer to the standard internal dictionary that is supplied with LIWC2015. Where other versions or dictionaries are discussed this will be stated clearly. Where LIWC categories are referred to, they will be displayed in title case

and italicised.

The LIWC standard dictionary contains 80 word- and 12 punctuation-based categories. These categories, and the words within them, are created by a number of human judges. Table 3.1 below shows the 80 word-based categories that LIWC searches for when using the standard dictionary. The definitions of the four summary variables are given by Pennebaker (2020) and are as follows:

- *Analytical Thinking*: "Captures the degree to which people use words that suggest formal, logical, and hierarchical thinking patterns" (Pennebaker 2020).
- *Clout*: "Refers to the relative social status, confidence or leadership that people display through their writing or talking" (Pennebaker 2020).
- *Authenticity*: Whilst Pennebaker doesn't give an exact definition, the following description may be of use: "When people reveal themselves in an authentic or honest way, they are more personal, humble, and vulnerable." (Pennebaker 2020).
- *Emotional Tone*: This summary variable puts both the *Positive Emotion* and *Negative Emotion* categories described below into a single summary variable. The higher the value for *Emotional Tone*, the more positive the tone; a value less than 50 suggests a negative emotional tone.

Table 3.1: Table showing categories of words used by LIWC2015 (Pennebaker, Boyd, et al. 2015, pp. 3–4).

Category	Abbrv.	Examples	Words
Analytical Thinking	Analytic	-	-
Clout	Clout	-	-
Authentic	Authentic	-	-
Emotional Tone	Tone	-	-
Words/Sentence	WPS	-	-
Words > Six Letters	SixLtr	-	-
Dictionary Words	Dic	-	-
Total Function Words	funct	it, to, no, very	491
Total Pronouns	pronoun	I, them, itself	153
Personal Pronouns	ppronoun	I, them, her	93
1st-Person Singular Pronouns	i	I, me, mine	24
1st-Person Plural Pronouns	we	we, us, our	12

2nd-Person Pronouns	you	you, your, thou	30
3rd-Person Singular Pronouns	shehe	she, her, him	17
3rd-Person Plural Pronouns	they	they, their, they'd	11
Impersonal Pronouns	ipron	it, it's, those	59
Articles	article	a, an, the	3
Prepositions	prep	to, with, above	74
Auxiliary Verbs	auxverb	am, will, have	141
Common Adverbs	adverb	very, really	140
Conjunctions	conj	and, but, whereas	43
Negations	negate	no, not, never	62
Common Verbs	verb	eat, come, carry	1000
Common Adjectives	adj	free, happy, long	764
Comparisons	comp	greater, best, after	317
Interrogatives	interrog	how, when, what	48
Numbers	number	second, thousand	36
Quantifiers	quant	few, many, much	77
Affective Processes	affect	happy, cried	1393
Positive Emotion	posemo	love, nice, sweet	620
Negative Emotion	negemo	hurt, ugly, nasty	744
Anxiety	anx	worried, fearful	116
Anger	anger	hate, kill, annoyed	230
Sadness	sad	crying, grief, sad	136
Social Processes	social	mate, talk, they	756
Family	family	daughter, dad, aunt	118
Friends	friend	buddy, neighbor	95
Female	female	girl, her, mom	124
Male	male	boy, his, dad	116
Cognitive Processes	cogproc	cause, know, ought	797
Insight	insight	think, know	259
Causation	cause	because, effect	135
Discrepancy	discrep	should, would	83
Tentative	tentat	maybe, perhaps	178
Certainty	certain	always, never	113
Differentiation	differ	hasn't, but, else	81
Perceptual Processes	percept	look, heard, feeling	436
See	see	view, saw, seen	126
Hear	hear	listen, hearing	93

Feel	feel	feels, touch	128
Biological Processes	bio	eat, blood, pain	748
Body	body	cheek, hands, spit	215
Health	health	clinic, flu, pill	294
Sexual	sexual	horny, love, incest	131
Ingestion	ingest	dish, eat, pizza	184
Drives	drives	-	1103
Affiliation	affiliation	ally, friend, social	248
Achievement	achieve	win, success, better	213
Power	power	superior, bully	518
Reward	reward	take, prize, benefit	120
Risk	risk	danger, doubt	103
Past Focus	focpast	ago, did, talked	341
Present Focus	focpresent	today, is, now	424
Future Focus	focfuture	may, will, soon	97
Relativity	relativ	area, bend, exit	974
Motion	motion	arrive, car, go	325
Space	space	down, in, thin	360
Time	time	end, until, season	310
Work	work	job, majors, xerox	444
Leisure	leisure	cook, chat, movie	296
Home	home	kitchen, landlord	100
Money	money	audit, cash, owe	226
Religion	relig	altar, church	174
Death	death	bury, coffin, kill	74
Informal Language	informal	-	380
Swear Words	swear	fuck, damn, shit	131
Netspeak	netspeak	btw, lol, thx	209
Assent	assent	agree, OK, yes	36
Nonfluencies	nonflu	er, hm, umm	19
Fillers	filler	Imean, youknow	14

Table 3.2 below shows the results of preliminary analysis carried out by Pennebaker et al (2015) of a collection of data sets taken from various studies. The data set as a whole is made up 37,295 blogs, 6,179 pieces of expressive writing, 875 novels, 3,232 transcripts of natural speech recordings, 34,929 articles from The New York Times, and 35,269 tweets.

For further details on the data set see Pennebaker et al (2015, pp. 9–10).

Table 3.2: Table showing categories of words used by LIWC2015 (Pennebaker, Boyd, et al. 2015, pp. 3–4, 10–12), mean values and standard deviation (SD) for each category taken from control data, and the internal consistency of each category.

Category	Mean (SD)	Internal Consistency (Corrected α)
Word Count	11921.82 (10274.32)	-
Analytical Thinking	56.34 (17.58)	-
Clout	57.95 (17.51)	-
Authentic	49.17 (20.92)	-
Emotional Tone	54.22 (23.27)	-
Words/Sentence	17.40 (16.38)	-
Words > Six Letters	15.60 (3.76)	-
Dictionary Words	85.18 (5.36)	-
Total Function Words	51.87 (5.13)	0.24
Total Pronouns	15.22 (3.61)	0.67
Personal Pronouns	9.95 (3.02)	0.61
1st-Person Singular Pronouns	4.99 (2.46)	0.81
1st-Person Plural Pronouns	0,72 (0.83)	0.82
2nd-Person Pronouns	1.70 (1.35)	0.70
3rd-Person Singular Pronouns	1.88 (1.53)	0.85
3rd-Person Plural Pronouns	0.66 (0.60)	0.78
Impersonal Pronouns	5.26 (1.62)	0.71
Articles	6.51 (1.79)	0.23
Prepositions	12.93 (2.11)	0.18
Auxiliary Verbs	8.53 (2.04)	0.54
Common Adverbs	5.27 (1.61)	0.82
Conjunctions	5.90 (1.57)	0.50
Negations	1.66 (0.86)	0.71
Common Verbs	16.44 (2.93)	0.23
Common Adjectives	4.49 (1.30)	0.19
Comparisons	2.23 (0.95)	0.35
Interrogatives	1.61 (0.76)	0.57
Numbers	2.12 (2.07)	0.83
Quantifiers	1.61 (0.76)	0.64
Affective Processes	5.57 (1.99)	0.57

Positive Emotion	3.67 (1.63)	0.64
Negative Emotion	1.84 (1.09)	0.55
Anxiety	0.31 (0.32)	0.73
Anger	0.54 (0.59)	0.53
Sadness	0.41 (0.40)	0.70
Social Processes	9.74 (3.38)	0.86
Family	0.44 (0.63)	0.88
Friends	0.36 (0.40)	0.60
Female	0.98 (1.26)	0.87
Male	1.65 (1.34)	0.87
Cognitive Processes	10.61 (3.02)	0.92
Insight	2.16 (1.08)	0.84
Causation	1.40 (0.73)	0.67
Discrepancy	1.44 (0.80)	0.76
Tentative	2.52 (1.09)	0.83
Certainty	1.35 (0.70)	0.73
Differentiation	2.99 (1.18)	0.78
Perceptual Processes	2.70 (1.20)	0.55
See	1.08 (0.78)	0.84
Hear	0.83 (0.62)	0.69
Feel	0.64 (0.52)	0.65
Biological Processes	2.03 (1.39)	0.71
Body	0.69 (0.64)	0.87
Health	0.59 (0.65)	0.37
Sexual	0.13 (0.30)	0.78
Ingestion	0.57 (0.83)	0.92
Drives	6.93 (2.03)	0.80
Affiliation	2.05 (1.28)	0.80
Achievement	1.30 (0.82)	0.81
Power	2.35 (1.12)	0.76
Reward	1.46 (0.81)	0.69
Risk	0.47 (0.41)	0.68
Past Focus	4.64 (2.06)	0.64
Present Focus	9.96 (2.80)	0.66
Future Focus	1.42 (0.90)	0.68
Relativity	14.26 (3.18)	0.86
Motion	2.15 (1.03)	0.77

Space	6.89 (1.96)	0.83
Time	5.46 (1.81)	0.79
Work	2.56 (1.81)	0.93
Leisure	1.35 (1.08)	0.86
Home	0.55 (0.63)	0.83
Money	0.68 (0.83)	0.90
Religion	0.28 (0.57)	0.91
Death	0.16 (0.29)	0.79
Informal Language	2.52 (1.65)	0.84
Swear Words	0.21 (0.37)	0.83
Netspeak	0.97 (1.17)	0.82
Assent	0.95 (0.72)	0.39
Nonfluencies	0.54 (0.49)	0.69
Fillers	0.11 (0.27)	0.27

3.2 Applications of LIWC to Extremism

This section summarises the existing literature that has made use of LIWC2007 and LIWC2015 when investigating extremist texts gathered from a variety of sources including forums such as Stormfront; propaganda material such as Dabiq; and manifestos from lone actor violent extremists such as Anders Breivik and Dylann Roof.

Pennebaker and Chung (2009) first use LIWC2007 to investigate the linguistic styles in Al-Qaeda texts, comparing the styles of Osama bin Laden and Ayman al-Zawahiri to other terrorist groups, with a focus on function words and emotive words. Building on Seyle and Pennebaker's (2004) earlier finding that *Third Person Plural Pronouns* are the best single indicator that a text is extremist in nature, Pennebaker and Chung found that both bin Laden and al-Zawahiri use more *Third Person Plural Pronouns* than other terrorist groups, and suggest that Al-Qaeda defines "itself to a large degree by the existence of an oppositional group" (2009, p. 3). The focus on third person plural pronouns and their links to outgroups is a common theme throughout the literature and is the first and most obvious link to social identity theory. The significantly higher usage of *Negative Emotion* words observed by Pennebaker and Chung is also a common theme throughout previous research. LIWC breaks down *Negative Emotion* words into sub-categories of *Anger*, *Anxiety* and *Sadness* words; in this case *Anger* words make up the large majority of the increase in *Negative Emotion* words found in the Al-Qaeda transcripts authored by bin Laden and al-Zawahiri. Miller (2019), in his investigation of Pennebaker and Chung's 2009 study, questions the conclusion that *Third Person Plural Pronouns* are a good indicator that text is extremist in nature. Upon closer examination of the data from bin Laden, Miller finds uses of third person plural pronouns did not always refer to the assumed outgroup. Rather, bin Laden used third person plural pronouns in his speeches to refer to various groups of Muslims, including true believers in the Prophet; those who struggled with their faith; and those who had abandoned their faith.

In a later study, Pennebaker (2011) continued to focus on pronouns and emotive words in his comparison of two violent extremist groups and two non-violent extremist groups. The two violent groups, al-Qaeda Central (AQ) and al-Qaeda in the Arabian Peninsula (AQAP), use more *Personal Pronouns* (7.84% and 8.14% respectively) than the two non-violent groups Hizb ut-Tahrir (4.96%) and the Movement for Islamic Reform in Arabia (3.24%). AQ and AQAP also use significantly more emotive words, measured by the *Affective Processes* category in LIWC. There are a number of LIWC categories in which the violent and non-violent groups differ significantly, which Pennebaker refers to as the "ter-

ror effect" (2011, p. 95). There were also significant differences between the two groups in terms of the LIWC2007 summary variables. Most notably, AQ and AQAP are significantly less categorical and cognitively complex in their language than the two non-violent groups. Categorical thinking is positively correlated to "usage of articles, prepositions, relativity words, and big words" (2011, p. 97), and cognitive complexity is positively correlated to usage of exclusive words, negations, insight and causal words.

In a study of three sub-forums of the once popular white supremacist forum Stormfront, Figea, Kaati and Scrivens (2016) found that the *Anger* and *Third Person Plural Pronoun* categories of LIWC are significant when classifying posts as containing racist language or showing aggression towards an outgroup. Similarly, in a study of Swedish anti-immigration focused alternative media (defined as media that differ from established types of media in terms of the content, production or distribution), Kaati et al (2016) found that whilst the anti-immigration media was as emotive as regular media, alternative media had a higher usage of *Negative Emotion* words and lower usage of *Positive Emotion* words than regular media. The alternative media also used *Third Person Plural Pronouns* at a significantly higher rate than their regular media counterparts. In a separate study of a Swedish anti-immigration forum, usage rates of *First Person Singular Pronouns* and *Third Person Plural Pronouns* were significant in classifying a forum user that identified heavily with the forum community. Also found to be important were words related to inclusivity, exclusivity, tentativeness and a focus on the past (Shrestha, Kaati, and Cohen 2017).

In a study of the alt-right subreddit r/alt-right, Grover and Mark (2019) used LIWC to measure fixation and group identification in the subreddit comments. Frequency analysis is combined with term frequency-inverse document frequency to identify the most commonly used terms and the most important terms used in the alt-right subreddit, together these give the most common topics and focal points in the subreddit. These results are then combined with LIWC to measure levels of fixation over a six-month period. By using the common topics to filter comments in the subreddit Grover and Mark were able to find an increasingly negative tone towards the objects of fixation over the same six month period. At the same time, there was an increase in the proportion of hate speech and offensive language in the subreddit comments. Group identification was also measured by analysing usage rates of *First-* and *Third Person Plural Pronouns* in the subreddit comments, although the level of group identification in the subreddit "remained relatively stable over time" (Grover and Mark 2019, p. 201).

As part of a study investigating Jihadi radicalisation on twitter, LIWC was used to identify significant differences in the tweets of ISIS supporters versus those from a control group of users. As expected, pronoun usage was a key factor, with *First Person Singular*; *First Person Plural*; *Second Person* and *Third Person Plural Pronouns* all found to be significant. Emotive words were again found to be important with *Anger* and *Emotional Tone* found to be significant. Alongside these, the LIWC categories *Power*, *Death* and words longer than six letters (*Sixltr*) were found to be significant, as well as a number of custom dictionaries relevant to the study (Torregrosa and Panizo 2018). Vergani and Bluic (2018) also make use of custom dictionaries to compare use of religious words in issues of *Dabiq* and *Inspire*, the magazines of ISIS and al-Qaeda respectively, finding that *Dabiq* uses more religious Arabic words than *Inspire*. The custom dictionaries were made up of religious Arabic words that were also in the 500 most frequently used words in each magazine, before being manually coded into smaller categories for analysis.

LIWC was again used by Torregrosa et al (2019) to investigate a number of hypotheses regarding linguistic differences between ISIS supporters and random users on Twitter. It was hypothesised that the ISIS supporters would: use more words in the LIWC categories *Power*, *Anger*, *Death*, *Religion*, *Certainty* and words longer than six letters (*Sixltr*); use more *First-* and *Third Person Plural Pronouns* whilst using less *First Person Singular Pronouns*; and use more *Negative Emotion* words than *Positive Emotion* words, and thus score lower than the random users in the *Emotional Tone* summary variable. It was found that, compared to the control group of random Twitter users, ISIS supporters used more words in the following LIWC categories: *Anger*, *Death*, *Religion*, *Certainty* and *Sixltr*. As expected, ISIS supporters used significantly more *Third Person Plural Pronouns* but less *First Person Singular* and *Second Person Pronouns*. Finally, ISIS supporters used significantly less *Positive Emotion* words than the control group and scored significantly lower in the *Emotional Tone* summary variable, which shows that the tweets of ISIS supporters "had a significantly higher negative tone than the random group" (Torregrosa, Thorburn, et al. 2019, p. 9).

A number of other studies have also used LIWC to study linguistic differences in the tweets of users from various groups. Warmsley (2017) used the LIWC categories of *Negative Emotion*, *Positive Emotion*, *Anger*, *Anxiety* and *Certainty* to measure affect in Twitter users as part of a larger study into classifying hate speech. Alizadeh et al (2017) uses the same categories as part of an investigation into the application of moral foundation theory to extremism. Moral foundation theory suggests that differing psychological profiles in left- and right-wing extremists "can be attributed to their different empathic responses to

different policy issues" (Alizadeh et al. 2017, p. 7). The study found that compared to random users, followers of left-wing extremists used significantly less *Positive Emotion* and significantly more *Negative Emotion*; and followers of right-wing extremists used significantly more *Negative Emotion*. It is argued that "these ideological differences in emotional profiles suggest that that the affective differences reflect the ideological direction of extremists, not their militancy" (Alizadeh et al. 2017, p. 7). The study also analysed the tweets using the IBM Watson Personality Insights service to investigate whether there were differences in the big five personality traits: agreeableness, conscientiousness, extroversion, neuroticism and openness. The results suggested that "personality appears to be more closely associated with militancy than with the ideological direction to which militancy is applied" (Alizadeh et al. 2017, p. 7).

In a follow-up study, Alizadeh et al (2019) again use the LIWC categories of *Certainty*, *Anxiety*, *Positive Emotion* and *Negative Emotion* to measure certainty, anxiety and happiness respectively. The study found that, based on LIWC analysis, there are no significant differences in the level of *Certainty* shown by liberals, conservatives or left- and right-wing extremists in their tweets. With regards to *Anxiety*, "the results suggest that right-wing extremists score significantly lower on text-based indicators of anxiety than liberals and left-wing extremists" (Alizadeh et al. 2019, p. 16). In terms of happiness, the study found no significant difference between conservatives and liberals in their use of *Positive* or *Negative Emotion* words. In line with previous studies however, Alizadeh et al (2019) found that extremists use less *Positive Emotion* words and more *Negative Emotion* words compared to non-extremists.

In summary, there is a clear pattern throughout the previous research in this area in terms of which LIWC categories are investigated and which categories are found to be significant when identifying extremist text. Given the ease of using LIWC, this study finds no clear reason not to investigate all the categories available, although based on previous results there are a number of categories for which the results must be given special attention. That is: (1) *Positive Emotion*; (2) *Negative Emotion*; (3) *Third Person Plural Pronouns*; (4) *First Person Plural Pronouns*; (5) *First Person Singular Pronouns*; (6) *Anger*; (7) *Anxiety*; (8) *Certainty* and (9) words longer than six letters (*Sixltr*).

3.3 Applications of LIWC to Lone Actor Violent Extremism

In a study of lone actor violent offenders (most but not all of the offenders are easily defined as extremist), Kaati, Shrestha and Cohen investigate eight LIWC categories that make up the "terrorist mind" (2016, p. 2). These are: (1) words longer than six letters (*Sixltr)*; (2) *Third Person Plural Pronouns*; (3) *Positive Emotion*; (4) *Negative Emotion*; (5) *Anger*; (6) *Friends*; (7) *Certainty* and (8) *Power*. This list closely resembles the list of themes commonly found to be significant when classifying extremist text in other research. Based on these results, this study makes an assumption that lone actor violent offenders share many of the same characteristics with extremists and terrorists, which is at odds with the conclusion of Brynielsson et al; that is, that a key issue in detecting lone actor violent extremists is "that there is no consistent or typical profile of a lone wolf" (2013, p. 204). This does not suggest that the linguistic profiles of lone actor violent offenders should not be compared to that of terrorists, where a clear ideology is involved it is the obvious and logical first step; however, the assumption that lone actor violent extremists are similar to terrorists is not sufficient reason to focus on only eight categories from LIWC. This is also the first study discussed to make use of manifestos authored by lone actor violent offenders. The manifestos include a variety of ideologies and motivations, from the usual white nationalist (Anders Breivik), white supremacist (Dylan Roof, James von Brunn) and Islamic extremist (Nidal Malik Hasan) ideologies to the slightly less usual motivation of wanting to create a smiley face on the map of America by pipe bombing mailboxes (Lucas Helder). School shooters are not included, although given the wide range of motivations and ideologies the reason for the exclusion is not clear and obvious. Results indicated that there are eight key linguistic factors for analysing texts from possible lone offenders, these are: "a lower frequency of words related to positive emotions and friends and a higher frequency of words related to negative emotion, anger, power, certainty, third person plural and big words"" (Kaati, Shrestha, and Cohen 2016, p. 7). Concluding, Kaati, Shrestha and Cohen state that "computerized text analysis can be used to automatically assess texts written by lone offenders prior to their engagement in violent acts" (2016, p. 7).

In a similar study investigating the identification of violent lone offenders based on their written communication, Kaati, Shrestha and Sardella (2016) compared texts authored by a variety of school shooters, ideologically motivated offenders and mass murderers against texts gathered from blogs, Stormfront and Boards.ie (an Irish discussion forum). When trying to distinguish the violent lone offender texts from the set of other texts, ten LIWC categories were found to be the most important (inferring that the sets of text

being compared were significantly different in these categories). These are: *Article*, *Personal Pronouns*, *Negative Emotions*, *See*, *Total Pronouns*, *Prepositions*, *Anger*, *Differentiation*, *Affective Processes* and *Perceptual Processes*. Using all LIWC categories, 28.3% of the lone violent offender texts were incorrectly classified as non-extremist; whilst 5.9% of the other texts were classified as extremist. When using only the ten most important features 23.9% of the lone violent offender texts were classified as non-extremist and 10.4% of the other texts were classified as extremist. Kaati, Shrestha and Sardella (2016) view the results from using the most important features as an improvement, suggesting a far greater weight has been placed on correctly classifying violent lone offender text than on incorrectly classifying seemingly innocent texts. That is, lowering the false negative rate at the cost of increasing the false positive rate is seen as an improvement. This brings to the fore the vital moral, ethical and political question of how many false positives are acceptable in order to correctly classify as many extremist texts as possible. Table 3.3 below shows the important LIWC categories found by the four experiments conducted by Kaati, Shrestha and Sardella (2016), as well as the set of commonly seen features set out in the summary of the previous section.

Whilst there are a number of categories that appear multiple times in Table 3.3, there is also a high level of discrepancy between the important categories found by Kaati, Shrestha and Sardella (2016) and those seen commonly throughout previous literature. This could suggest that the categories seen as important in the previous literature aren't as important when it comes to lone actors. Taking *Third Person Plural Pronouns* as an example, which Seyle and Pennebaker (2004) identified as the single best predictor of extremism, are found to be important in only one of Kaati, Shrestha and Sardellas' experiments, comparing lone actor texts to blogs. This may infer that the data set of lone actor texts used in the experiments are not authored by extremists; however many of those included in the data set are indeed extremists, such as Anders Breivik, Dylann Roof and James von Brunn. There are a number of texts authored by school shooters in the data set, and as school shooters are not traditionally identified as extremists this may explain the discrepancy.

Alternatively, the results of Kaati, Shrestha and Sardella's (2016) experiments may merely suggest more about the texts being compared against rather than the data set of lone actor texts themselves. As an example, that *Third Person Plural Pronouns* is not an important category when comparing lone actor texts to Stormfront texts may suggest that Stormfront also has a high level of *Third Person Plural Pronoun* usage which, given the evidence linking *Third Person Plural Pronouns* with extremism, would agree with com-

Table 3.3: Table showing important LIWC categories found by Kaati, Shrestha and Sardella (2016) alongside the set of common features seen in Section 2.2

Research	Important Features (LIWC Categories)
Lone actor texts vs. blogs + Stormfront + Boards.ie (Kaati, Shrestha, and Sardella 2016)	*Total Pronouns*; *Personal Pronouns*; *Articles*; *Prepositions*; *Affective Processes*; *Negative Emotion*; *Anger*; *Differentiation*; *Perceptual Processes*; *See*
Lone actor texts vs. blogs (Kaati, Shrestha, and Sardella 2016)	*Function Words*; *Third Person Plural Pronouns*; *Impersonal Pronouns*; *Prepositions*; *Negative Emotion*; *Anger*; *Certainty*; *Perceptual Processes*; *Relativity*; *Time*; *Leisure*; *Informal Language*
Lone actor texts vs. Stormfront texts (Kaati, Shrestha, and Sardella 2016)	*Personal Pronouns*; *Articles*; *Prepositions*; *Quantifiers*; *Negative Emotion*; *Cognitive Processes*; *Differentiation*; *See*; *Biological Processes*; *Time*
Lone actor texts vs. Boards.ie texts (Kaati, Shrestha, and Sardella 2016)	*Personal Pronouns*; *Articles*; *Auxiliary Verbs*; *Affective Processes*; *Negative emotion*; *Anger*; *Social Processes*; *Differentiation*; *See*; *Assent*
Previous literature reviewed in section 2.2	Words longer than six letters (*Sixltr*); *First Person Plural Pronouns*; *First Person Singular Pronouns*; *Third Person Plural Pronouns*; *Positive Emotion*; *Negative Emotion*; *Anxiety*; *Anger*; *Certainty*

mon sense. Similarly, Boards.ie is a "public discussion where things like hobbies, politics and sports is discussed" (Kaati, Shrestha, and Sardella 2016, p. 1056). Politics and sports discussion can be relatively tribal and group-based, so a higher than normal usage rate of *Third Person Plural Pronouns* might be expected.

Unfortunately, it is not known how the categories are important as this information is not included in the results of Kaati, Shrestha and Sardellas' (2016) study. That is, in the experiment comparing lone actor texts and blogs, it is unknown whether *Third Person Plural Pronouns* is an important category because lone actors use significantly more, or significantly less. Based on previous research a suggestion can be made (it is likely that lone actors use more *Third Person Plural Pronouns*), but for lesser seen categories such

as *Perceptive Processes*, *Relativity*, etc., the same method cannot be relied upon.

In another study, Baele (2017) investigated whether lone actor terrorists differ in their emotions and cognition when compared to a variety of control groups, including a group of emotional writings and the writings of Gandhi, Martin Luther King and Nelson Mandela, who are considered a group of non-violent radical activists (referred to as *Peacemen* in the study). When compiling the writings of lone actor terrorists used Baele is far more selective than previous studies, discarding authors who did not produce any ideological writings and whose first language was not English. Baele uses Welch's t-test to compare the writings from each group of authors as the test is "intended for use with samples having possibly unequal sizes and variances" (2017, p. 459). However, since Welch's t-test still assumes normality and given the small size of the groups of authors, a test for normality should have also been undertaken for completeness.

Baele investigated two hypotheses: that lone actor terrorists are "characterized by very high level of negative emotions, especially anger, which differentiate them from nonviolent individuals" (2017, p. 455); and that they are also "characterized by a lack of cognitive sophistication or flexibility" (2017, p. 455). The study found strong evidence in support of the first hypothesis, with the lone actor terrorists using significantly less *Positive Emotion* words, significantly more *Negative Emotion* words and over twice the proportion of *Anger* words compared to the Peacemen group. Baele also finds that lone actor terrorists are characterised by "high levels of cognitive sophistication and surprisingly low levels of cognitive inflexibility" (2017, p. 464). The most interesting conclusion from this study however is the evidence against the use and treatment of the category *Lone Actor Terrorists* as a homogeneous group. Baele finds that some of the lone actor terrorists use high levels of *First Person Singular Pronouns*, which would indicate that "self-centredness and narcissim, among other traits, increase the likelihood of embarking in terrorist activities." In opposition to this however is the finding that other lone actor terrorists use very low levels of *First Person Singular Pronouns*, showcasing the clear diversity amongst a group that, generally speaking, is treated as relatively homogeneous. There have also been cases of groups exaggerating their membership, or individuals claiming group membership; Anders Breivik is a good example of this with his so-called 'Knights Templar' group, with no evidence being found that such a group exists or existed in the manner that Breivik claims.

3.4 Social Identity Theory

This section will provide an overview of social identity theory and its key principles and components. Increased focus is given to the concepts of partial outgroup bias and prejudice as a group-based emotion. The aim of this section is to provide a level of context before moving on to discussing key theories and ideas, such as uncertainty-identity theory, later in this study. Partial outgroup bias and prejudice as a group-based emotion are discussed as a foundation to work carried out later in this study; in Chapters 7 and 8, respectively.

Social identity theory is a social psychological theory of intergroup relations that describes them as produced by social cognition principles operating within a group context. As per Operario and Fiske (2000, p. 42) there are three core points of social identity theory:

1. People are motivated to maintain a positive social identity;
2. The self-concept derives largely from group identification;
3. People establish positive social identities by comparing the ingroup favourably against outgroups.

To maintain a positive self-concept then, a positive group identity must be maintained. This is achieved through the enhancement of the ingroup and negative comparison of outgroups. Social identity theory separates an individual's social identity from their personal identity. In most cases, an individual will identify with a number of groups, some smaller and specific, some broader, and the strength of this identification is likely to change over time. These group identifications can be anything from being a supporter of Manchester United to being a student or being a supporter of a political party; all provide opportunities for group identification in the right context. If social identity is prescribed by group identification then, and an individual identifies with multiple groups, then that individual must have multiple social identities. Under social identity theory, these social identities are activated as necessary dependent on the context at the time (Sherman, Hamilton, and Lewis 2000). Alongside these potentially more temporary types of group identification are "chronic group identifications that are always potentially accessible" (Sherman, Hamilton, and Lewis 2000, p. 92); these are categories such as race, gender, and nationality. Each social identity an individual has is said to have a social identity value; this refers to the psycho- and sociological benefits of group membership for the individual. When an individual identifies with a group, a process of depersonalisation takes place, as the individual's beliefs and behaviours become those of the group and other group members.

This is enhanced by the meta-contrast principle — "where intergroup differences tend to be perceived as larger than intragroup differences that we tend to categorize self as 'we' instead of 'I' and see the included other(s) as similar rather than different" (Turner et al. 1994, p. 457). The meta-contrast principle is closely related to the concept of entitativity — "the property of a group that makes it seem like a coherent, distinct and unitary entity" (Hogg and Vaughan 2018, p. 432, see also Campbell 1958). High entitativity has been found to be related to high social identity value (Lickel et al. 1998, as cited in Sherman, Hamilton, and Lewis 2000), decreased diversity of members (McGarty et al. 1995), and an increased likelihood of negative actions toward outgroups (Abelson et al. 1998). Entitativity, and its links to extremist groups, is discussed further in Section 3.5.1.

Self-categorisation theory is often found alongside social identity theory, with the two theories together referred to as the 'social identity approach'. Self-categorisation, according to Turner et al (1994) is the key process in the interaction between the individual and the social. This expands on Tajfel's (1978) earlier argument that categorisation is the process of defining the self in a social context. In self-categorisation theory, categorisation is viewed as a "dynamic, context-dependent process determined by comparative relations within a given context" that aligns "the person with the realities of the social context" (Oakes, Haslam, and Reynolds 2000, p. 58). From the meta-contrast principle, it is predicted that any set of items is more likely to be identified as a group of items if the variance within the set is less than the variance between the set and others in that particular context. Thus, categorisation is dependent on the context in which it is taking place. The most important implication from such a conclusion is that since categorisations are contextually dependent, "self-categories are not fixed, absolute properties of the perceiver but relative, varying, context-dependent properties" (Turner et al. 1994, p. 456). If categorisations are contextually dependent, then it would make sense that group prototypes are also context-dependent. Thus, self-categorisation agrees with Rosch (1978) that group prototypes are not fixed and instead suggests context-dependent assessments of prototypicality rather than a fixed, context-independent, prototype. Prototypicality can be defined, based on the meta-contrast principle, as "the more a group member differs from outgroup members and the less he or she differs from other ingroup members, the more that individual will be perceived as prototypical of the group" (Oakes, Haslam, and Reynolds 2000, p. 60).

As well as group prototypes, self-categorisation theory infers that stereotypes are also context-dependent. Traditionally, stereotypes were considered to be fixed concepts based on some culturally learned information about a group. It was also thought that activation

of stereotypes was inevitable on intergroup contact. Tajfel (1969) viewed categorisation and stereotyping as essentially the same, in that categorisation, via the meta-contrast principle, emphasises differences between groups and similarities within groups. Thus, "if perception without categorisation is impossible, and category differentiation is a consequence of such perception, stereotyping is inevitable" (Lepore and R. Brown 2000, p. 142). However, research by Gilbert and Hixon (1991) found that participants who were cognitively busy when presented with an Asian person were able to categorise correctly but did not show any evidence of the so-called inevitable stereotype activation expected. On this basis, Lepore and Brown argue that "categorisation is a necessary but not sufficient condition for the occurrence of stereotyping" (2000, p. 145).

Locke and Walker (2000) suggest a distinction between individual and social stereotypes. An individual stereotype is said to be a group stereotype held by a particular individual; whereas a social stereotype will be publicly-expressed and widely accepted. Although stereotypes are only part of the information an individual has about a group, they are closely related to prejudice against groups. Brown (1995) argues that any negative consequences of stereotypes are instances of prejudice and Smith (2000) argues for a different model of prejudice, one that views prejudice as group-based emotion. This model is discussed in more detail below.

3.4.1 Viewing Prejudice as Group-Based Emotion

This section discusses the idea of viewing prejudice as a group-based emotion. By reviewing relevant literature the possible implications of viewing prejudice in this way are also stated. Building on a foundation of social identity theory and appraisal theories of emotion, Smith (2000) suggests prejudice as group-based emotion as a contrasting alternative to the traditional views of prejudice. The traditional, attitude-based approach links prejudice to related key concepts such as stereotyping and discrimination in the following way:

> Specifically, the traditional attitude-based approach identifies a group stereotype as beliefs about an outgroup's positive or (usually) negative attributes, prejudice as the resulting positive or negative attitude toward the outgroup, and discrimination as attitude-driven behaviour toward the group (Smith 2000, p. 185).

Prejudice as group-based emotion links the same three key concepts in a different way:

> A stereotype is a set of appraisals of the outgroup in relation to the ingroup in the current situation. Prejudice is an emotional reaction to the outgroup triggered by its relevance to the perceiver's ingroup. Finally, discrimination is behaviour driven by an emotional action tendency (Smith 2000, p. 185).

Perhaps the most important advantage of Smith's approach is that prejudice is no longer rooted in stereotype. In the traditional view, prejudice is said to follow from outgroup stereotypes, and thus should be relatively constant across different contexts; however, prejudice has been found to be largely context-specific (Smith 2000). A variety of emotions may follow outgroup appraisals in various contexts; fear, disgust and resentment can all be caused by negative outgroup appraisals. It is important to note that, even in this model of prejudice as group-based emotion, emotional reactions to individual outgroup members work alongside emotional reactions to the collective outgroup to contribute to prejudiced behaviour toward the outgroup (Smith 2000). Smith's model is supported by a number of theories and studies. Research on symbolic racism shows, according to Smith, that "group more than individual interests are politically relevant" (Smith 2000, p. 189). The model is also supported by Runciman's (1966) theory of relative deprivation. Pettigrew (1997) finds the effects of relative deprivation are significantly increased at group-level compared to individual level, and that the largest effect is found when the group-level comparison contains an affective element. Thus there is a good level of initial evidence in support of Smith's view of prejudice as group-based emotion. The next section discusses predictions of outgroup bias when categorisation occurs under multiple category dimensions.

3.4.2 Partial Outgroup Bias

This section discusses what happens when categorisation takes place with multiple available category dimensions; with a focus on the effect this has on intergroup bias. Also covered are the numerous predictions regarding how a full outgroup is expected to be treated compared to a partial outgroup of a full ingroup.

As noted previously, self-categorisation theory states that the categorisation process is contextually dependent. An individual will have multiple characteristics, attitudes and attributes upon which they can be categorised (Vescio et al. 2000). When categorisation occurs on the basis of a single categorisable dimension this is referred to as simple categorisation conditions (Vescio et al. 2000). This section focuses on crossed-categorisation conditions, which involve two categorisable dimensions. These two dimensions can be

displayed such that there are four possible possible groups.

Table 3.4: Table showing the four possible subgroups under crossed-categorisation conditions with race and gender as category dimensions.

		Race	
		Black	White
Gender	Male	Black Male	White Male
	Female	Black Female	White Female

From Table 3.4 above, there are three possible categorisation results (Vescio et al. 2000):

1. Full ingroup - Shares ingroup status on both dimensions
2. Partial outgroup - shares ingroup status on only one dimension
3. Full outgroup - Shares ingroup status on neither dimension

From the meta-contrast principle, differences within groups are minimised and differences between groups are emphasised. Under crossed-categorisation conditions this becomes considerably more complicated. From Table 3.4 above, taking a white male as an arbitrary example, the following categorisation options are available:

1. If categorisation takes place in a racial context, then under the meta-contrast principle the white male will:
   (a) Minimise differences between themselves and white females
   (b) Emphasise differences between themselves and black males and females.
2. If categorisation takes place in a gendered context, then under the meta-contrast principle the white male will:
   (a) Minimise differences between themselves and black males
   (b) Emphasise differences between themselves and white and black females.

In a crossed-categorisation context, where both category dimensions are used, the results are not particularly clear. This has implications for bias and discrimination in crossed-categorisation contexts. Deschamps and Doise (1978) argue that category accentuation (increasing prominence of the category) processes are the basis of intergroup bias, and that this is effected by crossed-categorisation contexts. There do exist however, a

number of predictions on how crossed-categorisation contexts effect intergroup bias. Before discussing these predictions, for the sake of clarity, "categorisation along a single dimension results in the positive evaluation of ingroups ($+1$) and the negative evaluation of outgroups (-1)" (Vescio et al. 2000, p. 117).

Brown and Turner's (1979) social identity model of intergroup bias in crossed-categorisation contexts suggests that the self-esteem enhancing need to differentiate ingroup and outgroup leads to bias and discrimination towards all outgroups, partial or otherwise. Brown and Turner suggest that the easiest prediction is to "assume that the effects of each single categorisation combine additively" (1979, p. 373). A full ingroup then is evaluated positively on two categorisations; a full outgroup is evaluated negatively on both categories; and partial outgroups are evaluated positively in one category and negatively in the other, and thus as a whole are evaluated neutrally.

Vanbeselaere's (1991) category differentiation (elimination) prediction suggests that when accentuation processes across multiple dimensions are in conflict they will cancel each other out. Thus, "the elimination of bias toward partial outgroups and increased bias toward double outgroup is expected" (Vescio et al. 2000, p. 119). The category differentiation (reduction) prediction is very similar, albeit weaker; instead of eliminating bias toward partial outgroups, under this prediction it is only reduced. This results in the same evaluations as the social identity prediction.

The category conjunction predictions suggest that "categorisation on available dimensions combine interactively" (Vescio et al. 2000, p. 120). From Brewer et al (1987) individuals would be classified as ingroup members only if they are according to the available group dimensions. In a situation where identity is perceived to be under a high level of threat, category conjunction (dissimilarity) predictions state that partial outgroups are discriminated against at the same level as full outgroups. In contrast, when the threat to identity is seen to be low, category conjunction (similarity) predictions state that partial outgroups will be evaluated as positively as the full ingroup, but that the full outgroup will still be evaluated negatively.

When the available category dimensions differ in salience the dominant dimension may be the sole basis for categorisation (Brewer et al. 1987). This is referred to the as the category dominance prediction, with the non-dominant category dimensions being ignored during evaluation. Hierarchical ordering predictions state that "classification according to one dimension is dependent upon prior categorisation along the other di-

mension" (Vescio et al. 2000, p. 121). Hierarchical ordering predictions are said to be the combination of two previous predictions, category dominance and category conjunction (Hewstone, Islam, and Judd 1993). Table 3.5 below shows the evaluative results that would be expected from each of the above predictions.

Table 3.5: Table showing the predicted evaluative results expected under a variety of predictive models of partial outgroup bias in crossed-categorisation contexts. Negative values show some level of negative bias and discrimination toward that group.

Prediction Model	Full Ingroup	Partial Outgroup		Full Outgroup
		In-Out	Out-In	
Social Identity	+2	0	0	-2
Category Differentiation				
(Elimination)	+1	+1	+1	-3
(Reduction)	+2	0	0	-2
Category Conjunction				
(Dissimilarity)	+3	-1	-1	-1
(Similarity)	+1	+1	+1	-3
Category Dominance	+1	+1	-1	-1
Hierarchical Ordering	+4	0	-2	-2

Despite none of these predictions being shown to be consistently correct, Hewstone et al. suggest that "it would seem more appropriate, in present theorising and future research, to concentrate on when and how specific models operate, rather than on which model is correct" (1993, p. 789). The next section looks at one of the sub-theories of social identity theory, Hogg's uncertainty-identity theory.

3.5 Uncertainty-Identity Theory

This section provides an overview of Michael Hoggs' uncertainty-identity theory as a foundation for further work in chapter 7 of this study.

As seen in the previous section discussing social identity theory, self-categorisation is vital to social identity, and this is explained with self-categorisation theory. Initially, the motivation to self-categorise was considered to be enhancement of self and self-esteem (Hogg 2007). Abrams and Hogg (1988, as cited in Hogg 2007) argue that individually focused self-esteem should not be too strongly linked to the collective-focused positive social identity, and thus should not be so immediately assumed as the motivator for social identity processes. This view has been supported by a number of more recent studies, listed by Hogg (2007, p. 71). In response to this, Hogg and Abrams suggested uncertainty reduction as a motivator for self-categorisation on the basis that "uncertainty is reduced by agreement with others who are categorised as similar to self - in other words common social category members" (1993, p. 186). Hogg (2007) argues that the motivational aspects of uncertainty are implicit in both Tajfel's initial discussions of social categorisation, albeit framed as a "search for coherence" (1969, p.92, as cited in Hogg 2007); and also in self-categorisation theory.

According to Hogg, "Uncertainty-identity theory rests on the motivational tenet that feeling uncertain about ones perceptions, attitudes, values, or feelings is uncomfortable" (Hogg 2007, p. 73). Individuals need to feel certain and secure in the world and where they belong in it, this in turn gives life meaning and informs one's behaviour (Hogg and Mullin 2000). Uncertainty on the other hand is "associated with reduced control over one's life" (Hogg and Mullin 2000, p. 253), and thus uncertainty reduction is pursued. For some individuals, the act of uncertainty reduction can be seen as a challenge, such that successfully reducing uncertainty is exhilarating; this should be seen as a a positive way of acting when presented with uncertainty. On the other hand, uncertainty can also cause a significant amount of anxiety and stress (Hogg 2007). Uncertainty-identity theory also provides scope for extremism and ideological conviction. When an individual is faced with uncertainty that is highly self-relevant, related to part of their identity, or particularly chronic, then Hogg (2009) suggests the motivation to reduce these types of uncertainty is very powerful, sometimes leading the individual to identify as part of an extreme group, or to identify with a chronic ingroup such as nationality, race, and gender.

The processes involved in uncertainty-identity theory are focused mostly on feelings

of uncertainty motivating processes from self-categorisation theory. When reducing uncertainty through group identification, group prototypes and depersonalisation are key. Depersonalisation, in the context of self-categorisation and uncertainty-identity theory refers to the attitudes, beliefs and behaviours of the individual being replaced by those of the group prototype (Hogg and Mullin 2000). In terms of stereotyping, this is essentially equivalent to an individual stereotyping themselves based on their ingroup, then conforming to said stereotype; this is also known as autostereotyping (Hogg 2007). By conforming to the norms of the ingroup, self-uncertainty is reduced as the individual's attitudes, beliefs, and behaviour are now those of the group. This process takes place across the group to various levels, such that the process of depersonalisation essentially "changes people so that they appear to agree more strongly with one another" (Hogg and Mullin 2000, p. 254). This is similar to social comparison theory (see Festinger (1954)) in that when individuals are unsure of their attitudes and beliefs, they identify with people similar to themselves such that they can make positive comparisons in order to attain affirmation that their attitudes and beliefs are correct.

Inherent in the discussion is that when an individual encounters uncertainty relating to their attitudes or beliefs, they will attempt to identify with a group which reduces these specific uncertainties. That is, when identifying with a group to reduce uncertainty, that group should be relevant to the particular uncertainty in that particular context for the most effective uncertainty reduction to take place. This leads Hogg to suggest that this is similar to the cognitive miser,[1] and motivated tactician,[2] models of social cognition, in that people "only expand cognitive energy resolving those uncertainties that are important or matter to us in a particular context" (2007, p. 73). Entitativity is also a key attribute when identifying groups for uncertainty reduction. High entitativity groups are better at reducing uncertainty than low entitativity groups as they "provide a clearer and more distinctive identity and associated ingroup prototype" (Hogg 2009, p. 222). The importance of group entitativity in uncertainty reduction is discussed further in the next section, as high group entitativity is strongly linked to extremism.

Hogg states the "the key features of uncertainty-identity theory can be captured by four broad premises" (2007, p. 111), these are summarised as follows:

1. "People are motivated to reduce or avoid feelings of uncertainty about themselves,

[1]Characterises people as using the least complex and demanding cognitions that are able to produce generally adaptive behaviours (Hogg and Vaughan 2018, p. 45).

[2]Characterises people as having multiple cognitive strategies available, which they choose among on the basis of person goals, motives and needs (Hogg and Vaughan 2018, p. 45).

and about their perceptions, judgments, attitudes, and behaviours that relate to themselves, their interactions with other people, and their place in social context" (Hogg 2007, pp. 111–112)

2. "Social categorisation reduces or protects from uncertainty because it depersonalises perception to conform to one's in-group and out-group prototypes, such that one 'knows' how others will behave" (Hogg 2007, p. 112)

3. "Prototypes are better at resolving uncertainty to the extent that they are simple, clear, unambiguous, prescriptive, focused, and consensual, as well as coherently integrated, self-contained, and explanatory" (Hogg 2007, p. 112)

4. "Where uncertainty is extreme and enduring, the motivation to reduce uncertainty and the quest for high-entitativity groups and clear prototypes are accentuated" (Hogg 2007, p. 112).

3.5.1 The Applications of Uncertainty-Identity Theory to Extremism

This section reviews key literature in the field of uncertainty-identity theory that apply the theory to the understanding of extremism. Understanding the causes of extremism and violent extremism is an ongoing issue that evolves alongside the evolution of the extremist threats of the time. Despite this, attempting to answer this complex problem is vital to countering extremism (Borum 2011). Initial efforts viewed violent extremists as psychologically troubled individuals, assuming that since "nonviolent behaviour in society is normal, then those who engage in violence, criminal or other, are necessarily 'abnormal' " (Schmid and Jongman 1988, p. 87). This assumption led to many years or searching for a psychological profile for violent extremists, a terrorist identity. However, not only did research fail to identify a psychological profile of violent extremists (J. Horgan 2003), but Ruby (2002) found that prevalence of mental illness among incarcerated terrorists is as low if not lower than the general population. Thus, the idea that there exists a single terrorist profile and that only mentally ill people become violent extremists has been left behind (Borum 2011). On a practical, counter-terrorism focused, level Atran states that "it must be understood that terrorist attacks will not be prevented by trying to profile terrorists. They are not sufficiently different from everyone else" (2006, p. 141). It should be noted that the irony is not lost on this study that a good deal of the literature discussed previously in this chapter would suggest that research has merely switched from trying to psychologically profile extremists to attempting to linguistically profile extremists, and seems to have learnt absolutely none of the obvious lessons from the research into identifying a psychological terrorist profile. If anything, the use of tools such as LIWC which claim

to reveal "thoughts, feelings, personality and motivations" (Pennebaker 2020) through words just adds another step to psychological profiling, further obfuscating any potential results.

Horgan suggests that investigating vulnerabilities to terrorism is a more promising path, with vulnerabilities being identified as "factors that point to some people having a greater openness to increased engagement than others" (2005, p. 101). Borum (2004) identifies three such vulnerabilities as a need for identity, a need for belonging and perceived humiliation or injustice. On the basis of the previous discussion in Sections 3.4 and 3.5 regarding social identity theory and uncertainty-identity theory respectively, it would be very easy to suggest both as the new magical solution to understanding extremism as both theories provide explanations for at least two of the vulnerabilities that Borum (2004) identifies: the needs for identity and belonging. Rogers warns against this however, suggesting that due to the ever-changing nature of violent extremism (a view supported by Rappoport's (2004) infamous waves of terrorism concept), applying a single theory to all types of terrorism is "to enter into folly" 2011, p. 39. Rogers wants against this however, suggesting that due to the ever-changing nature of violent extremism, applying a single theory to all types of terrorism is "to enter into folly" 2011, p. 39. This view is supported by Rapoport's (2004) infamous waves of terrorism model, which suggests terrorism has evolved throughout history in the form of waves. At the time of writing, there is somewhat of an overlap between the fourth wave which covers religious terrorism, and the newer fifth wave which includes white supremacism and white nationalism. Rapoport (2021) includes recent incidents such as the United States Capitol attack on January 6th 2021 under the new fifth wave. Kumari (2011) also states that a multidisciplinary approach is necessary to understand the complexities of violent extremism.

With the idea that the complexities of understanding extremism and violent extremism require an equally non-simplistic approach, there are a number of studies that posit uncertainty-identity theory as useful for understanding extremism. As discussed in Section 3.5, they key premise of uncertainty-identity theory is that identifying as part of a group is a good way of reducing uncertainty, and thus uncertainty is a motivator for group identification. More specifically, certain types of groups excel at reducing identity-based uncertainty.

Entitativity is the group attribute that describes how 'groupy' a group is. That is, "the property of a group that makes it seem like a coherent, distinct and unitary entity" (Hogg and Vaughan 2018, p. 432). Entitativity is a key concept when applying uncertainty-

identity theory to understanding extremism as groups that are high in entitativity "provide a clearer and more distinctive identity and ingroup prototype, and thus do a better job than low entitativity groups of reducing self-uncertainty" (Hogg 2009, p. 222). A group high in entitativity will typically have little diversity amongst members, a clear structure, and a clear common goal (Hogg and Blaylock 2012). At the extreme end of the entitativity scale, high entitativity can involve rigid membership boundaries, internal homogeneity (of the same kind), clear systems of ideology, ethnocentrism (judging other cultures and beliefs in the frame of one's own), a hierarchical group structure and clear leadership. Such a group is highly likely to be considered extremist and totalistic in nature and would be excellent at reducing uncertainty as there is a clear prototype for the ingroup. Hogg goes so far as to state that "ideological belief systems are perfectly suited to uncertainty reduction" (Hogg 2007, p. 103). Hogg argues that it is no coincidence that major ideological belief systems revolve around longstanding human uncertainties such as death and the origins and meaning of life; and that uncertainty-identity theory clearly shows why religious and political ideologies have consistently been at the root of the worst cases of man's inhumanity to man.

As noted above, uncertainty-identity theory states that self-uncertainty motivates group identification. In some situations, moments of extreme uncertainty can cause an individual to identify with an extreme group of the type described above, or to attempt to make a group they already identify with more extreme (Hogg 2007). Whilst it is possible to feel uncertain at any time, there may be times in an individual's life where one is particularly susceptible to uncertainty. As an example, a previous study of cults and other totalistic groups suggests that it is adolescents who are most likely to join these organisations (J. M. Curtis and M. J. Curtis 1993). This is supported by recent prosecutions of young teenagers in the UK for actions linked to violent extremism (BBC 2020a,b; Dearden 2020b). However, adolescence is not the only time great self-uncertainty can be experienced.

There are a number of social issues and situations that can lead to uncertainty. A good example of this is socially progressive movements causing uncertainty amongst relatively high-status groups who believe their current social status is under threat, followed by a backlash from the higher-status groups as they attempt to reduce their uncertainty and reinforce their position. This is seen in a number of real-world situations. In 1997, after a push for increased immigration and rights for native Aborigines in Australia, xenophobic nationalism increased in response to what was perceived as, according to Duck et al (1997 (as cited in Hogg and Mullin 2000)), a threat to white national identity and economic security. A more recent example is the backlash following the Black Lives Matter

protests during the summer of 2020, suggesting the far right had become more racist since the protests (Dearden 2020a; Murdoch and Mulhall 2020). In a similar manner, referring to US President Donald Trump, "Trump fans double down on their Trumpism the more uncertain their position becomes" (Webber 2020a), even if it can lead to them drinking cleaning products (see Jacobs (2020) and Nierenberg (2020)). On a slight side note, Trump's continual dismissal of news reports that he dislikes with the infamous phrase 'fake news' can be seen as a shockingly blasé, and unfortunately effective method of uncertainty reduction amongst his supporters.

In an attempt to further understand how different levels of uncertainty affect identification with certain types of groups, Hogg, Meehan and Farquharson (2010) carried out an experiment with Australian students to see how moderate and radical group identification was effected by increasing uncertainty amongst the students. Initially, the students were predicted to identify more strongly with the moderate group than the radical group, and this was confirmed by the findings. However, when uncertainty was increased, identification with the radical group also increased. There was no significant effect on the students' identification with the moderate group, although there was a non-significant effect that uncertainty weakened identification with the moderate group. These findings support uncertainty-identity theory in that not only does uncertainty strengthen identification with high entitativity groups, but also that people who are uncertain generally require a high entitativity group to reduce their uncertainty, and thus would have less use for the moderate group which is less entitative than the radical group. This is also supported by studies carried out by Hogg, Farquharson, Parsons and Svensson who found that increased uncertainty significantly weakened identification with the moderate group (2010, (as cited in Hogg, Meehan, and Farquharson 2010)). In a similar study also involving Australian students, Hogg and Adelman found that initially, "participants identified significantly more strongly with and had stronger behavioural intentions for the moderate than radical group" (2013, p. 443). The study found that under increased uncertainty, there was no longer a preference for the moderate group. As part of the same publication, Hogg and Adelman also studied uncertainty relating to the Middle East conflict in Palestinian Muslims and Israeli Jews and how this effected their views on a variety of military actions. Hogg and Adelman found that where Palestinian Muslims who had self-identified strongly as Palestinian and had high levels of uncertainty there was also stronger support for the use of suicide bombers. Similarly, Israeli Jews who strongly identified as Israeli and had high levels of uncertainty had the strongest support for the use of military tactics (Hogg, Kruglanski, and Bos 2013).

Taken together, these studies show support for the use uncertainty-identity theory to be at the very least useful when furthering the understanding of extremism, and at best may go quite some way to explaining it. Building on the earlier study carried out by Hogg, Meehan and Farquharsson (2010), Hogg and Adelman (2013) have shown that uncertainty-identity theory can be successfully applied to a real world scenario. It has been shown that increasing uncertainty in study participants not only increases their identification with radical groups, but also weakens their identification with moderate groups. That uncertainty-identity theory provides what, in the eyes of this study, is a relatively compelling explanation of extremism, then it also forms some of the basis of a counter-terrorism strategy. Whilst not a focus of this study, Hogg and Adelman do address the counter-terrorism aspect of uncertainty-identity theory by stating the "most obvious strategy is to prevent conditions that sponsor chronic, widespread, and acute identity- and self-related uncertainty in the first place" (2013, p. 450). However, they do also admit that doing so would be incredibly difficult if not impossible. A more realistic option put forward by Hogg and Adelman is to help individuals who do experience uncertainty as a negative force translate it into a positive force, essentially making them believe that they are capable of reducing that uncertainty themselves without the help of some radical group.

This chapter should now have provided an overview of the previous literature and studies surrounding the software LIWC, previous applications of LIWC to texts from 'traditional extremist sources (e.g. AQ, ISIS)' and lone actor extremist sources. Social identity theory has also been introduced, and the sub-theory uncertainty-identity theory proposed including relevant previous literature regarding their application to extremist behaviour. Together, these have informed and framed the research questions for this study, which are presented in the following section.

3.6 Research Questions

The previous sections in this chapter have now been introduced and the key areas of this study along with discussing previous literature in those areas, and a number of hypotheses can be suggested based on these discussions. Thus, this section states the research questions (RQ) for the study.

1. Do FRLAVE manifestos contain similar language patterns to extremist texts from actors studied in previous research?

2. Can contextually important information and target information be automatically extracted from FRLAVE manifestos?

3. Do FRLAVE manifestos support the social identity approach to defining and understanding extremism?

    (a) In particular, do FRLAVE manifestos support the hypothesis stated by Hogg, Meehan and Farquharson that "where people feel their self-relevant values and practices are under threat, self-uncertainty strengthens identification with "radical" groups" (2010, p. 1061), and that uncertainty-based identification reduces uncertainty?

    (b) Do FRLAVE manifestos support the conceptualisation of prejudice as group-based emotion? That is, in an instance of extreme prejudice, is there also a significantly increased focus on groups and emotion?

    (c) Do FRLAVE manifestos support any of the crossed-categorisation predictions regarding expected outgroup bias?

There is also a fourth and final research question that should be considered an overarching but intertwined theme of this study. That is, (RQ4) are computer-assisted content analysis tools such as LIWC, and perhaps NLP tools in general, suitable for analysing the manifestos of FRLAVEs?

The next chapter shows the methodological processes used in this study to investigate the research questions mentioned above. This also includes details of the data collection and preparation process, and how the LIWC software is used to analyse the data.

4 How to Interrogate Data: Digging Beneath the Surface of Tedium

This chapter sets out the methodological aspects of the study. This includes detailing what data is being used in the study; the violent extremist attacks associated with the data used; and a discussion surrounding why certain pieces of data have been either included or excluded from the final dataset. This is followed by an explanation of how the collected data was processed into consistent data formats and stored in a file structure designed to make the analysis of said data later in the study more efficient. Some basic pre-analysis of the data is then performed: this involves searching for words and nouns in the data that are not recognised by LIWC. The python scripts used to conduct this analysis are shown, as well as samples of the output of this analysis. The reliability of LIWC is then discussed, based on an in-depth discussion of the reliability of the software included in the LIWC2015 Development Manual (Pennebaker, Booth, et al. 2015b). This is followed by a discussion of potential alternative methodologies that could have been used to investigate the research questions stated in Section 3.6, the discussion is also accompanied by an overview of the limitations of computer assisted content analysis tools. Finally, there is consideration of the potential ethical issues encountered by the study.

4.1 Defining the Terms Manifesto, Lone Actor and Far Right

This section discusses how a manifesto is defined. As the data in this study is in the form of text documents commonly referred to as manifestos, it is important to ensure that they actually are manifestos. Assuming that the data used in this study are treated as extremist political manifestos, a set of non-extremist political manifestos should also be identified in order to investigate whether LIWC is identifying differences in extremist text or differences often seen in political manifestos in general.

As with the discussion of the definitions of extremism and radicalisation earlier in the study, pre-existing definitions of manifestos are a sensible place to start. It should be noted that it is not the aim of this study to discuss in depth what a manifesto actually is, rather the aim of this brief section is to set out some guidelines as to what should and should not be included in the data set. Some of the more easily accessible definitions available online are as follows:

1. “A written statement of the beliefs, aims, and policies of an organisation, especially a political party.” (Cambridge Dictionary 2021)

2. “A written statement declaring publicly the intentions, motives, or views of its issuer” (Merriam-Webster 2021)

3. “A manifesto is a publication issued by a political party before a General Election. It contains the set of policies that the party stands for and would wish to implement if elected to govern. (UK Parliament 2021)”

A manifesto then, based on these few definitions, entails a written statement that includes the policies, beliefs, aims, intentions, views or motives of whoever has issued said manifesto. Although there is a focus in the definitions shown on manifestos as a document published by political parties, manifestos are not exclusive to those types of organisations, although this is likely to be the most common usage of manifestos and the usage most are familiar with, particularly within in the UK. Whilst the manifesto of Anders Breivik, for example, is not issued on behalf of a political organisation as such, it can be taken as issued by an author who considers themselves an agent of a certain political ideology. It should be noted that whilst Breivik does state that he is part of a political organisation, The Knights Templar, no evidence of the existence of such an organisation has been found. Whether Breivik stated he was part of such a group as an intimidation tactic, as inspiration for others, or because he simply genuinely believed he was part of such a group is unclear. What is clear is that many far right manifestos published since are similar to Breivik’s in this way; there is no clear affiliation to political organisations, more an underlying ideology, such as white nationalism or white supremacism. Because of the often individualistic nature of the far right manifestos, both definitions that focus on political parties are not viewed as suitable for this study, based on textual content alone the manifestos would likely meet these definitions. For the purposes of this study then, the Merriam-Webster definition is deemed suitable, and thus from this point forward, ‘manifesto’ refers to a “written statement declaring publicly the intentions, motives, or views of its issuer” (Merriam-Webster 2021). In Section 5.1 of this study, it is argued that perhaps these texts, authored by extremists, should not be treated as manifestos. Evidence shows that FRLAVE manifestos differ from non-extremist political manifestos in the vast majority of LIWC categories, suggesting that treating the extremist texts as manifestos may be incorrect. The argument is discussed in more detail in the aforementioned section of the study.

4.1.1 Defining 'Lone Actor' and 'Far Right'

The terms 'lone actor' and 'lone wolf' often bring assumptions of a loner, excluded from mainstream society and likely with mental-health issues, plotting their lethal attacks in solitude. 'Lone wolf' in particular has been used by the media to conjure ideas of a hate-fuelled, socially-isolated but highly lethal individual capable of attacking at any time (Zuijdewijn and Bakker 2016; Spaaij and Hamm 2015). However, whilst recent research has challenged these assumptions, there is still no unified definition of 'lone actor'; with ambiguity surrounding quite how alone a lone actor needs to be. In a systematic literature review of lone actor terrorism, Kenyon, Baker-Beall and Binder (2021) cover a diverse range of definitions and typologies aimed at properly classifying lone actor terrorism. However, as is the case with defining terms such as terrorism and extremism, no such definition or typology has been agreed upon. Whilst there is a need to study lone actor violent extremists separately from organisations, there is no agreed upon line where a violent extremist actor goes from being lone to being part of an organisation; it is not clear and obvious how much support or interaction a lone actor violent extremist can have to no longer be classified as a lone actor. Although this study supports the use of a social identity approach to defining extremism and violent extremism, it is not the aim of this study to also put forward a classification for who can and cannot be considered a lone actor. The use of a social identity definition of extremism does initially appear at odds with any concept of a lone actor however, under the assumption that a socially isolated individual lacking in social interactions would be less likely to hold strong feelings towards any ingroups or outgroups.

However, as shown in Section 5.1.1 of this study, LIWC analysis of FRLAVE manifestos shows no significant difference in the use of first-person plural pronouns when comparing the FRLAVE manifestos with the control group. Whilst a strong conclusion cannot be made based on this finding, it would seem at odds with the concept of lone actors being truly alone. Rather, the lack of a significant difference in the results suggests a level of normality with regards to ingroup references that points towards, on a psychological level at least, a certain amount of social interaction. Much of the data used by this study was published online by authors with an online presence. Kenyon, Baker-Beall and Binder argue that the internet can provide a "substitute network for lone actors", which moves the boundaries of what might normally be considered as social interactions or being part of a wider community, with a specific lack of physical, face-to-face, contact. These results would support Schuurman et al's (2019) argument that 'lone wolf' overstates the level of isolation experienced by the individual. With these results in mind, for the purposes of this study, a violent extremist attacker is considered a lone actor when

they have carried out the actual physical attack on their own — this aligns with Allely's suggestion that lone actors are alone only in terms of the attack itself (2020). This has no bearing on interactions with other extremists during radicalisation, the planning of their attack, or at any time after the attack. Such a position also allows the concept of lone actors to exist in a social identity approach to extremism and violent extremism.

Unsurprisingly, the definition of 'far right' is also not clear cut. There does not appear to be a main reason for this, it may well be that a definition of far right is assumed knowledge by many, or that a 'we'll know it when we see it' approach is often taken. That 'radical right' and 'extreme right' are also used interchangeably with 'far right' does little to help the situation. The Anti-Defamation League (ADL) carry a definition on their website for 'extreme right', stating that the term describes "right-wing political, social and religious movements that exists outside of and are more radical than mainstream conservatism" (Anti-Defamation League 2022). This is then expanded on with a more in-depth, US-centric, view that the extreme right consists of two spheres that partially overlap, that of the white supremacist movements such as neo-Nazis, and the anti-government extremist movements such as sovereign citizens. The term 'far right', the ADL suggest, whilst mostly synonymous with 'extreme right', can also be used in broader terms that include facets of mainstream conservatism.

In a simpler approach, Mudde (2019) states the far right is "hostile to liberal democracy", with the far right then split into two subgroups: the radical right and the extreme right, with the extreme right rejecting democracy, and the radical right accepting democracy but in opposition of fundamental concepts of liberal democracy such as minority rights and the rule of law. A 2017 report by the National Consortium for the Study of Terrorism and Responses to Terrorism states that right-wing extremism is characterised by "anti-globalism, racial or ethnic supremacy or nationalism, suspicion of centralised federal authority and reverence for individual liberty" (2017, p. 6). This study agrees with Miller, in that the definitions and descriptions of far right presented above contain a number of common themes: racial and ethnic supremacism, nationalism, and anti-government views.

Whilst the majority of manifestos used in the study exist within the aforementioned themes, those of Elliot Rodger and Christopher Sean-Harper Mercer are harder to locate within the above descriptions of what is far right. There is, notably, a lack of references to male supremacism or incels. This is to be expected as neither are generally considered part of the far right despite considerable overlap (Brace 2021; Leidig 2021). Both Rodger

and Mercer's manifestos contain a significant amount of white supremacist content; with Mercer's in particular containing more racial content than it does on male supremacism. Similarly, male supremacism often appears in the far right, with Leidig citing the "crucial role of gender in contemporary far right movements" (2021).

It is not the aim of this study to offer a formal definition of what is, what partially is, and what is not far right. With this, and the aforementioned overlaps between male supremacism and the commonly-seen themes within the far right, in mind; this study includes some incel and male supremacist content under the umbrella term of the far right, with particular focus on Rodger and Mercer owing to the level of racial hatred present in their manifestos. To refer to Rodger and Mercer as incel, where incel is not considered as far right, has the potential to devalue the racial facets of their manifestos. Similarly, to designate them far right without equal focus on the male supremacism present within their manifestos, has the potential to devalue said male supremacist content. In the eyes of this study, and thus for the purposes of this study moving forward, the manifestos of Rodger and Mercer are both incel and far right in nature.

4.2 Data Collection, Processing and Preparation

This section sets out in detail the steps involved in collected the data used in this study; the processing of the data and finally, the preparation of the data for analysis. This also includes an overview of why some well-known manifestos have not been included in the dataset. Similarly, the inclusion of manifestos authored either in a foreign language or by authors for whom English is not their first language is also discussed.

4.2.1 Data Collection

Data collection for this study took place between January 2019 and April 2020. The data used in this study is made up of three data sets. The first, the main set Group A, contains FRLAVE manifestos. The second, Group B, contains the manifestos of the five most prominent UK political parties in the 2015, 2017 and 2019 UK general elections. The final group, C, is made up the mean LIWC values for six types of textual input, taken from the LIWC2015 Development Manual (Pennebaker, Booth, et al. 2015b). Group B is used only in the initial stages of LIWC analysis, as a test to see if any significant changes found in Group A are down to the content of the manifestos in Group A, or due to a stylistic difference commonly found in manifestos. The final dataset, divided into groups A and

B can be found in Table 4.1 at the end of this subsection. The endpoint of the collection was not decided on beforehand, as the aim was to allow as much time as possible for data collection, given the lack of data. To put it simply, the study had to allow as much time as possible for more manifestos to be published. After the Christchurch attack in March 2019 the rate of similar attacks increased, with attacks in Poway (California, US) and El Paso (Texas, US) taking place soon after. This uptick in attack frequency through 2019 justified the prolonged data collection period. Data collection was ended in April 2020 due to time constraints and lockdowns associated with the Covid-19 pandemic, on the reasoning that with lockdowns, there would be less available targets and thus the odds of an attack were expected to be much smaller than seen in 2019. The full dataset, including Groups A, B and C is given below in Table 4.1. This is followed by Table 4.2, listing the violent extremist attacks that were carried out alongside the publishing of the manifestos in Group A.

Table 4.1: Table showing the Groups A and B of data used in the study. Group A consists of manifestos published alongside attacks by FRLAVEs. Group B consists of the manifestos of the five most prominent UK political parties in the 2015, 2017 and 2019 UK general elections

Group A	Group B	Group C
Anders Breivik	Conservative Party 2015	Blogs
Brenton Tarrant	Conservative Party 2017	Expressive Writing
Christopher S.H. Mercer	Conservative Party 2019	Novels
Dylann Roof	Democractic Unionist Party 2019	Natural Speech
Elliot Rodger	Labour Party 2015	New York Times
Jim David Adkisson	Labour Party 2017	Twitter
John Earnest	Labour Party 2019	
Patrick Cruisius	Liberal Democrats Party 2015	
Stephan Balliet	Liberal Democrats Party 2017	
Tobias Rathjen	Liberal Democrats Party 2019	
	Scottish National Party 2015	
	Scottish National Party 2017	
	Scottish National Party 2019	
	UK Independence Party 2015	
	UK Independence Party 2017	

Table 4.2: Table showing basic attack and target details regarding the violent extremist attacks carried out by the authors of the manifestos used in data Group A of this study.

Perpetrator	Target Details	Location of Event	Date
Anders Breivik	Regjeringskvartalet (Norwegian Government Complex), AUF summer camp	Oslo, Utøya; Norway	22/07/2011
Brenton Tarrant	Al Noor Mosque, Linwood Islamic Centre	Christchurch; New Zealand	15/03/2019
Christopher S.H. Mercer	Umpqua Community College	Roseburg, OR; USA	01/10/2015
Dylann Roof	Emanuel African Methodist Episcopal Church	Charleston, SC; USA	17/06/2015
Elliot Rodger	University of California students	Isla Vista CA; USA	23/05/2014
Jim David Adkisson	Knoxville Unitarian Universalist Church	Knoxville, TN; USA	27/07/2008
John Earnest	Poway Synagogue	Poway, CA; USA	27/04/2019
Patrick Crusius	Walmart Supercenter	El Paso, TX; USA	03/08/2019
Stephan Balliet	Halle Synagogue	Halle and Landsberg; Germany	09/10/2019
Tobias Rathjen	Shisha bars	Hanau; Germany	19/02/2020

In the initial phase of the collection process, a search was undertaken for pre-existing FRLAVE manifestos, based on existing researcher knowledge. This search identified the following manifestos as suitable for the study:

- Anders Breivik - Oslo and Utøya, Norway - 2011
- Dylann Roof - Charleston, South Carolina (US) - 2015

As part of the search, the website https://schoolshooters.info/ (Langman 2021), a

database of documents relating to "perpetrators who intended to kill multiple victims in educational settings using firearms", was used to collect manifestos of several school shooters. This was done to check if any of these manifestos contained aspects of a far right ideology, however in most this was not the case. From this site, documentation relating to the following perpetrators was collected: Christopher Sean Harper Mercer; Elliot Rodger; Gang Lu; Pekka-Eric Auvinen; Robert Flores and Seung Hui Cho. Of these manifestos, only those of Christopher Sean Harper Mercer and Elliot Rodger were found to contain elements of far right ideology, specifically Incel ideology and White Supremacism. The manifestos of Lu, Flores, and Cho focus on how they have been wronged; whilst Auvinen believes he is restoring natural selection but there is no clear ideology. Alongside these texts, documents from James Lee, James von Brunn, Jim David Adkisson and Theodore Kaczynski were also collected in the initial stages of the data collection period. Kaczynski's text, eventually published in 1995 by *The New York Times* and the *Washington Post* in an attempt to stop Kaczynski from continuing his attacks, is a prime example of a manifesto authored by a lone actor violent extremist. Anders Breivik plagiarised sections of Kaczynski's manifesto, replacing a few keys words with his own to change the narrative focus. However, as Kaczynski's ideology is not far right in nature, his manifesto is not included in the final dataset. The manifesto of James Lee is also not included in the final dataset for the same reason; as it represents more a list of demands than a manifesto, which makes sense given that Lee took hostages as part of his attack.

The document authored by James von Brunn is more complex, as he carried out an attack at the U.S. Holocaust Memorial Museum in June 2009. There was, as far as this study is aware, no manifesto published alongside the attack, although in the years previous von Brunn had authored a number of anti-Semitic essays and even published his own 2002 book which inexplicably, at the time of writing, can be purchased on a well known book-selling website, with free next day delivery. The book, however, was published in 2002, 11 years before von Brunn's attack. Given the topics of the book and the nature of von Brunn's target, his ideology was likely similar when publishing his book as it was when carrying out the attack. Nonetheless, the book was not published alongside the attack in the same way that Anders Breivik's or Brenton Tarrant's were, and thus von Brunn's book is not included in the final dataset. Jim David Adkisson's manifesto, whilst short, contains many elements of far right ideology and is included in the final dataset on this basis.

Regarding attacks that occurred during the data collection period, the collection process is more complex. Once knowledge of an attack was gained, the situation was closely

monitored for any mention of ideological motivations. Monitoring used a combination of several information sources, including live news channels such as BBC News, and online platforms such as Twitter and Reddit. Based on initial information such as location, target and attack method it is usually easy to identify a likely motive. If an attack did not appear to be far right in nature, the situation was no longer monitored with data collection in mind. If the attack did look likely to have a far right motive, it was monitored for a period of time in order to discover if any manifestos were published alongside the attacks. In some cases, due to timezone differences between the UK and the US, immediate monitoring of an attack situation may not be possible due to events occurring in the early hours of the morning in the UK. Where this happened, news sources and online platforms were viewed during the following morning.

If a manifesto was discovered, the data was collected in whatever format it was available. Confirmation of the legitimacy of the manifesto often took longer, and this is usually achieved by matching the name on a manifesto to the name of the perpetrator released by law enforcement. The existence of a manifesto is usually confirmed by news reports, although this may not happen immediately. Due to the fluid nature of these situations there is not always a reliable source to authenticate these documents. This led to, in some cases, screenshots of a document downloaded from Twitter threads. This was the case with the manifesto of Patrick Crusius. In the case of Tobias Rathjen, responsible for the Hanau shooting attack in Germany in February 2020, the manifesto was originally authored in German. This led to data collection being attempted using translations via automated translation services such as DeepL, found at https://www.deepl.com/en/translator (DeepL 2021), and translations by users from a forum who claimed to be native German speakers which, perhaps unsurprisingly, appeared suspiciously similar to the DeepL translations. The automated translations of Rathjen's manifesto were not deemed accurate enough for a study so focused on language and meaning, and thus a manual translation was carried out by a (confirmed) native German speaker who was also fluent in English; the translator was instructed that the translation should be as literal as possible. The issues involved with translated documents need to be acknowledged and considered by this study and any future studies. Namely, that each reader applies their own meaning to a text and it follows that the translated document is likely to contain the translator's meaning rather than the meaning of the original author. In this case, this study judges that due to working with a small dataset, the opportunity to add to the dataset should not be quickly dismissed because of these reasons. The translation of Rathjen's manifesto was instructed to be as true and literal as possible, aiming to minimise the amount of the translator's subjectivity found in the translated document.

The same reasoning is applied when considering manifestos composed in English by authors for whom English is not their native language. In the case of this study, restricting the data to that authored by native English speakers would mean that the manifestos authored by Breivik, Balliet and Rathjen could no longer be used. It is the view of this study that the potential value lost by not using these manifestos is far greater than the potential value lost by inaccuracies in the texts, either from translations or from the original document itself. Such a position also infers that authors for whom English is their native language do not make mistakes when it comes to spelling and grammar. As an example, Dylann Roof's manifesto contains a multitude of spelling and typing mistakes; he uses the word 'people' 14 times, spelling it correctly 10 times but mistyping it as 'pe0ple' four of those times, an inaccuracy rate of 29%. Thus, being a native English speaker is no guarantee of accuracy of meaning; in a similar way, being a non-native English speaker is no guarantee of inaccuracy. This is especially the case with Anders Breivik's manifesto, which displays a very high level of English ability throughout. The following subsection describes how data was processed and prepared for further analysis. It should be noted that for increased clarity any references to file formats or file addresses will be in `this font`.

4.2.2 Data Processing & Preparation

As mentioned previously, due to the fluid nature of the data collection, data was often collected in various formats, whether this is be as a `.pdf`[1] file or as a series of images, or in some cases a mix of both. In terms of the software used, LIWC is capable of handling `.txt`[2] and `.pdf` files, although in regards to `.pdf` files, the text in them must be searchable. That is, a `.pdf` file made up of images will not be handled correctly as LIWC cannot extract the text. When using NLTK as part of a Python script, the most sensible data format to use is a .txt file. On this basis, for each manifesto, all text was copied into a `.txt` file for analysis.

As mentioned briefly earlier, some of the `.pdf` files did not contain searchable text,

[1] A PDF file is a multi-platform document created by Adobe Acrobat or another PDF application. The PDF format is commonly used for saving documents and publications in a standard format that can be viewed on multiple platforms. In many cases, PDF files are created from existing documents instead of from scratch.

[2] A .txt file is a standard text document containing unformatted text. It is recognised by any text editing or word processing programmes and can also be processed by most other software programmes.

in that software like LIWC cannot extract text from the document, and the text cannot be simply highlighted, copied and pasted into a `.txt` document. A possible remedy for this was to use the scan and OCR tool in Adobe Acrobat Reader, which converts a document with non-searchable text into a document with searchable text. However, when testing this tool, 100% accuracy could not be guaranteed. On this basis, for manifestos collected in a non-searchable `.pdf` format, the text was manually typed into a separate `.txt` file, this was also the case for manifestos collected in image formats, as was the case with the manifesto of Patrick Crusius. During this process, spelling and grammatical mistakes were not corrected and punctuation and paragraph structure was maintained in the copies. No text was added, altered or removed by the researcher during this process.

Once the textual content of each manifesto had been copied into a `.txt` file, a file structure was created for each manifesto to store the raw data, processed data, and data analysis. This file structure is designed to be used throughout the study and thus it also contains files output by data analysis. The first subfolder, `Data` contains any files related to the original collection of the manifesto (in whatever file form they were initially collected in), and the processed version of said data, saved as `processedManifestoData.txt`. The `Dictionary_Words` subfolder is used later in the data analysis stage, and contains a list of words included in the manifesto but not in the LIWC standard dictionary (`nonDicWords.txt`). That is, words included in the manifesto that are not recognised by LIWC. This list is copied from the LIWC results subfolder for ease of analysis. Alongside this is a list of nouns that are included in the manifesto but not recognised by LIWC (`nonDicNouns.txt`). The last file, `manifestoNouns.txt` is output from data analysis performed using NLTK and is copied from the `NLTK` subfolder for ease of analysis. The list of nouns not recognised by LIWC (`nonDicNouns.txt`) is created by cross-referencing the other two files. The `LIWC` subfolder contains all LIWC results regarding the specific manifesto, as well as the list of words from the manifesto not recognised by LIWC. LIWC results are output in Microsoft Excel files (`.xlsx`). The final subfolder, `NLTK` contains all results produced by NLTK analysis of the specific manifesto. The first file, `manifestoNouns.txt` contains a list of all nouns in the manifesto as recognised by NLTK, alongside a frequency of how often each noun appears in the manifesto. The second file with the `NoFreq` suffix contains the same list of nouns but without the frequencies, this file is used for further analysis. Lastly, the `nouns.py`[3] file contains the script for running NLTK analysis on the `processedManifestoData.txt` file. An illustrated version of this file structure can be found below in Figure 4.1.

[3] A .py file is a file or script written in the Python programming language.

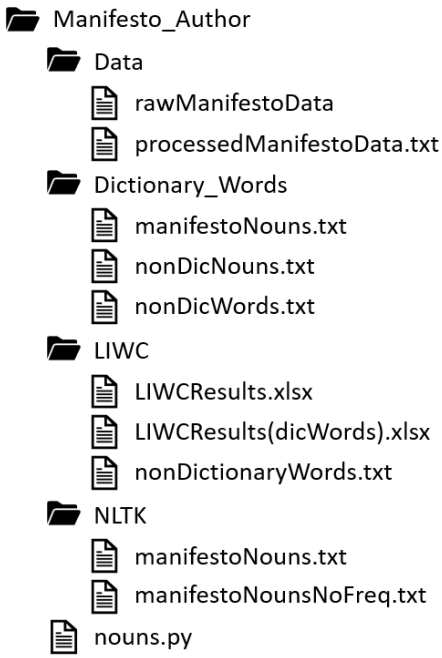


Figure 4.1: Figure showing a generalised example file structure used to store raw and processed data, and results of data analysis.

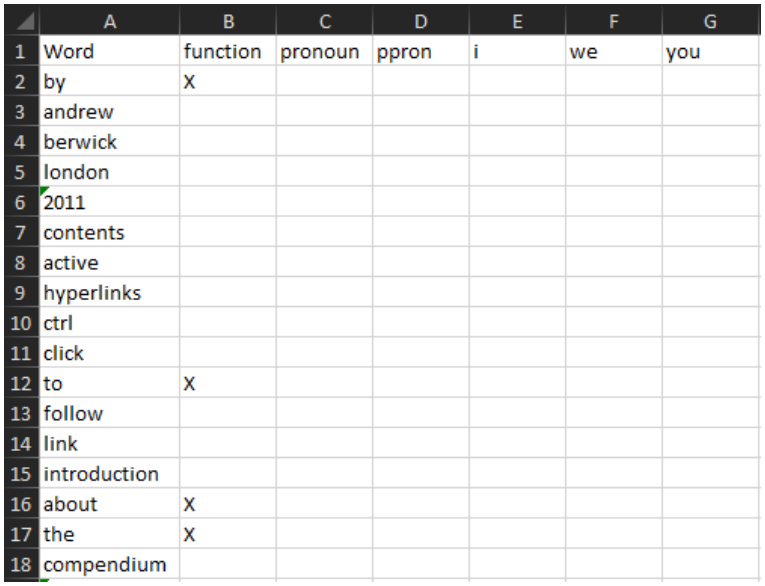
4.3 Data Analysis

This section describes the steps involved in the pre-analysis of data for the studies found in Chapters 5 and 6. This includes step-by-step instructions for how LIWC was used in the interests of ensuring the study is repeatable. The NLTK-based Python scripts used in Chapter 6 are also discussed and their use in this study clearly described. This section does not include details of the actual analysis performed in Chapter 5, rather this section details the foundations that allows that analysis to be performed. It should be noted that any file addresses in this section are in the context of the file structure illustrated in Figure 4.1 above. For general instructions of how to use LIWC refer to Pennebaker et al. (2015).

The first step in the pre-analysis of the processed manifesto data is to run each manifesto through the LIWC software using its standard dictionary. The `processedManifestoData.txt` file is input into LIWC using the options *Analyze Text* $\rightarrow$ *Text File(s)*. The results of this are then saved as an excel spreadsheet under the file `/LIWC/LIWCResults.xlsx`. The processed data file is then ran through LIWC again, this time using the *Categorize Words* function in LIWC. Again the results are saved as an excel file, `/LIWC/LIWCResults(dicWords).xlsx`.

The next step is to create the list of words found in the manifesto that are not recognised by LIWC. The previous step, in which LIWC marks which words are recognised

as being a part of a category in LIWC is used to create this list. A small sample of the excel output from the *Categorize Words* function in LIWC, using the processed manifesto of Anders Breivik, is shown below in Figure 4.2.



	A	B	C	D	E	F	G
1	Word	function	pronoun	ppron	i	we	you
2	by	X					
3	andrew						
4	berwick						
5	london						
6	2011						
7	contents						
8	active						
9	hyperlinks						
10	ctrl						
11	click						
12	to	X					
13	follow						
14	link						
15	introduction						
16	about	X					
17	the	X					
18	compendium						

Figure 4.2: Figure showing a small section of the LIWC output from Anders Breivik manifesto, with LIWC categories along the y-axis. An X signifies that a word is present in the category.

A new column is then added to the spreadsheet named *Dictionary Categories*. This counts how many LIWC categories each word is present in using the Excel formula `=COUNTIF(B#:BV#, "X")`, where # is the row number for each word. A sample of this column is shown below in Figure 4.3. The new column, *Dictionary Categories*, is then filtered so that only words that are not present in any categories are shown, i.e., where the value in said column is equal to zero. The words remaining are then copied into an empty text file and this is saved as `nonDictionaryWords.txt`, this file is also copied and renamed under the file address `/Dictionary_Words/nonDicWords.txt`.

The next phase of pre-analysis involves using the Natural Language Toolkit (Bird, Loper, and Klein 2009) for Python. Using the `nouns.py` script, shown in Listing 9.1 in Appendix B, run via command prompt, nouns are extracted from the `processedManifestoData.txt` file. The script outputs to both `manifestoNouns.txt` and `manifestoNounsNoFreq.txt`. The first output file contains the frequency with which each noun occurs in the manifesto, an example of this file is shown in Figure 4.4; this file is also copied into `Dictionary_Words/manifestoNouns.txt`.

	A	BX
1	Word	Dictionary Categories
2	by	2
3	andrew	0
4	berwick	0
5	london	0
6	2011	1
7	contents	0
8	active	3
9	hyperlinks	0
10	ctrl	0
11	click	2
12	to	2
13	follow	4
14	link	4
15	introduction	0
16	about	3
17	the	2
18	compendium	0

Figure 4.3: Figure showing a small section of the LIWC output from Anders Breivik manifesto, showing a list of words included in the manifesto and the number of LIWC dictionary categories each word is present in.

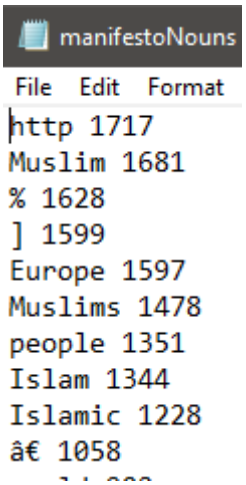


Figure 4.4: Figure showing a small section of the NLTK output from Anders Breivik manifesto, showing a list of nouns included in the manifesto alongside the frequency with which they appear.

The last phase of pre-analysis involves cross-referencing the list of nouns extracted from the manifesto with the list of words in the manifesto that are not recognised by the LIWC dictionary. This produces a list of nouns present in the manifesto that are not recognised by LIWC. The cross-referencing is performed using the `comparison.py` script shown in Listing 9.2 in Appendix B, also ran via command prompt. This script outputs to the file `nonDicNouns.txt`.

4.4 Reliability

The section discusses the reliability of the LIWC tool used in this study. This is a slightly tricky discussion, as measuring these is complex due to the nature of natural language (Pennebaker, Boyd, et al. 2015). As Pennebaker et al. explain, the traditional methods of calculating reliability, as one might do with a questionnaire, are a little flawed in the case of natural language. This is because, generally speaking, once something is said, it does not need to be said again. If anything, it is considered bad practice for an author to repeat

the same point over and over again.

Pennebaker et al. (2015) use both Cronbach's Alpha and the Spearman-Brown prediction formula to calculate the internal reliability of LIWC. They argue that Cronbach's Alpha tends to underestimate the reliability of each LIWC category and that, if these values were to be used as a measure of reliability, the standard threshold for what usually constitutes 'good' or 'acceptable' reliability would likely have to be lowered — it is unclear what exactly this threshold is, Bryman (2016) suggests it is 0.8+, although allowing that most academics tend to work with lower figures varying between 0.6 and 0.7. This argument is reflected in the Cronbach's Alpha values calculated by Pennebaker et al (2015). Looking at some of the LIWC categories that were discussed earlier in Chapter 3, *Personal Pronouns* has a Cronbach's Alpha of $\alpha = 0.25$; and *Positive-* and *Negative Emotion* have an $\alpha = 0.23$ and 0.17 respectively. The highest value of Cronbach's Alpha for any LIWC category is that of the *Work* category, with an $\alpha = 0.69$. The average value of Cronbach's Alpha for an LIWC category is $\alpha = 0.34$, well below the usual threshold for what would be considered 'good'.

On this basis, Pennebaker et al. (2015) calculated 'corrected' alphas using the Spearman-Brown prediction formula. Using this method of calculating reliability, the reliability of every LIWC category increases when compared to the Cronbach's Alpha values. Again looking at the same categories, *Personal Pronouns* has a corrected $\alpha = 0.61$; *Positive Emotion* has a corrected $\alpha = 0.64$ and *Negative Emotion has a corrected* $\alpha = 0.55$. The average corrected α for an LIWC category, using the Spearman-Brown prediction formula is $\alpha = 0.69$. If the Spearman-Brown calculations do indeed give a more accurate representation of the internal reliability of LIWC, as Pennebaker et al. (2015) suggest, then this study is satisfied that LIWC is of sufficient reliability.

4.5 Limitations & Alternative Methodologies

This section outlines the alternative methodologies for investigating the research questions in this study. Included are discussions of why the various alternative methodologies were not chosen for this study, alongside further limitations of the methodologies and methods that are utilised.

4.5.1 Alternatives in Data Collection

Before discussing alternative methodologies perhaps the first and most obvious opportunity to change how this study is performed is via data collection. Manifestos from a wider range of ideologies and attacks could be included and the hypotheses made broader to accommodate the extra data. Ted Kaczynski (Unabomber) is probably the prime example of a lone actor violent extremist, and yet his manifesto is not included here as his ideology is not what would be considered far right in nature. The selection criteria for the type of texts collected could also be expanded to include books such as James von Brunn's *Kill the Best Gentiles*; although it could certainly be argued that if a study was to include von Brunn's book alongside these manifestos there would be no reason not to include texts such as Mein Kampf, although this would of course be specific to a study's hypothesis. Transcripts of speeches or indeed any voice communication could also be used, examples of such include any statements made by Brenton Tarrant during the live stream of his attack; or transcripts of Elliot Rodger's YouTube videos. Transcribing a speech into text however does have the potential to cause a significant loss of meaning. For example, emphasis on words and the tone of speech are lost, which could be critical to how a speech is interpreted. For this reason, this study does not make use of transcriptions of verbal communication. It should be noted that, from Pennebaker et al. (2015), LIWC is capable of analysing transcriptions of natural speech.

In a similar manner, relaxing the ideological requirement for collecting manifestos would also allow the study to include the manifestos of school shooters in the data set. Such texts would still meet the definition of manifesto stated earlier, in that they publicly declare the motives of the issuer. However, given the focus on far right ideologies in this study, the manifestos of school shooters are not relevant here. Based on this studies brief analysis of a number of school shooter manifestos, there is a much stronger focus on building a revenge narrative than there is on building any level of ideological motivation. Use of symbols such as the pentagram and references to 666 might suggest a Satanist ideology in some of the perpetrators, something which is also found in the manifesto of the Incel extremist Christopher Sean Harper Mercer. It is the opinion of this study that Incel ideology closely resembles that of school shooters in this way, in that there is also a focus on building a revenge narrative. However, both Incel manifestos used in this study also include elements of White Supremacism and are therefore included in the study. Due to this study's sole-focus on far right ideology, the manifestos of school shooters were not seen as relevant. It should be noted that if a school shooter manifesto had been identified where the motivation was considered to be far right in nature, or included ideological features commonly found in the far right, then the manifesto would have been included in

the data set for this study.

4.5.2 Alternative Methodologies

There are a range of alternative methodologies available for studying texts such as manifestos, although this study has elected to use of computer-assisted content analysis (CACA) for a variety of reasons. This includes the focus of RQ4 on testing the suitability of CACA techniques requires the use of said methodology to test it. Use of other methodologies are likely to be more suitable in follow-up work, were CACA techniques found to be unsuitable in this study. In a similar way, the concept of a methodology that can accurately identify extremist text that can also be automated is somewhat of a holy grail in this area but is nonetheless worthy of consideration. This limits the range of methodologies available, in that there should be a pathway for automation.

The range of alternative methodologies that could be utilised to investigate RQ1 is heavily restricted by the research question itself. For ease of reading, the research question is re-stated here — **RQ1:** *Do FRLAVE manifestos contain similar language patterns to extremist texts from actors studied in previous research?* The previous research mentioned utilised LIWC — with some using the 2015 dictionary and some using the previous 2007 dictionary — and thus for ease of comparison it is sensible to also use LIWC to investigate this research question here. Any alternative methodology would make direct comparison significantly harder.

When considering the second research question there are two alternative methodologies that can be used. Again, the second research questions is re-stated here — **RQ2:** *Can contextually important information and target information be automatically extracted from FRLAVE manifestos?* Thematic analysis could be used to investigate this research question, however there are a number of reasons why using a CACA methodology via NLTK is chosen instead. As usual, the theme of automation is a consideration here, with thematic analysis not easily automated. Whilst it should be noted that software does exist that claims to automate thematic analysis, these are primarily aimed at dealing with large sets of data such as questionnaires from a large number of participants or customer reviews. The second issue is related to the research question and derives from the information that is being (hopefully) extracted from the manifestos. The information this research question aims to identify is specifically regarding target-specific information that may — or may not — be included in the manifestos. Target-specific information is likely to come in the form of geographical locations, place names, buildings, as references to

specific events. Namely, the majority of said information is likely to be nouns and thus expected to be picked up by NLTK. Any time-specific information, whilst unlikely to be picked up by NLTK, is usually presented in a small-range of formats, allowing a relatively simple CACA search for said information. It should be noted that the identification of time-specific information is not a focus of RQ2. The manifestos studied are published alongside attacks and are expected to have very little, if any at all, time-specific information included in them. For example, Brenton Tarrant sent his manifesto to the New Zealand government nine minutes before his attack started. If anything, time-specific information is usually focused on historical events such as the Crusades.

An alternative method for carrying out the CACA methodology would be to use a custom LIWC dictionary to search for target-specific information. Obviously this dictionary would have to be built from scratch, although the choice of methods for doing so is not immediately obvious. A potential option would be to investigate the current data set and previous texts to build a dictionary from words contained in said texts, although this is what NLTK would be doing in any case; and, more importantly, offers no guarantee of including target-specific information contained in future extremist texts. A second option would be to red-team potential targets and identify any words, phrases or abbreviations that might be related to said targets. This seems unrealistic in an academic setting and very difficult to achieve otherwise due to the global reach of far right politics. One of the more obvious difficulties is the need to constantly analyse new targets to keep the dictionary up to date. Naturally, for this research question in general, the utility of any methodology used is limited by whether or not manifesto authors actually include target-specifics in their manifestos.

The third research question offers the most room in terms of utilising different methodologies. The third research question is stated again here, as follows: **RQ3:** *Do FRLAVE manifestos support the social identity approach to defining and understanding extremism?* This is then split up into three more specific research questions investigating uncertainty, groups, emotion and outgroup bias. Discourse analysis is often mentioned when analysing text and it can be used as an alternative methodology here. Whilst discourse analysis is also epistemologically suitable for this study, it is not considered overly suitable for answering the research questions. If the third research question were focusing more on discovering what the purpose of the manifestos were and how they were created in order to do it, then discourse analysis would be far more suitable. Rather, the research questions focus on the content of the text, and whether said content points towards a focus on a number of relatively simple factors: uncertainty, groups, emotion and outgroup

bias. The use of critical discourse analysis runs into a similar issue, in that whilst it is an effective alternative methodology suitable to the dataset, it is not as suitable for investigating the research questions. Critical discourse views discourse (written discourse, in this case) as an exercise of power. Considering that the manifestos investigated here are published alongside violent attacks it is fair to assume that the true exercise of power may not be within the discourse but in the attack itself. If that is the case then, the power of the manifestos is likely to come across in an inspirational manner, although one could argue that the attacks themselves are also as equally inspiring, at least to those wanting to be inspired. Thus critical discourse analysis and discourse analysis are both highly suitable alternative methodologies for the dataset, but not for the present research questions for the reasons discussed above. In addition, there is no clear pathway to automating either discourse analysis or critical discourse analysis.

4.5.3 Methodological Limitations

Naturally, computer-assisted content analysis also falls foul of its own range of limitations, discussed here with a specific focus on LIWC and NLTK. The first, and perhaps most obvious of these limitations is regarding content recognition. Tools such as LIWC and NLTK are only capable of recognising what they have been coded to recognise. As an example, LIWC recognises 74.57% of the Anders Breivik's manifesto. Dealing with *new* content is all but a mystery. This is less of an issue when analysing texts that are already in existence, as said tools can be changed to improve their ability to recognise and analyse the contents of these texts. For instance, a custom dictionary could be created for use with LIWC, specifically aimed at improving LIWC's ability to recognise and analyse content in Breivik's manifesto. However, future-proofing such tools is a complex task. In relation to this study for example, a certain word appearing in the ten-most recent manifestos is no guarantee it will appear in the next. Similarly, a word appearing in the next manifesto may never have been seen in previous manifestos. Tools such as LIWC that are reliant on a pre-defined dictionary of words are particularly susceptible to this limitation. NLTK is less effected by this as it bases the recognition of nouns not by comparing to a pre-defined list of nouns but by analysing the structure of a phrase or sentence. NLTK asserts that nouns occur after a determiner or adjective, and this is the basis on which NLTK identifies nouns (Bird, Loper, and Klein 2009). It should be noted that this itself is limited by the assumption that general grammatical rules are followed in the text being analysed. Generally speaking however, NLTK is less effected by previously unseen content than LIWC. Thus NLTK is potentially capable of reducing the effect of this limitation when it comes to LIWC, suggesting that utilising the two methods in tandem may be a way

forward.

Such a suggestion is supported when considering the elephant in the room when it comes to CACA methodology and related methods. These tools, in terms of context, vary from poor to headless chicken levels of understanding. To borrow an earlier example, LIWC only recognises 'black' and 'white' as colours that one might see, as words related to perceptive processes. There is no clear consideration of wider racial, social or political contexts, only that said words may or may not be present in the analysed text. Again, NLTK can reduce the potential exposure to this limitation. If 'black' or 'white' are used to refer to a racial group they are likely to be used as noun would be used, compared to an adjective if they were simply being used to describe the colour or something. This would likely be more identifiable by NLTK. This is supported by some brief analysis of the manifesto of Dylan Roof. The word 'white' can be found in Roof's manifesto 41 times and 'whites' six times. NLTK identifies 17 uses of 'white' as a noun, suggesting the other 24 uses are mostly descriptive. In the context of Roof's manifesto, working under the assumption that the white supremacist from South Carolina wasn't a huge fan of cricket, 'whites' is very obviously a reference to the racial group. As one would expect, NLTK identifies all six uses of 'whites' as nouns. A more in-depth investigation of these limitations is provided in Section 5.3 of this study.

The final limitation discussed here is derived from issues of data quality and is encountered relatively frequently during this study. CACA tools such as LIWC are most effective when data has no spelling mistakes or grammatical issues, and are competently structured. For example, when analysing the manifesto of Dylann Roof, NLTK identifies the word 'people' as a noun ten times. However, NLTK also identifies Roof as using the word 'pe0ple' four times. Aside from Roof's questionable typing, the focal point here is that it is reasonable to assume that Roof actually used 'people' 14 times, but NLTK has been unable to handle the mistype. Only upon manual reading of NLTK results was this discovered. Again the solution is not particularly clear. Altering the data to correct errors leads, correctly so, to questions regarding the accuracy and authenticity of the data. Using a spell-checker is ill-advised, as words not recognised by the spell-checker but spelt correctly may be changed and meaning lost. Of all the solutions, the most risk-averse is to manually check the results of LIWC and NLTK analysis for issues of this nature.

4.6 Ethical Considerations

This section considers relevant ethical concerns that arose carrying out this research. This includes a discussion of key areas of the UK Terrorism Act 2000 and a brief discussion regarding the unfortunate need to use the names of perpetrators in this study.

Considering the topic, there are few ethical issues regarding this particular study. In terms of data usage, consent is largely a non-issue. The authors of the manifesto data in Group A are also perpetrators of violent extremist attacks who publicly published their data alongside carrying out the attack. That is, published in a way to draw maximum attention and publicity to their manifestos. There is no expectation of privacy. Similarly, the manifesto data in Group B are all published by UK political parties in support of a General Election campaign, once again there is no expectation or desire for privacy. The collection of Group A data is a more complex issue and will likely vary country to country. Section 58(1) of the UK Terrorism Act 2000 states that a person commits an offence if:

- (a) he collects or makes a record of information of a kind likely to be useful to a person committing or preparing an act of terrorism,
- (b) he possesses a document or record containing information of that kind, or
- (c) the person views, or otherwise accesses, by means of the internet a document or record containing information of that kind.

Whilst this must be kept in mind throughout the study, Section 58(3A)(b) states that a reasonable excuse for their possession of the information set out in Section 58(1) is if:

- The person's action or possession was for the purposes of —
  - (i) carrying out work as a journalist, or
  - (ii) academic research.

Thus, this study has no particular concerns regarding the above stated laws. Data storage was restricted to a university-provided personal shared drive. The shared drive was used due to the need for access from multiple devices. This was led by technical requirements during the analysis phase, specifically regarding the speed of analysis when it came to longer manifestos.

The penultimate issue pertains to the use of the names of perpetrators in this study. In an ideal world, their names would never be seen or heard again — and their names in this study replaced with a range of swear words — but there are issues when it comes to

clarity of discussion. There are three alternative options for referring to the perpetrators of attacks. The first is to use their initials; the second is to assign each perpetrator a number and use said numbers to refer to them; and the final option is to refer to perpetrators based on the geographical location of their attack (i.e. the Christchurch shooter to refer to Brenton Tarrant). Each option suffers from a loss of clarity, especially when multiple perpetrators are being discussed. Since this study is composed with an interdisciplinary readership in mind, where readers may not be overly familiar with some of the attacks from which data has been used, this study uses the full names of the perpetrators (i.e. Anders Breivik, Brenton Tarrant) when referring to them.

Similarly, there are ten extremist manifestos used in this study. Upon reading previous research, this study finds a surprising lack of acknowledgement regarding the real world incidents with which content of this nature is associated. Each manifesto used in this study accompanied a horrific terrorist attack in which real people lost their lives and suffered life-changing injuries. Whilst this study has explored several ways of paying respect to the 190 innocent victims who lost their lives, the 422 who were injured, and the families and friends affected, none seem to be enough. It is with regret that this study acknowledges that it cannot possibly pay respect to these victims in the manner they deserve. Rather, it is hoped that this thesis, as Feldman (2021) suggests, honours the victims by contributing to tackling the pandemic of far right extremism.

The next chapter uses the LIWC software to analyse the data set and investigate the first, second and third research questions. There is a focus on pronoun-based categories and emotional word categories as these are seen as the key categories based on previous key literature.

5 Investigating Linguistic Patterns in Far Right Lone Actor Violent Extremist Manifestos

This chapter utilises the Linguistic Inquiry and Word Count (LIWC) software to analyse language usage in FRLAVE manifestos, in order to investigate two major research questions. First, the results of this study are compared against the results of previous studies that used LIWC with similar data in order to see if there are any language patterns in the manifestos of FRLAVEs generally. Second, in order to support a social identity approach to extremism in a more broad manner than just suggesting a definition of extremism, this section investigates whether the LIWC results support Smith's (2000) model of prejudice as group-based emotion. If LIWC is too structured and deterministic, as this study has argued previously, then it is expected that whilst LIWC may identify some accurate results in categories less prone to a change of context, the tool will be limited by this determinism when it comes to categorising words that can carry a different meaning in the manifestos of FRLAVEs.

This chapter shows that the usage of a number of LIWC categories such as *Third Person Plural Pronouns* and *Negative Emotions* are identified as being used significantly more frequently in the manifestos of FRLAVEs. This result, through showing that references to outgroups and negative emotion are both more frequent in the manifestos, supports Smith's (2000) model of prejudice as group-based emotion, adding further viability to a social identity approach to extremism. These categories are also found to be important in previous studies, showing that even across various far right ideologies and points in time, Smith's (2000) model applies consistently.

Other LIWC categories are also found to be statistically different by this study, ranging from *Friends* and *Female References* being found less, to *Death* and *Risk* being found more, often in the manifestos of FRLAVEs. Aside from the categories that support Smith's model, there is little alignment in the results of this study and results from previous research, only in the category of *Discrepancy* (containing words such as 'should' and 'would') was there found to be significant differences by this study, but identified as important in previous research. Further investigation of some of these categories finds numerous context-based faults in LIWCs categorisation of words, which is to be expected to some extent. The most notable of these is the categorisation of 'white' and 'black' as words in the *See* and *Perceptual Processes* categories. Whilst LIWC is not wrong to

categorise these words in this way, given the context of the data used in this study, it is not entirely correct either. This study suggests that the deterministic nature of LIWC allows it little flexibility and little applicability to contexts that exist outside of the relatively normal.

5.1 LIWC Analysis: Making Meaning from Counting Words

This section includes any pre-analysis statistical tests that are required before moving in to the analysis proper. As a reminder, data set A contains the set of ten manifestos authored by FRLAVEs; data set B contains the manifestos of the five most prominent UK political parties in the 2015, 2017 and 2019 general elections; and data set C contains the control data, made up of the average LIWC values for six types of textual input taken from the LIWC development manual. Since the data set is small (< 25), tests must be performed to check for normal distribution; that is, to see if the variables (LIWC categories) are normally distributed throughout the data set. There are a number of tests available to do this, although the Shapiro-Wilk test is generally seen to be the most statistically powerful. The full results of the Shapiro-Wilk test performed on data set A (the FRLAVE manifestos) are included in Appendix A. A shortened table of results showing only the variables that are not normally distributed are shown below in Table 5.1.

The results of the Shapiro-Wilk test shown in Table 5.1 show that 26 of the 79 (32%) variables tested are not normally distributed. Since the data set is small (< 25) and normality cannot be assumed (supported by the results of the Shapiro-Wilk test), Mann-Whitney tests will be used to identify LIWC categories that have significantly different usage rates in manifestos (data set A) compared to the control data (data set C). Before this analysis takes place, there is a further piece of pre-analysis that must be performed. That is, there is a need to show that the manifestos of FRLAVEs are sufficiently different from plain old political manifestos. Standard political manifestos are not traditionally authored in a similar style to any of the control data from data set C, and thus there needs to be a check in place to make sure that this study is not simply identifying stylistic differences in manifestos as a whole. Data set B is used in this case, taking the full data set (data sets A, B and C) to a size of 31. This is large enough to assume normality but this study chooses to run the Shapiro-Wilk test again to investigate whether the addition of data set B has drastically altered the distribution of the variables. The full results of this Shapiro-Wilk test can be found in Appendix A, Table 9.2. The results of this test are surprising, in that with the addition of the data set B data the vast majority of variables

Table 5.1: Table showing those LIWC categories which are not normally distributed across data set A and the control group C, identified using a Shapiro-Wilk test for normality. The full results of this test can be found in Appendix A.

LIWC Category	p-value from S-W Test
Total Function Words	0.023
1st-Person Plural Pronouns	0.025
2nd-Person Pronouns	0.014
3rd-Person Singular Pronouns	0.000
Positive Emotion	0.034
Anxiety	0.034
Anger	0.018
Family	0.021
Female	0.018
Male	0.007
See	0.002
Feel	0.007
Health	0.001
Sexual	0.005
Power	0.036
Leisure	0.002
Home	0.014
Money	0.026
Religion	0.000
Death	0.002
Informal Language	0.000
Swear Words	0.040
Netspeak	0.000
Assent	0.000
Nonfluencies	0.000
Fillers	0.000

are now identified as not being normally distributed, suggesting that the results of LIWC analysis of the data set B data are consistently very different to the data in data sets A and C. Of the 79 variables investigated, only 23 are normally distributed, and thus 56 are not normally distributed. 56 from 79 is equal to 70.8%, more than double the number

of non-normally distributed variables than in the first Shapiro-Wilk test. This significant decrease in normally distributed variables upon adding data set B suggests that standard political manifestos are significantly different to not only the control group data but also the set of FRLAVE manifestos. To gain further clarity, a series of Mann-Whitney U tests are carried out to investigate how data set B differs from that of data sets A and C.

There are three Mann-Whitney U tests for each LIWC category that can be carried out to investigate the potential similarities between FRLAVE manifestos and the standard political manifestos published during general election campaigns. The tests, along with the null and alternative hypotheses are stated below:

- **Test 1:** compares the mean values for each variable (LIWC category) in data sets A and C. That is, comparing the FRLAVE manifestos against the control group.
  - $\mathbf{H_0}$**:** The mean values of 79 LIWC categories in FRLAVE manifestos and the control group are equal.
  - $\mathbf{H_A}$**:** The mean values of 79 LIWC categories in FRLAVE manifestos and the control group are not equal.
- **Test 2:** compares the mean values for each variable (LIWC category) in data sets B and C. That is, comparing standard non-extremist political manifestos against the control group.
  - $\mathbf{H_0}$**:** The mean values of 79 LIWC categories in non-extremist political manifestos and the control group are equal.
  - $\mathbf{H_A}$**:** The mean values of 79 LIWC categories in non-extremist political manifestos and the control group are not equal.
- **Test 3:** compares the mean values for each variable (LIWC category) in data sets A and B. That is, comparing the FRLAVE manifestos against standard non-extremist political manifestos.
  - $\mathbf{H_0}$**:** The mean values of 79 LIWC categories in FRLAVE manifestos and standard non-extremist political manifestos are equal.
  - $\mathbf{H_A}$**:** The mean values of 79 LIWC categories in FRLAVE manifestos and standard non-extremist political manifestos are not equal.

The full results of these tests can be found in Appendix A in Table 9.3. A summary of said results can be found below in Table 5.2.

Table 5.2: Table summarising results of Mann-Whitney U tests comparing data in data set A, B and C; with the aim of investigating the similarity of non-extremist political manifestos to FRLAVE manifestos.

Summary Result	A *cf.* C	B *cf.* C	A *cf.* B
No. of Non-Similar Variables	20 (25%)	64 (81%)	60 (76%)
No. of Similar Variables	59 (75%)	15 (19%)	19 (24%)

As can be seen from Table 5.2, the number of LIWC categories in which the values are similar to that of the control group is significantly different in data set A and B. The standard non-extremist political manifestos have over three times less similar categories with the control group than the extremist manifestos; this would suggest that the non-extremist manifestos are also very different to the extremist manifestos. This is confirmed by the third Mann-Whitney U test which compares these two groups of data directly. Non-extremist manifestos differ, in a statistically significant manner, to FRLAVE manifestos in 60 of the 79 LIWC categories. The results of the above tests are analysed more closely to investigate whether or not non-similar LIWC categories in extremist manifestos may be due to general manifesto patterns. To do this, the significantly non-similar LIWC categories identified in Test 1 are noted, and the manner in which those categories differ are noted. Next, the results for those same categories in Test 2 are also noted and compared against Test 1. Finally, from Test 3, the results of the same categories are noted. Table 5.3 below displays the results of said further analysis, showing the manner in which the categories differ. As an example, In Test 1 (A *cf.* C), the mean value for the LIWC category *Emotional Tone* from data set A is far lower than that of data set C. In Test 2 (B *cf.* C), the mean value for *Emotional Tone* is found to be significantly higher in data set B than in C. This would infer that the lower emotional tone seen in FRLAVE manifestos (Group A) is not due to any wider pattern of lower *Emotional Tone* found in manifestos in general. Instead, the results point show the opposite, and this conclusion is further supported by the results of Test 3 (A *cf.* B), where *Emotional Tone* is found to be significantly lower in data set A than in data set B.

From Table 5.3, of the 20 LIWC categories found to be statistically non-similar when comparing extremist manifestos with the control data, ten of these are also found to be statistically non-similar in the same manner when comparing non-extremist political manifestos with the control data. This would suggest that 50% of the non-similar categories may be down to differences seen in manifestos more generally. Of those ten, three categories are found to be statistically significantly non-similar when comparing extremist

Table 5.3: Table showing significantly different LIWC categories identifying in the comparison of data set A and C. Table also shows the manner of difference in these categories when comparing data sets B and C, and A and B.

Category	A *cf.* C	B *cf.* C	A *cf.* B
Emotional Tone	Lower	Higher	Lower
3rd-Person Singular Pronouns	Lower	Lower	Higher
3rd-Person Plural Pronouns	Higher	—	Higher
Negative Emotion	Higher	—	Higher
Anger	Higher	Lower	Higher
Friends	Lower	Lower	—
Female	Lower	Lower	—
Discrepancy	Higher	Lower	Higher
Hear	Lower	Lower	Higher
Feel	Lower	Lower	—
Ingestion	Lower	Lower	—
Risk	Higher	Higher	Lower
Relativity	Lower	—	Lower
Motion	Lower	—	Lower
Time	Lower	Lower	—
Leisure	Lower	Lower	—
Home	Lower	—	Lower
Death	Higher	Lower	Higher
Netspeak	Lower	Lower	—
Nonfluencies	Lower	—	—

and non-extremist manifestos, suggesting that said three categories should be not be seen as being part of a general pattern in manifestos. Thus, of the 20 LIWC categories found to be statistically non-similar when comparing extremist manifestos with the control data in dataset C, the results in seven of said categories are potentially due to a wider pattern in manifestos generally; these categories are the following: *Friends, Female, Feel, Ingestion, Time, Leisure* and *Netspeak*. Where the other 13 categories are concerned, this study regards the above analysis as sufficient evidence to conclude that standard non-extremist political manifestos are significantly different to FRLAVE manifestos. This study now moves on to looking at a more specific range of LIWC categories, beginning with a focus on pronoun-based categories in the following subsection.

5.1.1 Pronoun Usage: We like Us more than We like Them

As discussed in Chapter 3, there have already been studies that use LIWC to analyse extremist texts from a variety of sources and containing a variety of ideologies. In order to identify any generalised patters across extremist text, and to check that the data used in this study is not totally different to data used in previous studies, this chapter investigates whether or not the manifestos used in this study contain similar language patterns to extremist data used in previous studies. Specifically, research question 1 asks: *do FRLAVE manifestos contain similar language patterns to extremist texts from actors studied in previous research*?. Alongside research question 1 this chapter also provides evidence towards answering research question 3(b). In order to further support a social identity approach to extremism, this study investigates whether a number of models seen in social identity theory are applicable in the manifestos of FRLAVEs. One such model is Smith's (2000) framing of prejudice as group-based emotion. Research question 3(b) asks if FRLAVE manifestos support the conceptualisation of prejudice as group-based emotion? That is, in an instance of extreme prejudice — which said manifestos are assumed to harbour — is there also a significantly increased focus on groups and emotion? If the answer to this question is yes, one would expect a higher than average use of plural pronouns and emotion-related words.

The first group of LIWC categories to be specifically investigated is the group of pronoun-based categories. These pronoun-based categories are the least likely in the LIWC standard dictionary to be effected by a change in context and thus less likely to be limited by LIWCs deterministic nature. High usage rates of plural pronouns (we, us, they, them) is suggested to infer the presence of group focus within the manifestos of FRLAVEs. This links into Smith's (2000) model of prejudice as group-based emotion and social identity theory in general. The group of pronoun-based LIWC categories consists of the following categories, shown below in Table 5.4.

Of the categories shown in Table 5.4, the following were identified as important in previous literature, as summarised in Table 3.3: *Total Pronouns; Personal Pronouns;First Person Singular Pronouns; First Person Plural Pronouns; Third Person Plural Pronouns,* and *Impersonal Pronouns*. With the social identity approach to defining extremism also in mind, this section has a further explicit focus on the *First-* and *Third Person Plural Pronoun* categories. This is owing to the focus within social identity on ingroups and outgroups. In a text, aside from naming any such groups directly (i.e. using their name, something which LIWC would be very unlikely to recognise), first- and third-person plural pronouns are the main method of making reference to an ingroup or outgroup respec-

Table 5.4: Table showing the pronoun-based categories of LIWC, along with the number of words and three examples in each category.

LIWC Category	Words	Examples
Total Pronouns	153	I, the, itself
Personal Pronouns	93	I, them, her
1st-Person Singular Pronouns	24	I, me, mine
1st-Person Plural Pronouns	12	we, us, our
2nd-Person Pronouns	30	you, your, thou
3rd-Person Singular Pronouns	17	she, her, him
3rd-Person Plural Pronouns	11	they, their, they'd
Impersonal Pronouns	59	it, it's, those

tively, although the outgroup being referenced may not always be the same — Dylann Roof uses 'they' to refer to his outgroups of Blacks, Hispanics and Jews.

Previous studies have found LIWC categories such as *Positive Emotion*; *Negative Emotion*; *Third Person Plural Pronouns* to be important for identifying extremist text. These categories are also important for further investigation of the social identity approach to extremism. Smith's (2000) model of prejudice as a group-based emotion infers that in texts that are heavily prejudiced, such as the manifestos contained in data set A, are likely to contain higher than average usage of group-based pronouns and negative emotion words and this is the basis of research question 3(b). To investigate these questions, data set A (FRLAVE manifestos) is compared against data set C (control) for the pronoun-focused LIWC categories listed above in Table 5.4. As seen earlier in this chapter, owing to the small (< 25) size of the data set, this comparison is performed using a Mann-Whitney U test since the data cannot be assumed to be normally distributed. Eight Mann-Whitney U tests are carried out, one for each pronoun-based LIWC category listed in Table 5.4. The hypotheses for each of these tests are as follows, with the full results shown in Table 5.5 below:

H_0: The mean values of the LIWC category in FRLAVE manifestos and the control group are equal.

H_A: The mean values of the LIWC category in FRLAVE manifestos and the control group are not equal.

As can be seen in Table 5.5, use of third person plural pronouns are significantly different in the ten manifestos when compared to the control data. This result agrees with,

Table 5.5: Table showing the results of Mann-Whitney U tests comparing FRLAVE manifestos to the control group in eight pronoun-based LIWC categories. Significant results where $p < 0.05$ are highlighted in bold.

LIWC Category	p-value	Manner of Difference
Total Pronouns	0.428	—
Personal Pronouns	0.220	—
1st-Person Singular Pronouns	0.428	—
1st-Person Plural Pronouns	0.875	—
2nd-Person Pronouns	0.172	—
3rd-Person Singular Pronouns	**0.003**	Lower
3rd-Person Plural Pronouns	**0.025**	Higher
Impersonal Pronouns	0.875	—

and supports, the previous research summarised in Table 3.3, from which third person plural pronouns are identified as an important LIWC category in extremist texts. Table 5.5 shows that authors of FRLAVE manifestos use significantly more third person plural pronouns than the control data. That is, words such as their, them, and they are found far more frequently in the manifestos of FRLAVEs. This significantly increased use of third person plural pronouns infers a focus on outgroups in the text. It should be noted that the LIWC category in question only recognises non-specific references to an outgroup; that is, as far as LIWC is concerned, an unnamed *them*. This is to say that there is already evidence pointing toward a high focus on outgroups without taking into account direct references to specific outgroups such as 'Muslims', 'Hispanics' and 'Jews'. However, specific references to an outgroup are also missed when analysing non-extremist texts with this LIWC dictionary. As opposed to the significant increase in third person plural pronouns, FRLAVE manifestos have significantly lower usage of third person singular pronouns when compared to the control data; that is, words such as she, her, and him. Viewing this result in isolation infers that FRLAVEs are not generally interested in specific people or, if they are, they do not write about it in their manifestos. However, when comparing non-extremist manifestos to the control data it was also found that third person singular pronouns were also used significantly less ($U = 0, p < 0.001$) and thus it can also be suggested that the statistical difference seen in FRLAVE manifestos is due to a difference seen in manifestos more generally. In terms of third person plural pronouns, when comparing non-extremist manifestos to control data no significant difference was found ($U = 28.5, p = 0.205$). This result suggests that the manifestos of FRLAVEs contain significantly higher than average usage of third person plural pronouns, supporting

the group-based portion of Smith's model of prejudice.

The relatively high usage of third person plural pronouns is noticeable when reading the texts, with words such as 'them' being commonly used to refer to the author's outgroup. In the manifesto of Dylann Roof for example, he states that segregation in the United States existed to "protect us from them. ... Not only did it protect us from having to interact with them, and from being physically harmed by them, but it protected us from being brought down to their level." The us-versus-them narrative is obviously found throughout the manifesto data. Brenton Tarrant, when explaining why he carried out his attack, states that "our homelands are our own and that, as long as a white man still lives, they will NEVER conquer our lands and they will never replace our people". The us-versus-them narrative may also point to a high level of first person plural pronouns, used in reference to the ingroup, present in the manifesto data. However, given the lone actor label assigned to the perpetrators, one might also expect first person plural pronouns to be used much less in their manifestos. In actuality, there is no significant difference in the use of first person plural pronouns. Instead, it is very likely (87.5%) that the average use of first person plural pronouns is the same across both FRLAVEs and control data. This could infer that, for the authors of the manifestos, an ingroup is present, seemingly arguing against the lone actor label. However, Pennebaker states that a "sense of 'groupness' is often illusory" (2011, p. 231), which could explain the presence of first person plural pronouns and inference of ingroups in the manifestos of lone actors. This would point toward the label of 'lone actor' being appropriate in describing the physical reality of the situation only, with questions being raised over the labels' suitability to describe the psychological reality so-called 'lone actors' find themselves in.

The statistical tests focusing on pronoun usage in the manifestos of FRLAVEs have shown that the manifestos analysed in this study continue the trend from previous studies; namely, of containing high levels of third person plural pronouns, reflected in significantly higher than average values in the LIWC category *Third Person Plural Pronouns*. This result shows initial support toward Smith's (2000) model of prejudice as group-based emotion showing that, at least when it comes to group-based part of Smith's model, the manifestos carry a high level of outgroup focus. In order to investigate the other half of Smith's model, the next subsection discusses LIWC categories focused on words of emotion.

5.1.2 Emotional Words: I'm Not Disappointed, Just Angry

Similarly to the previous section, this section focuses on emotional word-based categories in LIWC. These categories are listed below in Table 5.6. Whilst the pronoun-based categories in the previous section are relatively safe from a changed context leading to a change in meaning, emotion-based categories are not so safe. In particular words categorised as emotive are prone to use in sarcasm and irony, neither of which LIWC and many other tools like it are capable of identifying. This section continues the investigations from the previous section, looking for linguistic similarities in previous research and using the results as support towards Smith's (2000) model of prejudice as group-based emotion.

Table 5.6: Table showing the emotional word-based categories of LIWC, along with the number of words and three examples in each category.

LIWC Category	Words	Examples
Affective Processes	1393	happy, cried
Positive Emotion	620	love, nice, sweet
Negative Emotion	744	hurt, ugly, nasty
Anxiety	116	worried, fearful
Anger	230	hate, kill, annoyed
Sadness	136	crying, grief, sad

From the previous research summarised in Table 3.3, *Negative Emotion* and *Anger* are expected to be important when distinguishing between FRLAVE manifestos and control data. Again, due to the small size of the data sets involved, Mann-Whitney U Tests are performed for each LIWC category listed in Table 5.6, comparing FRLAVE manifestos to control data. The results of these Mann-Whitney U tests are presented below in Table 5.7.

From Table 5.7, the LIWC categories of *Negative Emotion* ($U = 4, p = 0.003$) and *Anger* ($U = 2, p = 0.001$) are found to be statistically significant when comparing the manifestos of FRLAVE manifestos with control data. Unsurprisingly, words relating to *Negative Emotion* and *Anger* are found far more frequently in FRLAVE manifestos than in control data. For example, Tarrant states that "mass immigration will disenfranchise us, subvert our nations, destroy our communities, destroy our ethnic binds, destroy our cultures, destroy our peoples", with 'destroy' appearing four times as a word in the LIWC categories *Negative Emotion* and *Anger*. These results add further support to the LIWC

Table 5.7: Table showing the results of Mann-Whitney U tests comparing FRLAVE manifestos to the control group in six emotional word-based LIWC categories. Significant results where $p < 0.05$ are highlighted in bold.

LIWC Category	p-value	Manner of Difference
Affective Processes	0.562	—
Positive Emotion	0.147	—
Negative Emotion	**0.003**	Higher
Anxiety	0.875	—
Anger	**0.001**	Higher
Sad	0.313	—

categories identified as important in previous research, as shown in Table 3.3. In the previous section, LIWC analysis has already shown that FRLAVE manifestos contain a significantly higher level of third person plural pronouns and normal level of first person plural pronouns (despite their lone actor label), suggesting the presence of a group focus within the manifesto. Coupled with results in Table 5.7 showing a significantly higher usage of words in the LIWC categories *Negative Emotions* and *Anger*, this suggests that FRLAVE manifestos may be an excellent real-world example of Smith's model of prejudice as group-based emotion. This further supports a social identity approach.

Several other emotion-based LIWC categories were found to be important in previous research when differentiating between extremist and non-extremist texts. These are *Affective Processes*, *Positive Emotion* and *Anxiety*. Words relating to *Positive Emotion* are found significantly less in a number of previous studies, but that is not the case in this study. From a Mann-Whitney U Test comparing *Positive Emotion* in FRLAVE manifestos and control data, it was found that there is a 14.7% chance that the mean value of *Positive Emotion* in both data sets is equal ($U = 16.5, p = 0.147$). Such a percentage is too high to reject the null hypothesis, and this study cannot support a conclusion that *Positive Emotion* is significant when distinguishing between FRLAVE manifestos and control data. The difference in findings between this study and previous research might suggest a change in the more recent FRLAVE manifestos to using more words relating to *Positive Emotion*, but this is not investigated further in this study. The *Affective Processes* category is the overarching category of the emotion-word based categories and thus is largely a reflection of the usage rates in other emotional categories. Although found significant in a limited number of previous studies, the category is not found to be significant in this study. Rather, a Mann-Whitney U Test comparing FRLAVE manifesto usage of *Affective Processes* with

that of control data found the category to be non-significant ($U = 24, p = 0.562$). This finding suggests there is a 56.2% chance that the mean values for *Affective Processes* is equal across control data and the manifestos of FRLAVEs. Similarly, a Mann-Whitney U Test for *Anxiety* ($U = 28.5, p = 0.875$) found an 87.5% likelihood that the mean values are equal in both control data and FRLAVE manifestos.

5.2 LIWC Categories of Interest: Risking Death

Previous sections have now discussed pronoun- and emotion-based LIWC categories and how their usage in the manifestos of FRLAVEs differs from their usage in control data, providing evidence supporting the relevance of Smith's (2000) model of prejudice as group-based emotion to said manifestos. In order to complete the investigation into research question 1 — comparing LIWC categories identified as important by this study with those in previous research — this section looks at all other available LIWC word-based categories (punctuation-based categories are not included) that are identified as important by this study or previous research. These are a combination of categories listed in Table 3.3 and categories found to be statistically significant after performing Mann-Whitney U tests on each LIWC category to compare FRLAVE manifestos with control data. The categories found to be important range from the more obvious categories such as *Death* and *Risk* to the less obvious, oddly baking-focused, category of *Ingestion* related words. After running Mann-Whitney U Tests for each category, the following categories were identified as being important, shown in Table 5.8.

Working through Table 5.8, *Emotional Tone* is identified as significantly different ($U = 4, p = 0.003$) in FRLAVE manifestos. *Emotional Tone* is a summary variable and reflects the ratio of *Positive Emotion*- and *Negative Emotion*-words. Since *Negative Emotion* words are used significantly more in FRLAVE manifestos and *Positive Emotion* words are not found to differ (at least not significantly), it is of little surprise that *Emotional Tone* is found to be significantly lower in the manifestos of FRLAVEs than in control data. That is, the tone of FRLAVE manifestos is significantly more negative than control data. Torregrosa et al. (2019) also found that the *Emotional Tone* of ISIS supporters' tweets were significantly more negative when compared with a control group. This would suggest that no matter the ideology involved, extremists texts are likely to be significantly more negative in their emotional tone than control data; a result to be expected.

There are a number of linguistic categories that were also found to be important by

Table 5.8: Table showing LIWC categories (not including pronoun- or emotion-based categories) identified as important by Mann-Whitney U tests comparing FRLAVE manifestos with control data. Also included are categories identified as important in previous research.

LIWC Category	Importance Identified By
Emotional Tone	MWU Test
Words > Six Letters	Previous research
Articles	Previous research
Prepositions	Previous research
Auxiliary Verbs	Previous research
Quantifiers	Previous research
Friend	MWU Test
Female	MWU Test
Cognitive Processes	Previous research
Discrepancy	MWU Test
Certainty	Previous research
Differentiation	Previous research
Perceptual Processes	Previous research
See	Previous research
Hear	MWU Test
Feel	MWU Test
Biological Processes	Previous research
Ingestion	MWU Test
Risk	MWU Test
Relativity	MWU Test
Motion	MWU Test
Time	MWU Test
Leisure	MWU Test
Home	MWU Test
Death	MWU Test
Informal Language	Previous research
Netspeak	MWU Test
Assent	Previous research
Nonfluencies	MWU Test

previous studies, namely *Words > Six Letters*, *Articles*, *Prepositions*, *Auxiliary Verbs* and *Quantifiers*. Aside from *Words > Six Letters*, the four linguistic categories were only found to be important when comparing lone actor texts to various internet-sourced texts by Kaati, Shrestha and Sardella (2016). These categories are not found to be of any particular importance in other previous research and the results of this study do not align with Kaati, Shrestha and Sardella's results. Rather, the results of this study report a non-significant difference in usage of *Articles* ($U = 17, p = 0.181$); that usage rates of *Prepositions* were equal in FRLAVE manifestos and control data ($U = 30, p = 1$); a non-significant difference in usage of *Auxiliary Verbs* ($U = 25, p = 0.635$); and a non-significant difference in the usage of *Quantifiers* ($U = 14.5, p = 0.093$). Finally, this study also reports a non-significant difference in the usage rates of *Words > Six Letters* ($U = 16, p = 0.147$) when comparing FRLAVE manifestos and control data. Thus, this study has no evidence to reject the null hypotheses' of the Mann-Whitney U Tests for these LIWC categories. That is, contrary to previous research this study finds no evidence to suggest that there is a difference in the usage rate of *Words > Six Letters*, *Articles*, *Prepositions*, *Auxiliary Verbs* and *Quantifiers* when comparing the manifestos of FRLAVEs and control data.

Words in the LIWC categories *Friends* and *Female References* are found to be used significantly differently by the Mann-Whitney U tests performed for these categories by this study. FRLAVE manifestos are found to use words in these categories significantly less than control data; with results of *Friends*: ($U = 9.5, p = 0.025$) and *Female References*: ($U = 8, p = 0.015$). The reasons for this are not fully clear. In terms of category groups, *Friends* and *Female References* are included as part of the wider *Social Processes* category along with *Family* and *Male References*. The results of the other categories in this group are as follows: *Social Processes* ($U = 20, p = 0.313$); *Family* ($U = 14, p = 0.093$); *Male References* ($U = 18, p = 0.220$). This study notes that in all of these social categories, usage rates are lower in FRLAVE manifestos than in control data, although not always significantly lower. Whether this points to a lack of social life in authors of FRLAVE manifestos is unknown and to suggest this was the case would be stereotype-based speculation at best. The distinct lack of *Female References* compared to *Male References* is interesting, especially as two Incel manifestos are included in the dataset, which one would expect to contain a high volume of references to females. This expectation is proven correct when looking at the values for *Female References* amongst the two incel manifestos: the manifesto of Christopher Sean Harper-Mercer has a value of 0.82%, whilst Elliot Rodger's manifesto has a value of 1.5%; the highest amongst the eight other manifestos in data set A is 0.22%. This may reflect the male-dominated nature of the far right generally, especially given that all texts included in the FRLAVE

manifesto dataset are authored by men. However, when using Mann-Whitney U tests to compare non-extremist manifestos to control data, usage rates of words in the LIWC categories of *Friends* ($U = 0, p = 0.000$) and *Female References* ($U = 0, p = 0.000$) were also found to be significantly lower in non-extremist manifestos. In fact, every social LIWC category was found to be used significantly less in non-extremist manifestos when compared to control data. Given this information it is hard to form a solid conclusion, as this study cannot be sure whether the difference in usage rates found in the LIWC categories of *Friends* and *Female References* are down to a property of FRLAVE manifestos or a property of manifestos more generally.

A number of LIWC categories related to cognitive processes are identified as important in previous research. Indeed, the category *Cognitive Processes* is itself shown to be important by Kaati, Shrestha and Sardella (2016) when comparing texts from lone actors with texts from the internet forum Stormfront. *Cognitive Processes* is an overarching LIWC category that contains words from a number of sub-categories. These sub-categories are: *Insight*, *Causation*, *Discrepancy*, *Tentative*, *Certainty* and *Differentiation*. Of these sub-categories, *Discrepancy* is found to be significant by this study ($U = 9.5, p = 0.022$); and *Certainty* and *Differentiation* are found to be important by previous research. This study finds that words in the *Discrepancy* category such as 'should' and 'would' are used significantly more in the manifestos of FRLAVEs than in control data. Dylann Roof for example uses 'would' three times in one sentence, stating that "me and White friends would sometimes would watch things that would make us think that 'blacks were the real racists' and other elementary thoughts like this". The result from comparing *Discrepancy* use in non-extremist manifestos and control data is found to be significantly lower ($U = 5, p = 0.001$), suggesting that the high use of discrepancies in FRLAVE manifestos is not due to any pattern found in manifestos generally. Collectively, these results provide evidence that the LIWC category *Discrepancy* can be used to distinguish between control data and the manifestos of FRLAVEs. This study found none of the other categories related to *Cognitive Processes* to be significant, and thus a clear conclusion cannot be made regarding the importance of *Cognitive Processes*, *Certainty* or *Differentiation*. When non-extremist manifestos are taken into account, a potential conclusion becomes no clearer. When comparing the LIWC category *Cognitive Processes* and the related sub-categories, every single category was found to be significantly different. Of said categories, *Cognitive Processes* ($U = 4, p < 0.001$); *Insight* ($U = 1, p < 0.001$); *Discrepancy* ($U = 5, p = 0.001$); *Tentative* ($U = 0, p < 0.001$); *Certainty* ($U = 18.5, p = 0.036$) and *Differentiation* ($U = 2, p < 0.001$) were all found to be used at a significantly lower rate in non-extremist manifestos than in control data. The

lone anomaly is the *Causation* category, which is found to be used significantly more ($U = 1, p < 0.001$) in non-extremist manifestos. This study makes the cynical assumption that such high use is due to each non-extremist political manifesto spending a good amount of time arguing that any political party except themselves is the cause of all of the problems. Of the LIWC categories that involve cognitive processes, this study finds that only *Discrepancy* is shown to be significant when it comes to identifying FRLAVE manifestos, but this is not supported by previous research.

Biological Processes and *Ingestion* are perhaps some of the more unlikely categories that are identified as being important when comparing FRLAVE manifestos and control data. *Biological Processes* is identified as important by Kaati, Shrestha and Sardella (2016) when comparing lone actor texts to Stormfront forums, whilst *Ingestion* is found to be used significantly ($U = 6, p = 0.007$) less in FRLAVE manifestos than in control data by this study. Similarly to *Cognitive Processes*, *Biological Processes* is a category largely made up of a number of sub-categories; these include *Body*, *Health*, *Sexual* and *Ingestion*. When comparing non-extremist political manifestos with control data, all categories under *Biological Processes* are found to be significantly different. *Health* ($U = 12.5, p = 0.008$) is found significantly more in non-extremist political manifestos than in control data, likely due to the focus on health care, especially in UK party politics and the existence of the National Health Service. All other categories listed here are found significantly less in non-extremist political manifestos when compared to normal text; thus the finding that FRLAVE manifestos also have a significantly lower use of *Ingestion* words may be due to a stylistic difference in manifestos. More likely, it is simply down to a difference in topic focus. A far right extremist is unlikely to devote a portion of their manifesto to discussing their love of baking (there are a surprising amount of baking-related words in the *Ingestion* category).

Of particular interest to this study is the group of LIWC categories found under *Drives*. *Drives*, as well as being its own category, is made up of the following sub-categories: *Affiliation*, *Achievement*, *Power*, *Reward* and *Risk*. During previous research, none of these categories were found to be important when differentiating between extremist and normal content. This study finds similar results, with *Risk* being the only category to be identified as statistically significant ($U = 8.5, p = 0.016$), when comparing FRLAVE manifestos with control data. Words in the *Risk* category, such as 'danger' and 'doubt' are found to be used significantly more often in FRLAVE manifestos when compared to normal text. When comparing non-extremist political manifestos to control data in these categories, *Drives* ($U = 0, p < 0.001$), *Affiliation* ($U = 0, p < 0.001$), *Achievement*

($U = 0, p < 0.001$), *Power* ($U = 0, p < 0.001$) and *Risk* ($U = 0, p < 0.001$) are all found significantly more in non-extremist political manifestos. Based on these results, a conclusion cannot be made as to whether the LIWC category *Risk* is of importance when identifying the manifestos of FRLAVE, especially considering that this group of categories as a whole (aside from *Reward*) are used more often in non-extremist political manifestos.

The LIWC categories of *Relativity*, *Motion*, *Space* and *Time* are unlikely to be the cornerstone of identifying extremist texts, but they are found to be surprisingly significant by this study. When comparing FRLAVE manifestos to control data, *Relativity* ($U = 9, p = 0.022$), *Motion* ($U = 10, p = 0.031$) and *Time* ($U = 9, p = 0.022$) are all found significantly less in FRLAVE manifestos. When comparing non-extremist political manifestos to control data, *Space* ($U = 6, p = 0.001$) is found significantly more and *Time* ($U = 1, p < 0.001$) significantly less in non-extremist political manifestos. Aside from *Time* being found significantly less in manifestos, no general patterns are immediately obvious. When comparing FRLAVE manifestos to control data, *Space* ($U = 27.5, p = 0.792$) is the only category found to not be significantly different. Of the FRLAVE manifestos, the manifesto Stephan Balliet contains the most *Space* words, with a value of 7.77. Although most of the words from the *Space* category that are also found in Balliet's manifesto are fairly arbitrary, 'borders', 'country', 'west' and 'western' all stand out. Unfortunately, Balliet's use of these words is uninteresting, the highlight being that one of the two uses of 'west' is a misspelling of vest. Whilst some of the words contained in the *Space* category have a potential link to common far right topics such as immigration, their usage in that context is not common enough, even in FRLAVE manifestos.

The personal concerns of extremists is usually of little interest, yet this study finds three categories within the personal concerns group that are identified as statistically significant when comparing FRLAVE manifestos to control data. *Leisure* ($U = 9, p = 0.022$) and *Home* ($U = 8, p = 0.016$) are both found significantly less often in FRLAVE manifestos than in control data. On the other hand, in what cannot be considered a surprise, references to *Death* ($U = 6.5, p < 0.007$) are found significantly more often in FRLAVE manifestos than in control data. In non-extremist political manifestos, when compared to control data, references to *Leisure* ($U = 7, p = 0.002$) are also found significantly less often, thus a conclusion is hard to come by with regards to this category. In all likelihood, similarly to the *Ingestion* category discussed earlier, this is simply not a category reflected in the usual topics of manifestos generally. *Home* ($U = 29.5, p = 0.235$) is not found to be significant when comparing non-extremist political manifestos to control data, suggesting that a lack of words in the *Home* category may be important when it comes to

FRLAVE manifestos. This could suggest a lack of what might be referred to as a 'home life', although it could also be a reflection of topic focus in FRLAVE manifestos. References to *Death* ($U = 12.5, p = 0.008$) are found significantly less often when comparing non-extremist political manifestos to control data, lending support to the LIWC category *Death* being important when identifying FRLAVE manifestos.

Before moving onto the two most interesting groups of LIWC categories, a number of categories under the *Informal Language* group of categories are identified as statistically significant by this study when comparing FRLAVE manifestos to control data. *Informal Language* is itself found to be important by Kaati, Shrestha and Sardella (2016) when comparing lone actor texts to blogs. They also find *Assent* to be important when comparing lone actor texts to posts from an Irish online message board. This study finds that *Netspeak* ($U = 10, p = 0.031$) and *Nonfluencies* ($U = 8, p = 0.016$) are both used significantly less in FRLAVE manifestos than in control data. These results are mirrored by the comparison of non-extremist political manifestos to control data, which also finds that *Informal Language* ($U = 10.5, p = 0.005$), *Netspeak* ($U = 17.5, p = 0.029$), *Assent* ($U = 1.5, p < 0.001$) and *Nonfluencies* ($U = 9, p = 0.003$) are all found significantly less in non-extremist political manifestos. These results are somewhat surprising, in that FRLAVEs are often linked to a ever-growing variety of online forums, sites and messenger services. Based on this, one might expect their manifestos to contain at least an average level of netspeak, but results of this study show that this is not the case. It is not clear whether this is a reflection of the manifestos themselves, or the *Netspeak* category. For instance, this research would classify the copypasta from Brenton Tarrant's manifesto (discussed in Chapter 1) as Netspeak, yet clearly it is unsuitable to be included in the LIWC category as it is several hundred words long. In short, no conclusions can be made regarding any of the *Informal Language* categories in LIWC and their importance to identifying FRLAVE manifestos.

Finally, there is one group of LIWC categories that have presented themselves as particularly interesting during analysis. *Perceptual Processes* and the subcategories of *See*, *Hear* and *Feel* are often identified as important in previous research and also in this study. This group is discussed in dedicated separate section, found below.

5.2.1 Perceptual Processes

Perceptual processes refers to a group of LIWC categories focused on sensory-based actions. The group consists of the main category, *Perceptual Processes*, and the sub-

categories of *See*, *Hear* and *Feel*. *Perceptual Processes* are identified as important by Kaati, Shrestha and Sardella (2016) when comparing lone actor texts to blogs; and *See* was found to be important when comparing lone actor texts to texts from Stormfront and an Irish online forum (Boards.ie). Both were found to be important when comparing lone actor texts to a collection of texts from blogs, stormfront and the Irish online forum. Seemingly in opposition to Kaati, Shrestha and Sardella's findings, this study finds that the categories *Perceptual Processes* ($U = 17, p = 0.181$) and *See* ($U = 22, p = 0.428$) are not significantly different in FRLAVE manifestos when compared to control data. Rather, this study finds the categories *Hear* ($U = 4, p = 0.003$) and *Feel* ($U = 10, p = 0.031$) to be used significantly less by FRLAVE manifestos than control data. When comparing non-extremist political manifestos to control data, *Perceptual Processes* ($U = 0, p < 0.001$), *See* ($U = 0, p < 0.001$), *Hear* ($U = 0, p < 0.001$) and *Feel* ($U = 2, p < 0.001$) are all found significantly less often in non-extremist political manifestos. In terms of this study, this would suggest that significantly lower usage of words found in the *Hear* and *Feel* category may be part of a wider pattern found in manifestos more generally. These results might suggest that this group of categories are not widely used in manifestos more generally, although this does not initially line up with the findings of this study with regards to the *Perceptual Processes* and *See* category usage in FRLAVE manifestos. This study finds *Perceptual Processes* and ($U = 17, p = 0.181$) and *See* ($U = 22, p = 0.428$) to not be significantly different when comparing FRLAVE manifestos with control data, which gives no indication of the manner of the significance identified by Kaati, Shrestha and Sardella (2016).

Conducting a more in-depth investigation of the LIWC categories *Perceptual Processes* and *See*, this study finds a number of words in said categories that are primed for misinterpretation, especially when the analysed text is authored in an extremist content. Sorting the dataset of FRLAVE manifestos in descending order of word usage in the *See* category, the manifestos of Dylann Roof and Christopher Sean Harper-Mercer are identified as having the largest usage rates of *See* words, at 3.4% and 2.64% of total word count respectively. Table 5.9 below shows the words in each of the two manifestos that are read and counted by the *See* category LIWC.

The next item to consider is which of the words shown in Table 5.9, if any, are used very frequently. That is, which of the words account for the significantly higher usage of *See* words in these manifestos? Table 5.9 shows that the frequency count of words in the *See* category in both manifestos is heavily skewed towards use of 'black' and 'white'. These results also do not consider variations of these words such as 'whites' or 'blacks',

Table 5.9: Table showing words identified by the LIWC category *See* in the manifestos of Dylann Roof (DR) and Christopher Sean Harper-Mercer (CSHM). Also included is the frequency count of each word in each manifesto. Words found in both are highlighted in **bold**.

DR (Freq)	CSHM (Freq)
beauty (2)	**black (30)**
black (16)	colors (1)
blue (1)	dark (1)
look (5)	darker (1)
saw (1)	darkest (1)
see (4)	darkness (1)
seeing (1)	red (1)
shows (1)	**see (2)**
sight (1)	showed (1)
view (1)	**watching (1)**
viewing (1)	**white (2)**
watch (1)	—
watching (1)	—
white (47)	—

use of which is found in both manifestos. Such words being included in the *See* category of LIWC suggest that they may be included as colours, as a variety of other colours are also included in this category such as red and blue, but no use of 'black' and 'white' in the manifestos of Dylann Roof or Christopher Sean Harper-Mercer are describing the colour of something. As a somewhat poor example (this study found it difficult to find examples that were not blatantly offensive), Dylann Roof talks about a "White superiority complex" and "White friends", or "black and White relations". Roof is not talking about the colour of a table: these are very clearly race-based references, but LIWC is only capable of recognising these as words of perception, not of race, discrimination and extremism. In literary theory terms, the signifier is the same, but the signified is very different. The obvious solution is to suggest creating an LIWC dictionary with such words included in a 'Racial References' or 'Ethnicity' category; but this is also flawed, what if someone really is talking about the colour of a table when they use 'white' or 'black'? This suggests that it is not the content of the LIWC dictionary that is the issue, but the context in which it is used. This alters the problem slightly, in that it is no longer an issue of modifying LIWC to recognise words in the correct way; it is now a problem of utilising programmes like

LIWC in the correct context such that they are capable of recognising words in the correct way. However, given the deterministic and largely inflexible nature of LIWC whilst utilising any dictionary, this problem is a complex one.

This study would also like to bring attention to a slight technical issue regarding LIWC and similar NLP programmes; that is, the importance of uppercase and lowercase letters. When a text is input into LIWC, the full text is converted to lowercase. There are several good reasons for this, such as capitalised words being treated as a seperate entity to their lowercase version. As an example, if LIWC did not convert a full text to lowercase before analysis, 'Sad' would not be counted as an occurrence of 'sad'. In such a scenario, converting the text to lowercase has, in terms of counting words, increased the accuracy of LIWC. There are some obvious downsides however, most noticeable in the manifesto of Dylann Roof. From Table 5.9, 'white' is used 47 times in Roof's manifesto, 100% of these 47 uses are capitalised. On the other hand, of the 16 uses of 'black' in Roof's manifesto, two are capitalised, with both appearing at the start of a sentence. This discrepancy is best observed when Roof is discussing his childhood, stating that "Growing up, in school, the White and black kids would make racial jokes toward each other". Based on Roof's actions and the context of his manifesto, a possible explanation for this oddity is that Roof's use of 'White' is to reinforce his perception of the white race as somehow higher or superior. Compare such capitalisation with how God, Jesus, and any other words used to refer to God or Jesus are capitalised in the Bible. This would suggest that the mere act of converting a text to lowercase can essentially delete a huge amount of meaning. Whilst this is a subtle difference, a text on the topic of race which contains many references to 'black' and 'white' is a very different thing to a text on the topic of race which contains many references to 'black' and 'White'. Again this shows how subtle differences in the signifier can have a significant effect on the signified.

5.3 Unrecognised Words: Have to Read Before You Can Count

As the previous section suggests, the most apparent limitation of LIWC is not the content of the dictionary being used, but rather the context in which the dictionary is being used. This infers that the standard dictionary included with LIWC that is used by this study is not suitable for use in the context of FRLAVEs. To give an initial idea of the suitability of the LIWC standard dictionary, the *Dictionary Words* category gives the percentage of words in a text that are recognised by whatever dictionary LIWC is using, in this case the standard dictionary. When comparing FRLAVEs to control data, *Dictionary*

Words ($U = 25, p = 0.635$) is not significantly different. As an aside, when comparing non-extremist political manifestos to control data, *Dictionary Words* ($U = 15, p = 0.018$) is significantly lower in non-extremist political manifestos, meaning that the amount of words recognised by LIWC in non-extremist political manifestos is significantly less than in control data. This may infer that the LIWC standard dictionary is not best suited for examining non-extremist political manifestos; however, no conclusions can be made regarding FRLAVE manifestos based on such a result. The main aim of this section is to investigate whether or not the list of words not recognised by LIWC in each manifesto contain a large amount of contextually-important information. This aids the investigation of research questions 2 and 4, which address the capability of tools such as LIWC to extract contextually relevant information, and the overall suitability of such tools for the analysis of manifestos by FRLAVEs. With the benefit of hindsight, contextually important information can be relatively easily identified simply by browsing through the list of non-recognised words. However, to do this manually proves tricky due to their size; LIWC recognised 74.57% of Anders Breivik's manifesto, therefore failing to recognise 25.43% of the manifesto. The unrecognised portion of Breivik's manifesto is 205,251 words, made up of 23,552 different individual words. Across all 10 FRLAVE manifestos included in the dataset, a total of 220,824 words are not recognised by LIWC, consisting of 29,313 different words. In order to reduce the size of this list, the FRLAVE manifestos can be grouped together in a number of ways, and then commonly missed words in those groupings can be identified. For example, the two incel manifestos of Elliot Rodger and Christopher Sean Harper-Mercer can be grouped together to identify commonly missed words more specific to an incel ideology. To investigate this further, the `nonDictionaryWords.txt` files for each FRLAVE manifesto are used. For each manifesto, `nonDictionaryWords.txt` contains every word that is not recognised by the LIWC dictionary. As a simple and obvious first step, all `nonDictionaryWords.txt` files were cross-referenced with each other to search for commonly missed words across all manifestos. This search returned no commonly missed words across all manifestos. Although FRLAVE manifestos have been used as a relatively homogeneous group of texts for the purpose of this thesis, it is still possible to create sub-groups based on the content and context of the manifestos and their associated attacks.

5.3.1 Brenton Tarrant, John Earnest & Patrick Crusius

John Earnest and Patrick Crusius both mention Brenton Tarrant's attack in Christchurch in their manifesto, so a subgroup of manifestos containing those of Brenton Tarrant, John Earnest and Patrick Crusius makes a sensible starting point. The results of cross-

referencing the list of missed words from these three words are found below in Table 5.10.

Table 5.10: Table showing common words not recognised by the LIWC standard dictionary across the three manifestos of Brenton Tarrant, Patrick Crusius and John Earnest.

Commonly Missed Words		
act	form	rest
ancestors	gun	rights
anti	immigration	shoot
case	manifesto	situation
civil	media	target
enough	numbers	trump
etc	own	ways
european	owned	whites
europeans	race	—

A number of words shown in Table 5.10 stand out, such as 'european', 'immigration' and 'trump' all pointing to commonly discussed topics within white nationalism. 'Shoot' and 'gun' also stand out as the common attack vector in FRLAVE attacks and in these attacks specifically. The results from cross-referencing missed words from Tarrant, Earnest and Crusius' manifestos reveal a number of contextually important words, varying from those pointing towards ideology to those pointing towards attack methods. It should be noted that although these words appear in these manifestos, this is no guarantee of that appearance being in the same context or even in the context one might come to expect. The presence of 'trump' on the commonly missed word list shown in Table 5.10 would be expected to be in the context of supporting Donald Trump, however this is not always the case. This thesis found that references to Donald Trump in FRLAVE manifestos were not always of a positive nature, with John Earnest describing Trump as an "anti-White, traitorous cocksucker" for his pro-Israeli political stance. Tarrant is more positive, supporting Trump "as a symbol of renewed white identity and common purpose", but was less supportive of Trump's position as President of the United States. When asked (by himself) whether he is a supporter of Donald Trump, Tarrant replies: "As a policy maker and leader? Dear god no." Earnest's description of Trump is a reflection of his manifesto in general, with a more anti Semitic focus than Tarrant or Crusius. This ties in with Earnest's attack targeting the Poway Synagogue in San Diego, California.

The presence of 'ancestors', 'european' and 'europeans' in Table 5.10 also points towards a common theme within the far right. Earnest declares that he is "a man of European ancestry", before later stating that a "part of my ancestors lives within me in this very moment". Crusius refers to a "nearly complete ethnic and cultural destruction brought to the Native Americans by our European ancestors" as a metaphor for his perceived "Hispanic invasion of Texas". Crusius' use of 'our' infers that he believes that he (and his intended audience) is descended from European ancestry. Tarrant's use of ancestors is aimed far more at his audience, in a paragraph almost entirely dedicated to the topic of ancestry he states that "your ancestors did not sweat, bleed and die in the name of a multicultural, egalitarian nation. ... We must strive to create a nation worthy of our ancestors". 'European' and 'Europeans' are used more in terms of an apparent "European race" or "European lands", usually in the context of such a race or lands being perceived as under threat from "mass immigration" and "foreign invaders". The use of 'gun', 'shoot' and 'target' are all initially assumed to be in the context of the acts carried out by Tarrant, Earnest and Cruisius. As expected, Earnest and Crusius use 'gun' in their discussion of attack methods: Crusius goes into more detail about the types of guns he was using and why he chose them, admitting that his choice of gun "isn't a great choice" due to overheating issues. None of Tarrant's uses of 'gun' are used in the context of directly discussing his choice of weapons used in the attack. Rather, Tarrant states that his long-term plan is to encourage the "removal of gun rights from Whites in the United States", essentially forcing an unspecified 'you' into fighting "to protect your rights and the constitution". John Earnest also states that he used a gun during his attack for "the same reason that Brenton Tarrant used a gun". In all, the nouns identified in Table 5.10 shows that a number of highly relevant nouns are not included in the standard dictionary of LIWC, and thus not identified by LIWC during analysis. This would suggest that LIWC, and its standard dictionary, is not capable of extracting contextually relevant information from the manifestos — and is thus not suitable for analysing them.

5.3.2 Anders Breivik & Brenton Tarrant

The next subgroup to be investigated is that of Brenton Tarrant and Anders Breivik. Tarrant states that he supports Breivik's actions, and goes on to claim that he "had brief contact with Knight Justiciar Breivik[1]". and received blessing for his own attack in Christchurch. Tarrant also states that he "only really took true inspiration from Knight Justiciar Breivik". When cross-referencing the lists of words missed by LIWC analysis

[1]Knight Justiciar is a reference to the fictional Knights Templar-based group created by Breivik in his manifesto; intelligence services found no evidence for such a groups existence.

of both manifestos, 952 words are found that are present in both manifestos but fail to be recognised by LIWC. With the benefit of hindsight, some of the more interesting words are listed below in Table 5.11.

Table 5.11: Table showing common words not recognised by the LIWC standard dictionary across the manifestos of Anders Breivik and Brenton Tarrant.

Commonly Missed Words		
africa	gun	preservation
amendment	hagia	race
anarchist	homeland	retaliation
ancestors	immigrant	rotherham
antifa	invaders	segregate
assimilation	justiciar	sniper
colony	lands	sophia
constantinople	minaret	strike
degenerate	minorities	target
deportation	monsters	templar
eradication	multicultural	trump
ethnocentric	nationalism	turks
europa	nazi	unholy
europe	occupiers	utopia
fascism	oswald	valhalla
foreign	pakistani	whites
genes	plunder	xenophobic

The presence of ‘trump’ in Table 5.11 is a red herring. Breivik’s manifesto was published in 2011, well before Donald Trump became U.S. President . Further investigation shows that Breivik is actually discussing “military trump cards”; “The Crusades in particular being the favoured ‘*trump card*’ in debates about Islam”; and a decision by the International Court of Justice that “creates a precedent that allows terrorism to trump security”. If the texts were not converted to lowercase beforehand, neither trump nor Trump would have been identified as a commonly missed word across this set of manifestos. Similar to the manifestos of Tarrant, Earnest and Crusius, words relating to the key theme of immigration are at the forefront of both manifestos. The presence of ‘deportation’, ‘homeland’, ‘immigrant’, ‘invaders’ and ‘occupiers’ all point toward a heavily anti-immigration narrative present within the manifestos.

The presence of 'constantinople', 'hagia', 'minarets' and 'sophia' suggest a narrative that attempts to be based in history more than most other manifestos. Breivik dedicates a substantial portion of his manifesto to the history of Christian/Muslim relations and the fall of Constantinople (now called Istanbul) is often cited. Hagia Sophia refers to the Hagia Sophia Mosque located in Istanbul. The Hagia Sophia was originally built as a church but was converted to a Mosque after the fall of Constantinople to the Ottoman Empire in 1453. Minarets refer to the four minarets added to the Hagia Sophia over time as part of its conversion to a Mosque. Both Breivik and Tarrant place a great deal of importance on 'liberating' Constantinople, with Tarrant stating that "UNTIL THE HAGIA SOPHIA IS FREE OF THE MINARETS,THE MEN OF EUROPE ARE MEN IN NAME ONLY", and that after liberation "Constantinople will be rightfully christian owned once more." Building on the evidence shown by the grouping of Tarrant, Crusius and Earnest, the manifestos of Breivik and Tarrant also show that LIWC fails to identify a number of highly relevant nouns to white nationalist ideologies, further suggesting that LIWC is not suitable for analysing such content.

5.3.3 John Earnest & Stephan Balliet

The manifestos of John Earnest and Stephan Balliet both contain a high level of anti-semitic material, supporting their attacks targeting Synagogues in California and Germany respectively. However, their manifestos are both on the shorter side, with Earnest's containing 4,353 words and Balliet's containing 2,484. 12 of the 17 pages of Balliet's manifesto are dedicated to the discussion of the weapons Balliet used, the benefits and limitations of using 3D-printed weaponry, and a basic attempt at the gamification of far right violent extremism. Gamification refers to the introduction of game-design concepts in a non-game context, usually in an attempt to increase engagement; Balliet includes a page of so-called Achievements such as "*Nailed it.* Kill someone with a nail-bomb". Due to Balliet's focus on the weaponry used during his attack, the list of of words present in both manifestos that are not recognised by LIWC is relatively short. This list is shown in Table 5.12.

'Gun', 'firearm', 'shoot' and 'target' are again present in both manifestos, showcasing the preferred use of firearms by the perpetrators of such attacking. 'Synagogue' is an obvious reflection of the anti-Semitic nature of Earnest and Balliet's manifestos and actions, given that synagogues were their eventual targets. Both encourage readers to burn down Synagogues, with Balliet including the act as one of his Achievements: "*The*

Table 5.12: Table showing common words not recognised by the LIWC standard dictionary across the manifestos of John Earnest and Stephan Balliet.

Commonly Missed Words	
degenerate	synagogue
firearm	target
gun	traitor
shoot	whites

Fire Rises: Burn down a synagogue". Given the wider context of the manifestos it is assumed that 'degenerate' is a generic negative reference to Earnest and Balliet's chosen outgroup. Rather, Balliet suggests that he needs to avoid cameras outside his target as he already looks like a terrorist based on being "a young, fit, white male with blond hair and blue eyes and without tattoos, piercings or other degenerate shit (beside from being a weeb[2])". Earnest uses 'degenerate' whilst attempting to justify his hatred of Jewish people due to their "pushing degenerate propaganda in the form of entertainment", although this is not expanded on. 'Traitor' appears to be a reference to pro-Israeli politicians, as shown by Earnest's earlier description of Donald Trump; both Earnest and Balliet encourage the killing of such traitors. 'Whites' is again identified although all three uses of 'whites' across both manifestos are capitalised. Earnest's use of 'Whites' is in a sentence deemed too offensive to include here; Balliet uses 'Whites' twice, both when discussing the objectives of his attack. His second objective is to "Increase the morale of other suppressed Whites by spreading the combat footage"; whilst his third objective is to "Kill as many anti-Whites as possible, jews preferred". The capitalisation of 'Whites' and non-capitalisation of 'jew' is consistent throughout Balliet's manifesto and is likely a reflection of Balliet using the same technique as Dylann Roof with regards to Roof's use of 'White' and 'black' to infer a perceived superiority. Whilst 'Jew' is present in the LIWC standard dictionary and therefore recognised and categorised during LIWC analysis, the failure to identify 'Synagogue' casts doubt on the overall suitability of LIWC when analysing anti-Semitic content.

[2]Weeb is a potentially derogatory term used to refer to non-Japanese people that are interested in Japanese culture, particularly Anime.

5.3.4 Christoper Sean Harper-Mercer & Elliot Rodger

Next to be analysed further are the two Incel manifestos used in this study, those of Christopher Sean Harper-Mercer and Elliot Rodger. Rodger published his manifesto first, and was far more biographical in nature, talking in length about his childhood; Rodger's manifesto contains 108,327 words. Mercer's on the other hand contains only 1,591 words. In his manifesto, Mercer states that Elliot Rodger, Adam Lanza, Seung Hui Cho, Vester Flanagan, Dylann Klebold and Eric Harris are "people who are elite, people who stand with the gods". All are perpetrators of shooting attacks, with Lanza the perpetrator of the Sandy Hook Elementary School attack; Seung Hui Cho the perpetrator of the Virginia Tech attack; and Klebold and Harris responsible for the Columbine shooting. The list of words not recognised by LIWC that are present in both manifestos is presented in Table 5.13 below. Although Incel ideology is typically associated with extreme misogyny, elements of white supremacy are present within the manifestos, in particular that of Christopher Sean Harper-Mercer. This is reflected in the missed words shown in Table 5.13.

Table 5.13: Table showing common words not recognised by the LIWC standard dictionary across the manifestos of Christopher Sean Harper-Mercer and Elliot Rodger.

Commonly Missed Words	
africa	garbage
alpha	gun
beast	planet
creature	population
europe	shoot

Although 'africa' is present in both manifestos, Rodger's use is innocent, discussing a family vacation to Morocco and not knowing "much about it except that it was in north Africa". Mercer on the other hand mentions Africa in a far more racial context, stating that "Africa would be better off without the black man, they should be executed and the black queen should take over Africa". 'Alpha' is a term more commonly associated with Incel subculture, usually used to refer to an 'Alpha male'. This is the case in the manifesto of Mercer, who argues that "when the girls would rather go with alpha thug black men, we can all agree that something's wrong with the world". Rodger's uses of 'alpha' occur in a wider variety of contexts, from discussing the film Alpha Dog to referring to the Alpha Phi Sorority group at his school, whom he later attempted to target in his attack. His only

use of 'alpha male' comes when discussing handling a firearm, stating that "After I picked up the handgun, I brought it back to my room and felt a new sense of power. I was now armed. Who's the alpha male now, bitches?". Not you.

Mercer and Rodger's use of 'beast' is inconsistent with regards to groups but consistent with regards to meaning; Rodger uses the term to refer to women, whereas Mercer uses it to refer to black males — both in highly negative contexts. This would infer that, in the context of FRLAVE manifestos, 'beast' can be taken as a highly negative emotive word. 'Creature' is used in a similar context, with Mercer stating: "The black man is the most vile creature on the planet"; and Rodger stating that there "is no creature more evil and depraved than the human female". 'Garbage' on the other hand is relatively unimportant, with Rodger speaking about a garbage truck and Mercer a band named Garbage. The presence of 'europe' and 'population' point towards the presence of the immigration theme seen in previous groups of manifestos, especially those of Anders Breivik, Brenton Tarrant, John Earnest and Patrick Crusius. Rather, Mercer encourages European citizens to become serial killers because of the strict gun laws, whilst Rodger states that Singapore airport was "much more entertaining than LAX or any airport in Europe that I've been to". Their use of 'population' is more sinister, with Rodger's proclaiming that he aims to place all women in concentration camps where "the vast majority of the female population will be deliberately starved to death". Mercer states that "latinos will also suffer a massive drop in population", although it is totally unclear why this is. 'Gun' and 'shoot' are present as usual, although only 'gun' is consistently used in the context of using a firearm for the purpose of their attack. Mercer's single use of 'shoot' discusses the mistakes he believes previous mass shooters have made: "they shoot wildly instead of targeted blasts". By analysing these subgroups of FRLAVE manifestos this thesis has shown that LIWC, utilising the LIWC standard dictionary, often fails to recognise words with a high level of contextual importance. Relating this back to research question 4, the evidence provided in this section suggests that LIWC is not suitable for analysing the manifestos of FRLAVEs.

5.4 Discussion and Summary

This chapter uses LIWC as a platform for a variety of analyses of FRLAVE manifestos. The first aim of this chapter is to investigate research question 1; that is, do FRLAVE manifestos contain similar language patterns to extremist texts from actors studied in previous research? The answer is both yes and no. The results presented in this thesis identify three LIWC categories that are significant, whilst also being identified as important by

previous research as stated in Table 3.3. These are *Third Person Plural Pronouns*, *Negative Emotion* and *Anger*. The results of this thesis, in terms of important LIWC categories identified, are closer to the results of Kaati, Shrestha and Sardella (2016) than other previous research. Six of the 20 categories identified as significant by this thesis are also found to be important by Kaati, Shrestha and Sardella when comparing lone actor texts to a variety of internet-sourced texts, such as blogs and Stormfront forum posts. These six categories are *Third Person Plural Pronouns*, *Negative Emotion*. *Anger*, *Relativity*, *Time* and *Leisure*. Thus when comparing the results of this thesis to previous research overall, the categories of *Third Person Plural Pronouns*, *Negative Emotion* and *Anger* stand out as being commonly important across all studies. This would infer that there is a consistent presence of an outgroup and a negative and angry narrative present throughout extremist text. However, it cannot be concluded whether said negative or angry narrative is always directed at the outgroup, even if this is very often the case. Other LIWC categories previously identified as important are not found to be significant by this thesis, and this thesis itself identifies a number of significant LIWC categories not previously mentioned.

In order to further investigate the suitability of a social identity approach to extremism, research question 3(b) asks if FRLAVE manifestos support the conceptualisation of prejudice as group-based emotion — in an instance of extreme prejudice, is there also a significantly increased focus on groups and emotion? In terms of Research Question 3(b) this thesis has shown that, based on LIWC analysis, there is a significantly higher presence of outgroup references and negative emotion in texts that accompany an act of extreme prejudice. Therefore this thesis concludes that with regards to *Third Person Plural Pronouns*, *Negative Emotion* and *Anger*, the FRLAVE manifestos used in this study do follow the same language patterns as seen in previous research, and that this lends a basic level of support to the application of modelling prejudice as group-based emotion to FRLAVEs. The evidence supporting Smith's (2000) model of prejudice add further viability to a social identity approach to extremism.

Deeper analysis of the eight pronoun-based LIWC categories show further support for prejudice as a group-based emotion. This thesis finds that of the eight pronoun-based LIWC categories, the use of *Third Person Singular Pronouns* and *Third Person Plural Pronouns* is significantly different in FRLAVE manifestos. More specifically, *Third Person Singular Pronouns* are used significantly less, whilst *Third Person Plural Pronouns* are used significantly more in FRLAVE manifestos. This would suggest that rather than a focus on others generally, there is a significant lack of focus on individual others and a significantly strong focus on grouped others. The significant lack of focus on individ-

ual others may also be due to a stylistic difference seen in manifestos more generally, as *Third Person Singular Pronouns* are also used significantly less in non-extremist political manifestos. These results do not take into account specific references to individual others or grouped others, whether a specific name of a person or group, or a reference to a wider racial group, as is often the case given the data used in this thesis.

Further analysis of other LIWC categories identified a wide variety of categories in which FRLAVE manifestos differed significantly. The summary variable *Emotional Tone* is found to be significantly lower in the manifestos of FRLAVEs than in control data. This result mirrors the previously stated results regarding a significantly higher use of *Negative Emotion* in FRLAVE manifestos, as *Emotional Tone* is largely a reflection of the ratio of *Positive Emotion* and *Negative Emotion* words in a text. That FRLAVE manifestos have a significantly high negative tone is unlikely to be a ground-breaking finding given their content and context. Although this thesis finds no significant result regarding *First Person Plural Pronouns*, it does find that FRLAVE manifestos contain significantly less words in the LIWC categories of *Friends* and *Female References* (except incel manifestos where *Female References* are higher), suggesting the 'lone' in the lone actor label may be well placed with regards to *Friends* and *Female References*. However, there is no significant difference identified regarding *Male References* or *Social Processes* more generally. This might suggest that the 'lone' in lone actor is suitable when it comes to general *Social Processes* and *Male References*. Taken together these findings do not support any conclusion regarding the presence of an ingroup in the manifestos of FRLAVEs; however such findings also do not rule out the lack of such an ingroup presence. In order to obtain a clearer understanding of this issue, direct references to ingroups and outgroups must also be considered, although LIWC is not suitable for extracting this information. In Chapter 6, this thesis explores the tool NLTK, which may be more suitable for extracting such direct references.

The in depth analysis of the LIWC categories *Perceptual Processes* and the subcategories of *See*, *Hear* and *Feel* show the limitations of LIWC and its standard dictionary. This study finds that all such categories are found significantly less in non-extremist political manifestos, and *Hear* and *Feel* are found significantly less in FRLAVE manifestos. Previous research found that *Perceptual Processes* and *See* were important when comparing lone actor texts to texts from a range of other sources; coupled with this non-significant difference found by this study in the *Perceptual Processes* and *See* categories justify further investigation. Upon further investigation it is found that the colours black and white make up the vast majority (95 of 125) of word-usage from these categories. However, the

inclusion of black and white in the *See* category is likely to be assumed under the context of a colour for describing something (a number of other colours are also included in this category). Upon manual inspection, every use of black and white in the manifestos of Dylann Roof and Christopher Sean Harper-Mercer was in a racial context, and it is likely to be the case that in a FRLAVE manifesto more generally, uses of black and white are going to be in a racial context. This finding explains the results for *Perceptual Processes* and *See* categories, but in doing so also suggests that LIWC is poor at extracting information in an accurate context, at least with regards to FRLAVE manifestos. An accidental finding during this analysis was that in the manifesto of Dylann Roof, 'white' was capitalised at all times whilst 'black' was not. This is initially missed by LIWC as the programme converts all the text into lowercase in order to increase the accuracy of word counting. 'White' and 'white' is still the same word after all, but in the context of Roof's manifesto the meaning is different, with the capitalisation compared to that of capitalising God or Jesus in the bible. The use is assumed to infer a level of superiority. LIWC, by converting all the text to lowercase, deletes the meaning of 'White' before the analysis has even started. Such a relatively small change in the signifiers, 'white' and 'White' can have a large effect on meaning. The signifier is automatically changed in an attempt to make the analysis more accurate in terms of word counting, but makes the analysis less accurate in terms of meaning. Situations such as this are very complex and there is no simple answer. Treating 'white' and 'White' as different words would undoubtedly effect the accuracy of the word count, although this may be lessened when both words would likely be placed in the same category. If 'white' is used at the start of a sentence talking about white tables, ideally then the resulting 'White' would be treated as the colour 'white' by LIWC, as it is by the standard dictionary. This would suggest that there is a level of inaccuracy that must be accepted. The issue of what level of inaccuracy is acceptable is another complex question entirely, exacerbated by the sensitivity of extremism as a topic and the potential worst-case scenario that could follow from inaccuracies.

The last section in this chapter explores what words are not recognised by LIWC, and thus are not accounted for in any way in its analysis. Although this thesis finds no significant difference in the value of *Dictionary Words* — the percentage of words in a text that are recognised by the LIWC dictionary — it is what those words are that is the issue. Across all ten FRLAVE manifestos used in this study, 29,313 different words are not recognised by LIWC. By grouping together some of the manifestos and looking at the words not commonly recognised by LIWC within each group, the amount of unrecognised words is reduced significantly to a more manageable level. The manifestos of Brenton Tarrant, John Earnest and Patrick Crusius are grouped together and a number of

far right ideological markers are present within the list of common unrecognised words within this group. This would suggest that although LIWC is not recognising a significantly different amount of words, compared to analysis of normal text, the importance of those unrecognised words may be significantly higher in FRLAVE manifestos. This remained the case throughout with three more groups tested, that of Anders Breivik and Brenton Tarrant; John Earnest and Stephan Balliet; and Christopher Sean Harper-Mercer and Elliot Rodger. The results consistently show a number of contextually important words that LIWC fails to recognise; showing a strong level of evidence that LIWC is poor at extracting contextually important information from text. In terms of research question two — can contextually important information and target information be automatically extracted from FRLAVE manifestos? — based on the evidence presented in this chapter this thesis has to conclude that accurately extracting such information is not possible using LIWC. This is not to say extracting such information is not possible with a different tool and this is the focus of Chapter 6. The results do suggest that LIWC is very well placed to extract pronouns from texts. This can give a general idea on the presence of outgroups in a text. The words in these pronoun-based categories are relatively safe from context, in that their meaning is unlikely to change across a multitude of different contexts. However, if LIWC is unsuitable for extracting contextual information, then without manual reading — or another method for extracting context — the results of LIWC analysis cannot themselves be placed into a wider context. To present results of LIWC analysis of text(s) without the wider context present within the text(s) leads down a path of technological determinism. To go back to the haystack metaphor, the aim is to learn about the entire haystack (needles and all) from the analysis. However, LIWC only really looks at the hay: it might miss the needles altogether, especially the important ones.

There has been a great deal of academic work attempting to identify a terrorist personality suggesting that terrorists are psychologically different from non-terrorists, an approach rooted in psychological determinism. However, this work has been largely fruitless as no personality differences have been identified between the terrorist and the 'normal person'. Alongside this issue, any deterministic approach to identifying violent extremists is prone to completely miss any potential violent extremists who dare exist outside of the pre-determined set of identifying values (Webber 2020b); or may falsely identify someone as a violent extremist who is in fact totally innocent. This thesis would ask why, when psychological determinism has been shown to be unsuitable in the context of identifying terrorists or violent extremists, is technological determinism likely to result in anything different? The results of this thesis fail to offer any level of support to a hypothesis that violent extremist manifestos can be identified via the makeup of their

linguistic components. Rather, this chapter shows that LIWC results of FRLAVE manifestos must be placed in a wider context, a context only capable of being extracted upon human reading of a manifesto. Put simply, results of LIWC analysis of FRLAVEs must be critically examined to such a level where it is quite possible that multiple human readings of the manifesto may offer a higher quality of analysis. Regarding LIWC specifically, a tool which claims to link language to psychology; it would appear that in the context of FRLAVEs the tool brings researchers back full-circle to the psychological determinism that has been shown not to work. It just does it a bit quicker and with an extra step that, on the basis of this chapter, is likely to obfuscate any results even further.

The next chapter builds on the limitations of LIWC discussed here using Natural Language Toolkit (NLTK) software to search FRLAVE manifestos for contextual information. The aim of this chapter is to investigate the utility of NLTK as an individual tool, and potential utility of NLTK alongside LIWC in order to cover the limitations of the other.

6 Investigating Noun Usage in Far Right Lone Actor Violent Extremist Manifestos

Following on from the LIWC analysis presented in the previous chapter, this chapter uses another piece of software, the Natural Language Toolkit (NLTK), to search for nouns in FRLAVE manifestos. Returning to the haystack metaphor, consider any given FRLAVE manifesto as a haystack. This section focuses on finding the needle, except in this case there are of course many needles that need to be found. This continues the investigation into research question 2: can contextually important information and target information be automatically extracted from FRLAVE manifestos? This then leads into research question 4, whether or not tools such as LIWC and NLTK are suitable for analysing said manifestos. First, each manifesto is searched for nouns using NLTK and the outputs are presented. This is followed by a manual search of the nouns in each manifesto for context-specific nouns; that is, nouns relating to attack and target information from the action carried out alongside the publication of the manifesto. This will also include a discussion of the contextually-relevant nouns identified in each manifesto, with the aim of discovering how often the authors of the manifesto include attack and target details, purposefully or otherwise, in the manifesto. The nouns identified in each manifesto are then compared against the words missed by LIWC when analysing the manifesto, with the discussion that follows supporting the conclusion that tools like LIWC should not be relied upon to identify relevant contextual information in FRLAVE manifestos. This is followed by a discussion that brings together all the results in this chapter, along with a summary of these results.

The summary discussion shows that, in answer to research question 2, NLTK is capable of extracting contextually relevant and target relevant information from the data, although a large amount of other data is extracted at the same time. When looking at groups of ideologically similar manifestos, or manifestos that share an inspirational link, relevant nouns are found to be shared amongst said groups, although these are not always used in the same context. Finally, when comparing the nouns identified by NLTK with lists of unrecognised words from the earlier LIWC analysis, it is found that LIWC recognises approximately 60% of identified nouns on average. Although it performs well with religious nouns, the LIWC standard dictionary is shown to be unsuitable for accurately analysing manifestos that contain a white nationalist, white supremacist or antisemitic narrative. To answer research question 4, comparing the results of LIWC and NLTK anal-

ysis of FRLAVE manifestos suggest that the LIWC standard dictionary is not suitable for analysing such material. NLTK analysis shows some improvement in terms of a capability to extract contextual information and thus should be seen as more suitable for analysing content such as the extremist manifestos.

6.1 Natural Language Tool Kit (NLTK) Analysis

This section will display the nouns identified in each manifesto by NLTK. As seen in the previous section, the results from tools like LIWC often lack contextual information. In order to further investigate research question 2 — whether or not contextually important information can be extracted from the data — nouns are automatically searched for in each manifesto, with the aim of identifying contextually relevant and frequently used nouns across FRLAVE manifestos. Since NLTK identifies a high proportion of nouns from each manifesto, these identified nouns are then narrowed down by cross-examining the list of nouns from each manifesto with context-specific information from the attack with which the manifesto is linked. This context-specific information can range from ideologically-focused words to target information and geographical locations. The secondary aim of this section is to investigate whether a tool such as NLTK is capable of identifying contextual information in FRLAVE manifestos to accommodate for contextual shortcomings in tools such as LIWC.

6.1.1 Manifesto Nouns: Anders Breivik (July 2011)

The manifesto of Anders Breivik is by far the longest used in this research, containing 807,125 words according to LIWC analysis. From further LIWC analysis Breivik's manifesto is, unsurprisingly, found to be highly negative with an *Emotional Tone* value of 22.72. [1] As shown by Chapter 5 however, LIWC analysis provides little to no contextual information to the analyser. With this in mind, NLTK is used to identify nouns and sort them in order of frequency of use in the manifesto. The results of this noun identification are found below in Table 6.1, showing the 60 most commonly found nouns identified by NLTK as being present in Breivik's manifesto.

As shown by Table 6.1, Islam is a key theme of Breivik's manifesto. References to

[1] *Emotional Tone* is a summary variable for both the positive and negative emotion categories. The higher the number the more positive the tone, with values less than 50 suggesting a negative tone (Pennebaker 2020).

Table 6.1: Table showing the 60 most common strings identified as nouns by NLTK present in the manifesto of Anders Breivik. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
Muslim (1689)	EU (502)	today (379)
Europe (1660)	s (473)	population (359)
Muslims (1490)	A (468)	culture (358)
Islam (1399)	Europeans (465)	example (348)
people (1375)	women (459)	death (347)
Islamic (1237)	men (451)	Knights (346)
world (930)	system (450)	multiculturalism (341)
time (903)	groups (442)	case (341)
countries (858)	society (438)	phase (337)
Christians (816)	individuals (435)	Western (334)
country (752)	Christian (423)	religion (333)
years (724)	immigration (422)	water (333)
war (712)	part (415)	point (330)
t (616)	children (410)	majority (330)
state (604)	West (403)	law (330)
order (599)	life (397)	Justiciar (329)
way (582)	history (396)	family (328)
government (576)	media (392)	century (327)
power (569)	Jihad (390)	Ottoman (320)
fact (519)	US (387)	number (308)

this theme are identified through nouns such as 'Muslim(s)', 'Islam', 'Islamic', 'Jihad' and 'Ottoman'; as well as a number of related nouns used less frequently and thus not shown in Table 6.1. Uses of 'Muslim' and 'Muslims' are taken as direct references to Breivik's outgroup, and are used 3,179 times, or 0.39% of Breivik's manifesto. LIWC returns a value of 1.1% for the *Third Person Plural Pronouns* category, and thus including these direct references would infer that 1.49% of Breivik's manifesto refers to his outgroup. There are also a wide variety of identified nouns that could be used to refer to this key theme of Islam, but in a less direct way. Nouns such as 'Mecca', 'Allah' and 'Sharia' are all heavily linked to Islam and likely used in an Islamic context. Of the identified nouns used more than 50 times in Breivik's manifesto, those that may be linked to Islam are used 7,652 times, or 0.94%. Thus the total usage for direct references and potential

references to Breivik's outgroup is in the range of $1.49\% - 2.43\%$, higher than the value found for *Third Person Plural Pronouns* by LIWC. This brings into question the capability of LIWC to identify the presence of an outgroup when direct references are used to refer to said outgroup; that is, if the outgroup is not referred to as 'they', 'them' or similar. Relating this issue back to literary theory and Saussure's (1916) approach to signs, LIWC does not identify all the signifiers for the same signified. On the other hand, the generalised signifiers that LIWC does identify such as 'them' and 'they' are not always used in reference to the same outgroup, or signified.

From Table 6.1 a number of contextually-significant nouns are identified. Breivik extensively discussed historical events, or at least his versions of historical events, focused largely on religious conflicts between Christianity and Islam such as the Crusades. Breivik divides his manifesto into books, and the first book, titled 'What you need to know, our falsified history and other forms of cultural Marxist/multiculturalist propaganda,' contains much of this historical discussion. This discussion is reflected in Table 6.1 by the frequent usage of nouns such as 'Christian(s)'. 'history', 'century' and 'Ottoman'. Feeding on Breivik's fascination with the Crusades, 2083 also spends the majority of 'Book 3' addressing his modern recreation of the Knights Templar organisation, previously heavily associated with the Crusades. Breivik gives himself the rank of Justiciar Knight, reflected in Table 6.1 with the presence of 'Knights' 346 times and 'Justiciar' 329 times. These findings would suggest that NLTK is capable, via the identification of nouns, of extracting a good deal of contextual information from 2083. With the benefit of hindsight, NLTK has extracted a number of references relating to Breivik's outgroup and his ingroup (albeit made-up). The issue with Breivik's manifesto is that the outgroup identified in his manifesto was not actually his target. Rather, Breivik targeted existing government and those he deemed to be future government leaders.

However, unlike other lone actor violent extremists Breivik's eventual target is relatively unrelated to his main outgroup. Breivik targeted two locations with two different attack methods. The Norwegian government complex in Oslo was targeted by a car bomb, before Breivik travelled to Utøya to carry out a mass shooting at a summer camp for the Workers' Youth League (a youth organisation linked to the Norwegian Labour Party). Based on this target information, a number of more target-focused nouns are searched for in the results of the NLTK analysis and the manifesto itself. Table 6.2 shows the results of using NLTK analysis of Breivik's manifesto for presence of nouns related to Breivik's eventual targets, whether that be geographical, names, attack method, or other variables.

Table 6.2: Table showing target-relevant nouns extracted by NLTK from the manifesto of Anders Breivik. Also shown is the percentage of uses of each word identified by NLTK.

Noun	NLTK Presence	Manifesto Presence	%-age Identified
oslo	133	137	97.1%
norway	215	221	97.3%
government	576	686	84.0%
parliament	47	88	53.4%
workers	68	75	90.7%
youth	114	122	93.4%
league	4	53	7.5%
summer	22	26	84.6%
camp	33	34	97.1%
gun	45	67	67.2%
car	113	126	89.7%
van	26	37	70.3%
bomb	95	110	86.4%
labour	125	165	75.8%
party	492	505	97.4%

Table 6.2 shows that nouns that may be related to Breivik's targets are also present in his manifesto, although such a statement is without any level of contextual analysis. As an initial example, the presence of 'summer' and 'camp' in Table 6.2 could point towards Breivik discussing his eventual target. In reality, 'summer' and 'camp' are never seen together in Breivik's manifesto, with the vast majority of Breivik's uses of both occurring in a historical context — referring to various military camp,s and points in time such as "during the summer of 1995". A single use of 'camp' in Breivik's manifesto stands out, where he provides an example of an intelligence gathering mission: "getting a job at the youth camp connected to the largest political party is one way of doing this". However, this is a single short sentence in a document containing over 800,000 words, and is therefore almost totally reliant on hindsight to identify. 'Workers', 'youth' and 'league' are also seen in various contexts but are never seen together or in reference to the organisation Breivik targeted. Similarly, 'car' and 'bomb' are seen together a total of 16 times in Breivik's manifesto: none in reference to Breivik's own attack methods, but in reference to previous attacks involving car bombs.

In terms of geographical information, NLTK appears to be suitable at extracting such information, such as names of countries and cities. Table 6.3 below shows the geographical nouns found more commonly than 'Oslo' in the manifesto of Anders Breivik. The table shows that whilst target-relevant locations such as Norway and Oslo are identified in Breivik's manifesto, they are not used with such frequency that they stand out. If anything, if one was asked to suggest a likely target location based on this table, Western Europe and the UK would be the obvious conclusions. This shows that this kind of analysis has the potential to not only fail to highlight target-relevant information, but even to mislead. Moreover, only a single use of 'Oslo' in Breivik's manifesto is in the context of targeting, with Breivik stating that "cultural Marxists/multiculturalists in Oslo may be the target today, but cultural Marxists in London, Paris, Berlin, Brussels, Milan or Madrid will be the target tomorrow". Thus, in one of the 133 uses of Oslo in Breivik's manifesto, Breivik refers to cultural Marxists and/or multiculturalists in Oslo being his target. There is, as far as NLTK can identify, no other target-relevant information that can be extracted form Breivik's manifesto.

The NLTK analysis of Breivik's manifesto also identifies some of his influences. Most notably, NLTK identifies a number of references to 'Fjordman', a Norwegian blogger by that pen-name, whose essays appear throughout Breivik's manifesto. Jackson (2013) found that 112,735 words in Breivik's manifesto are taken from Fjordman, and that Breivik's title - *2083: A European Declaration of Independence* - is largely derived from Fjordman's document titled *Native Revolt: A European Declaration of Independence*. A 2013 study by Sandberg reveals how Breivik refers to the "political demands and narratives of Fjordman" (2013, p. 74). Alongside Fjordman's work, the Unabomber manifesto authored by Ted Kaczynski in 1995 is plagiarised by Breivik, with references to leftism replaced with cultural marxism. In a closer look at the Fjordman essays present in Breivik's manifesto, Jackson identifies the influence of Bat Ye'or's Eurabian conspiracy theory. These findings are supported by the NLTK analysis of Breivik's manifesto: 'Fjordman' is found 59 times by NLTK, 'Bat', 'Ye'or' and 'Ye' are found 65, 40 and 27 times respectively. 'Eurabia' is identified 109 times by NLTK, with Eurabia-related references found on almost 130 occasions. This suggests that NLTK is capable of identifying influencing factors in attacker manifestos; in this case obviously focused on the names of those who influenced Breivik's ideology and actions.

Therefore, whilst NLTK has shown a capability to extract contextual information, this contextual information is limited by what the author of the manifesto includes in said manifesto. Using Breivik's manifesto as an example, NLTK cannot be relied on to ex-

Table 6.3: Table showing the names of countries and cities present in the manifesto of Anders Breivik, as identified by NLTK, along with the frequency with which each is included.

Location	Freq	Location	Freq
France	298	Pakistan	186
Germany	252	Bosnia	178
Israel	233	Saudi	178
Turkey	228	UK	164
Sweden	221	America	151
Norway	215	Britain	149
Russia	200	India	145
London	190	**Oslo**	133
Iraq	190		

tract contextual information relating to targets, as the authors of said manifestos cannot be relied upon to include contextual information relating to targets in their manifestos. Without the benefit of hindsight on the targets of Breivik's eventual attack, and given only his manifesto to analyse; in light of his clear and obvious focus on religion and historical religious conflicts, the only sensible conclusion would be that Breivik's target was to be a religious building or event. Therefore, whilst NLTK can be used to extract contextual information - and in doing so may add further depth to other tools such as LIWC - NLTK cannot be relied upon to extract contextual information relating to the potential target of an attack, as such information is not reliably included in the manifestos of FRLAVEs. Whether or not this is a direct limitation of NLTK and similar programmes, or a limitation inherited from the obvious limitations of the content of the manifestos used in this study is simply a matter of perspective; either viewpoint must agree that programs such as NLTK are essentially at the mercy of the authors of extremist manifestos as to whether they are actually of use. In relation to research question 2 then, the results of NLTK analysis of Breivik's manifesto suggest that NLTK can extract contextual information, but that the limitations of data must also be considered when answering the research questions fully.

6.1.2 Manifesto Nouns: Brenton Tarrant (March 2019)

The manifesto of Brenton Tarrant is, like Breivik's, on the longer side, coming in at 17,045 words. Tarrant uses many of the historical themes that Breivik discusses in his manifesto but does so in a much more succinct fashion. Under LIWC analysis, 84.03% of

the words in Tarrant's manifesto are recognised by the LIWC standard dictionary, leaving 2722 words that are not recognised. LIWC also finds that Tarrant's manifesto is more negative than Breivik's, with an *Emotional Tone* value of 13.65 compared to 22.72. However, although the manifesto of Brenton Tarrant does contain some narrative similarities to that of Anders Breivik, there is much less of a religious focus. This is reflected by Table 6.4 below, which shows the 58 most common nouns in Tarrant's manifesto, as identified by NLTK.

Table 6.4: Table showing the 58 most common strings identified as nouns by NLTK present in the manifesto of Brenton Tarrant. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
people (134)	fertility (20)	attacks (14)
attack (55)	replacement (20)	life (14)
time (53)	rates (20)	groups (14)
lands (43)	state (20)	media (14)
invaders (43)	years (20)	traitors (14)
culture (38)	change (20)	YOU (14)
nations (30)	children (18)	strength (14)
world (28)	immigration (17)	way (13)
Europe (28)	history (17)	immigrants (13)
t (28)	society (17)	labour (13)
nation (27)	cities (17)	matter (13)
peoples (25)	group (17)	United (13)
men (24)	THE (17)	nothing (13)
death (23)	war (16)	diversity (13)
https (23)	Were/are (16)	wealth (13)
future (23)	population (15)	IS (12)
race (23)	New (15)	Zealand (12)
victory (23)	force (15)	environment (12)
power (22)	truth (15)	
enemies (21)	beliefs (15)	

Given the similarities to Breivik's manifesto and Tarrant's choice of targets, two Mosques, one might expect for direct references to Islam and Muslims to feature heavily in Tarrant's manifesto. However, according to the NLTK analysis, this is not the case;

the most direct references to Islam used in Tarrant's manifesto are 'Islamic' and 'Muslims' (both used three times). From Table 6.4, Tarrant appears to prefer more generalised references to his outgroup such as 'invaders', 'immigrants', and 'traitors'. This more generalised language may have allowed others to take inspiration from Tarrant to commit attacks against relatively different targets. For instance, John Earnest and Patrick Crusius were both inspired by Tarrant but the target locations and outgroup were different across Tarrant, Earnest, and Crusius. However, whilst a more generalised manifesto may have allowed a wider audience to identify with Tarrant's manifesto, it is no guarantee that this helped inspire others. There is also evidence that the act itself may be more inspiration than any particular ideology or manifesto, with Earnest himself stating that "Tarrant was a catalyst for me personally. He showed me that it could be done". This raises a question regarding whether an attack carries more inspirational value than any manifesto that might be published alongside said attack; although investigating said question is not within the remit of this study. A number of contextually relevant nouns are identified by NLTK as being frequently used by Tarrant in his manifesto, these are shown in Table 6.5 below. The majority of these frequently used contextual nouns are ideologically focused and capture a slightly generalised version of Tarrant's ideology via the identification of nouns such as 'invaders', 'fertility', and 'replacement'. This is also the case regarding outgroup references, with Tarrant favouring generalised, indirect references such as 'invaders', 'immigrants', and 'traitors' over more specific, direct references. From further NLTK analysis, the most frequently used noun obviously linked to Tarrant's targeted outgroup is 'Mosque', which is used five times. References to Tarrant's targeted outgroup are few and far between, counting 11 in total, split between 'Muslim(s)', 'Islam', and 'Islamic'. This leads into the wider set of target-related nouns present in Tarrant's manifesto, shown below in Table 6.6.

Analysis of Tarrant's manifesto also identifies three direct references to both Anders Breivik and Oswald Mosley. Mosley was the leader of the British Union of Fascists from 1932-940, and had strong links with Nazi Germany. Tarrant's references to Mosley are all positive, with Tarrant stating that "I mostly agree with Sir Oswald Mosley's views" and that Mosley is the "person from history closest" to his beliefs. Similarly, Tarrant claims to have taken "true inspiration from Breivik", whilst also being given Breivik's "blessing for my mission" during brief contact with him; although it's not clear how, when or if this contact took place. Following on from the finding that NLTK identified influences of Breivik in his manifesto, NLTK also identifies the references to Breivik and Mosley in Tarrant's manifesto, supporting the suggestion that NLTK can identify such content in FRLAVE manifestos.

Table 6.5: Table showing the 18 most common contextually relevant nouns present in the manifesto of Brenton Tarrant, as identified by NLTK. Frequency of use is shown in brackets.

Identified Noun (Frequency)		
lands (43)	invaders (43)	race (23)
fertility (20)	replacement (20)	rates (20)
children (18)	immigration (17)	population (15)
traitors (14)	immigrants (13)	diversity (13)
Zealand (12)	environment (12)	birth (10)
birthrates (9)	Europeans (9)	invader (8)

Table 6.6: Table showing 12 target-relevant nouns present in the manifesto of Brenton Tarrant, as identified by NLTK. Frequency of use is shown in brackets.

Identified Noun (Frequency)		
New (15)	Zealand (12)	mosque (5)
firearms (4)	mosques (4)	Islamic (3)
muslims (3)	Christchurch (3)	muslim (2)
Linwood (2)	islam (2)	Ashburton (2)

Unlike Breivik, Tarrant discusses his target directly, with two questions in his own question and answer section dedicated to this. The first, '*Why did you choose New Zealand as a place to attack?*', covers Tarrant's rationale for living in New Zealand prior to the attack (he states that he moved there to plan and train for his attack), before he realised that the country was "as target rich an environment as anywhere else in the West". Tarrant also appears to view New Zealand as a remote location, stating that an attack there would showcase that "the invaders were in all of our lands, even in the remotest areas in the world and that there was no where left to go that was safe and free from mass immigration." The follow-up question focuses on the two Mosques: '*Was there any reason you attacked that(those) mosque(s) in particular?*'. Tarrant states that he identified his initial target, a Mosque in Dunedin, after watching a video posted on Facebook by a Muslim organisation based in Otago, the region of New Zealand in which Dunedin is located. However, this choice of target changed once Tarrant went to visit other Mosques in the country, stating that "after visiting the mosques in Christchurch and Linwood and seeing the desecration of the church that had been converted to a mosque in Ashburton,

my plans changed." Tarrant eventually settled on an attack on three seperate targets, Al Noor Mosque, Linwood Islamic Centre, and Ashburton Mosque; with Tarrant treating the Mosque in Ashburton as a "bonus objective". These results would suggest that it is possible for automated tools to identify target-relevant information that is present in the manifestos of lone actor violent extremists. However, this finding must be viewed in the correct context. Tarrant is very much an anomaly when it comes to how he distributed his manifesto, sending it to the government before his attack began, and speaking openly about his specific targets. These results benefit from a level of hindsight which is not consistently available, in that this analysis has taken place long after the attack. Without the benefit of hindsight, there are a plethora of nouns identified by NLTK that could qualify as target-relevant if the target was not already known. The full table showing these nouns, Table 6.7 is shown below.

From Table 6.7, looking solely at geographically-focused nouns, New Zealand is referred to 12 times (identified via a combination of the nouns New (15) and Zealand (12)), more than an other country; and Christchurch is referred to three times, more than any other city. Given that both of Tarrant's eventual targets were Mosques in Christchurch, one could reach the conclusion that extracting such target-relevant information from a manifesto such as Tarrant's is relatively easy. However, New Zealand is just one of many countries discussed by Tarrant; from Table 6.7, Tarrant references the United States nine times (identified via a mix of United (13) and States (9), and France and Australia seven times. Investigating further, this study finds Tarrant refers to the United States of America in a variety of ways, namely: the 'US' — mentioned eight times;, 'USA' — three times, 'United States' — and 'United states'. Due to this finding, further investigation identified several other variations of geographical locations present in Tarrant's manifesto. Notably, one further reference to New Zealand was found in the form of 'NZ', taking the total references for New Zealand up to thirteen. However, with these variations in mind, New Zealand is no longer the most frequently referred to country in Tarrant's manifesto: that would be the United States of America, at a total of 25 times across variations. In addition to this, as per Table 6.7, Tarrant refers to 'Europe' 28 times in his manifesto (not counting variations), and thus the three most commonly referenced geographical locations in Tarrant's manifesto are Europe, United States of America, and New Zealand — all of which may be considered viable target locations. The initial findings regarding extracting target-relevant information is now much harder to support. Whilst target-relevant information can be extracted from Tarrant's manifesto, it is likely that identifying information as target-relevant can only happen after the fact. This is not to mention that Tarrant's manifesto is an anomaly in the dataset, in that Tarrant actually speaks directly and specifically

Table 6.7: Table showing nouns present in the manifesto of Brenton Tarrant, as identified by NLTK, that could qualify as target-relevant. Frequency of use is shown in brackets. This table is limited to those nouns identified by NLTK that are used more than once in Tarrant's manifesto.

Identified Noun (Frequency)		
Europe (28)	China (4)	church (2)
men (24)	marxists (4)	Ashburton (2)
children (18)	politicians (4)	islam (2)
New (15)	NGOs (4)	officers (2)
immigrants (13)	non-Europeans (4)	police (2)
labour (13)	Islamic (3)	capitalists (2)
United (13)	USA (3)	autonomists (2)
Zealand (12)	muslims (3)	Children (2)
West (10)	Christchurch (3)	Religion (2)
Europeans (9)	European (3)	churches (2)
soldiers (9)	whites (3)	EUROPE (2)
States (9)	NGO (3)	Rotherham (2)
women (7)	labour (2)	London (2)
US (7)	Americas (2)	CHILDREN (2)
France (7)	army (2)	SOLDIERS (2)
Australia (7)	Turkey (2)	Poland (2)
NATO (5)	election (2)	Argentina (2)
mosque (5)	non-whites (2)	Texas (2)
market (5)	muslim (2)	
mosques (4)	Linwood (2)	

about his targets; most do not. Whilst the results of NLTK analysis of Tarrant's manifesto once again show that contextual information can be extracted, hindsight is heavily relied upon to identify said contextually relevant information from the noise that is also extracted by NLTK.

6.1.3 Manifesto Nouns: John Earnest (April 2019)

The manifesto of John Earnest, unlike those of Anders Breivik and Brenton Tarrant, is relatively short, with a word count of 4,353. Initial LIWC analysis finds that 14.08% of the words present in the text are not recognised by LIWC, or approximately 613 words.

LIWC also finds Earnest's manifesto to have an *Emotional Tone* value of 18.02%, sitting in the middle of Tarrant and Breivik in terms of overall negativity. Table 6.8 below shows the most common nouns, as identified by NLTK, present in Earnest's manifesto. From this table Earnest refers frequently to two previous attackers, Brenton Tarrant and Robert Bowers. Tarrant's attack has been discussed in this study, while Bowers is responsible for murdering 11 Jews in the Pittsburgh Synagogue shooting on 27th October 2018. In responding to a question of 'who inspires you?' in the question and answer section of his manifesto, Earnest answers "Jesus Christ, the Apostle Paul, Martin Luther, Adolf Hitler, Robert Bowers, Brenton Tarrant, Ludwig van Beethoven, Moon Man, and Pink Guy". Bowers and Tarrant are likely his main sources of inspiration however; this is reflected in Table 6.8, with Tarrant being identified 9 times and Bowers 4 times. Given this inspiration, one might expect the nouns shown in Table 6.8 to closely resemble those identified in Tarrant's manifesto, shown in Table 6.4, but this is not the case.

Comparing the two sets of nouns, several of the frequently identified nouns shown in Table 6.4 and 6.8 are found in both manifestos. Most notably: 'race', 'people', 'life', 'men', 'nothing', 'truth', 'children' and 'time'. Only 'race' stands out as notably ideological, although the presence of 'truth' suggests that these manifestos are supplying a form of truth to their readers, which should be noted as significant, but is not built on further in this work. A greater number of interesting commonalities between the two emerge when expanding the search to include lesser-used nouns, these are discussed later. From Table 6.8, the frequently-used nouns identified in Earnest's manifesto are quite different to those found in Tarrant's, shown in Table 6.4, in apparent contrast to Earnest seeing Tarrant as an inspiration. Robert Bowers, who Earnest also refers to as an inspiration, did not author a manifesto so no direct comparison can take place. However, Bower's choice of target, the Tree of Life Synagogue in Pittsburgh (USA), and his posting of antisemitic content on various online platforms, suggest that Earnest has far more in common with Bowers than he does with Tarrant. Upon human reading of Earnest's manifesto, this study finds that Earnest believes that Tarrant was an inspiration but also that "Tarrant was a catalyst for me personally". Earnest also confessed to starting a fire at a Mosque a week after Tarrant's attack in Christchurch. After this, Earnest's appears to have focused on an antisemitic ideology that more closely resembles that of Bowers. This suggests that in the case of John Earnest, inspiration can be treated as a multi-faceted concept. As an example, Tarrant inspires Earnest in terms of action, what this study will term 'catalytic inspiration'. Alongside this, Earnest appears to take more ideological inspiration from Bowers.

Table 6.9 below shows some of the common nouns found in the manifestos of Earnest

Table 6.8: Table showing the 50 most common strings identified as nouns by NLTK present in the manifesto of John Earnest. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
race (28)	father (6)	coward (4)
Jew (19)	family (6)	races (4)
t (19)	everything (6)	death (4)
Jews (18)	sin (6)	hands (4)
God (14)	revolution (6)	Son (4)
people (14)	truth (6)	Bible (4)
White (12)	s (6)	time (4)
life (10)	Satan (6)	destruction (4)
man (8)	crimes (5)	Abraham (4)
blood (8)	children (5)	Jesus (4)
role (8)	Do (5)	synagogue (4)
Brenton (8)	sacrifice (5)	thing (4)
men (7)	Earnest (4)	Robert (4)
nothing (7)	anyone (4)	Bowers (4)
Christ (7)	part (4)	love (4)
ye (7)	question (4)	

and Tarrant when considering less frequently-used nouns. Of the commonly used nouns across both manifestos, those shown in Table 6.9 are taken to be the most relevant to the ideology of Earnest. When comparing the frequency of use of each noun it must be noted that the size of each manifesto is not similar, with Earnest's manifesto containing 4,353 words, compared to the 17,055 words found in Tarrant's. However, frequencies are not given as percentage of total word count in order to maintain readability and relative simplicity. Table 6.9 shows a number of common nouns found in the manifestos of Earnest and Tarrant when considering less frequently-used nouns. Of the commonly used nouns across both manifestos, those shown in Table 6.9 are taken to be the most relevant to ideology. When comparing the frequency of use of each noun it must be noted that the size of the manifestos is not similar, with Earnest's manifesto containing 4,353 words compared to the 17,055 words found in Tarrant's. Despite this, for reasons of readability and simplicity, frequencies are not given as percentages of total word count. The stand-out nouns in Table 6.9 are 'immigration' and 'Jew'. The former is used only twice by Earnest but 17 times by Tarrant; the latter used only once by Tarrant but used 19 times by Earnest.

This difference reflects their different ideologies and is eventually reflected in the targets of their attacks. That Earnest does not appear to consistently focus on immigration can be considered further evidence that Tarrant was not an ideological inspiration for Earnest, or at least not as much of one as Bowers.

Table 6.9: Table showing nouns relevant to Earnest's attack that are also found in the manifesto of Tarrant. Frequency is shown as (x,y) where x is the frequency of the noun in Earnest's manifesto and y is the frequency of the noun in Tarrant's manifesto.

Identified Noun (Frequency in Earnest,Tarrant))		
ancestors (1,5)	immigration (2,17)	salvation (1,1)
battle (1,3)	jew (19,1)	soldier (1,1)
christian (2,1)	mosque (3,5)	survival (1,3)
church (2,2)	race (28,25)	terrorist (2,1)
degenerate (2,2)	rebellion (1,1)	traitor (1,3)
european (2,4)	retaliation (1,1)	white (12,8)
genocide (1,4)	sacrifice (5,1)	wrath (1,1)

As with previous manifestos, this study also searched the NLTK output of Earnest's manifesto for nouns deemed relevant to Earnest's attack and target. This study finds only three target-relevant nouns in Earnest's manifesto, 'Jew', 'Jews' and 'synagogue', used 19, 18 and four times respectively. Yet Earnest does not discuss the physical location of his attack on Poway Synagogue in his manifesto. However, he does discuss a previous arson attack he carried out at a Mosque in Escondido, a city in San Diego, USA; which may provide an idea of his general whereabouts. Regarding specifics on his synagogue attack though, there is no relevant content; for instance, two uses of 'synagogue' are found in quotations from the Book of Revelation, the final book of the New Testament. The other two uses of 'synagogue' are found in metaphor, with Earnest stating "it is so easy to log on to Minecraft[2] and get away with burning a synagogue (or Mosque) to the ground if you're smart about it." Continuing the metaphor, Earnest suggests that "you can even shoot up a mosque, synagogue, immigration center, traitorous politicians, wealthy Jews in gated communities, Jewish-owned company buildings, etc. and get away with it as well. ... Again, I'm talking about Minecraft." His mention of immigration center here is one of the few times Earnest appears to mirror Tarrant's ideology, before immediately reverting

[2]Minecraft is a highly popular, critically acclaimed, sandbox video game; allowing the player to explore and build in whatever way they want to

to type and focusing on his own antisemitic views. Earnest also states that he is a "19 year old nursing student from the depths of Commiefornia [California]", which whilst not directly relevant to his target is considered highly relevant to law-enforcement. Whilst NLTK does identify the uses of 'nursing', 'student' and 'Commiefornia', Earnest's use of 'Commiefornia' raises another issue with NLTK and automated text analysis programs generally. A human reader can associate 'Commiefornia' with California relatively easily - such a thing would likely need to be pre-programmed into any automated analysis tools - but there are simply too many possible signifiers to guarantee a high rate of identification. The findings from NLTK analysis of Earnest's manifesto suggest that when relevant information is present, NLTK is good at identifying at least key parts of it. For instance, NLTK does not identify the full sentence where Earnest states he is a 19 year old nursing student from California, but it does identify the key words of 'nursing', 'student' and 'Commiefornia'. The manifesto of Patrick Crusius, who also has links to Brenton Tarrant, is investigated next.

6.1.4 Manifesto Nouns: Patrick Crusius (August 2019)

Crusius' is the last manifesto in the dataset to lean on Tarrant's previous manifesto. On the 3rd August 2019 Crusius committed a mass shooting attack at a Walmart store in El Paso, Texas, US, killing 23 and injuring another 23 victims. His manifesto titled 'The Inconvenient Truth' was posted on 8chan shortly before the attack began. Containing only 2,363 words, of which 1936 are recognised by LIWC, the manifesto is significantly shorter than the previous manifestos discussed so far. LIWC also identifies Crusius' manifesto as scoring 11.11% in *Emotional Tone*, suggesting that the general tone of the manifesto is, again unsurprisingly, very negative. It begins with a statement of support for Tarrant: "In general, I support the Christchurch shooter and his manifesto. This attack is a response to the Hispanic invasion of Texas". Table 6.10 below shows the 48 most common nouns in Crusius' manifesto, as identified by NLTK.

Table 6.10 shows that Crusius' manifesto is heavily focused on two themes, those of immigration and the American political system. Crusius' political focus can be seen in the frequent use of 'Republican(s)', 'Democrat(s)' and 'government'. In a section of his manifesto titled Political Reasons, Crusius focuses on the so-called Hispanic voting bloc, stating the Democrat Party "intend to use open borders, free healthcare for illegals, citizenship and more to enact a political coup by importing and then legalizing millions of new voters." Crusius suggests that the end result of this will be that the Democrats will win the vast majority of presidential elections, due to an increased Hispanic population in tra-

Table 6.10: Table showing the 48 most common strings identified as nouns by NLTK present in the manifesto of Patrick Crusius. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
America (14)	life (5)	Democrat (3)
country (12)	bullet (5)	death (3)
people (11)	target (4)	Democrats (3)
millions (9)	Republican (4)	Party (3)
attack (8)	population (4)	Republicans (3)
immigration (8)	future (4)	time (3)
jobs (8)	immigrants (4)	tens (3)
Americans (7)	migrants (4)	work (3)
gun (7)	Corporations (4)	college (3)
corporations (6)	lifestyle (4)	labor (3)
race (6)	environment (4)	job (3)
Hispanic (5)	countries (4)	choice (3)
Texas (5)	diversity (4)	ak47 (3)
destruction (5)	manifesto (3)	invaders (3)
decades (5)	invasion (3)	mixing (3)
government (5)	Reasons (3)	fight (3)

ditionally Republican strongholds such as Texas. Crusius is not entirely supportive of the Republican Party however, stating that "the Republican Party is also terrible. Many factions with the Republican Party are pro-corporation. Pro-corporation = Pro-immigration." This leads into the heavy immigration focus in Crusius' manifesto, which Crusius repackages as "Economic Reasons"; this focus on immigration is reflected in Table 6.10 by the words 'immigration', 'immigrants', 'invasion' and 'invaders'. Crusius states that "immigration can only be detrimental to the future of America", arguing that "continued immigration will make one of the biggest issues of our time, automation, so much worse". In what is perhaps the most obvious reflection of Tarrant's ideology, Crusius discusses "invaders who also have close to the highest birthrate of all ethnicities in America", imitating not only the ideology but also the language of Tarrant's manifesto. This is followed by Crusius discussing how he believes immigration has contributed to an economic and environmental situation which he considers to be unsustainable. Although not immediately obvious, the focus on this narrative of economic and environmental unsustainability is reflected in Table 6.10, with 'jobs', 'corporations', 'destruction', 'lifestyle'

and ‘environmental’ all featuring heavily in Crusius’ narrative of unsustainability. Corporations are a common theme throughout the manifesto and Crusius often lays the blame for immigration at the feet of these corporations, stating that they have taken over the US and are “heading the destruction of our environment by shamelessly overharvesting resources.”

Table 6.11: Table showing 12 target-relevant nouns present in the manifesto of Patrick Crusius, as identified by NLTK. Frequency of use is shown in brackets.

Identified Noun (Frequency)		
America (14)	bullet (5)	WASR (1)
gun (7)	ak47 (3)	Ar15 (1)
Texas (5)	AK47 (2)	ar15 (1)
Hispanic (5)	Hispanics (2)	shooting (1)

Moving onto searching Crusius’ manifesto for target relevant nouns, Crusius does not include any discussion of his physical target. With hindsight, one could argue that frequent use of nouns such as ‘corporations’ can offer a vague clue that his target may be the site of a large corporation such as Walmart, but the link is tenuous at best. Take away hindsight though and the only real nouns of interest in the manifesto are ‘America’, ‘Texas’, ‘corporations’ and ‘Hispanics’; which provides a rough idea but is hard to base conclusions on. Rather than discussing his target, Crusius discusses his choice of weaponry in detail, and this discussion, along with the other nouns of interest, are reflected in Table 6.11. Crusius used a WASR-10 semi-automatic rifle in the attack and he discusses this particular choice of weapon: the WASR-10 “isn’t a great choice since it’s the civilian version of the ak47”. This appears to be mostly down to reliability issues, with Crusius noting that the weapon “overheats massively after about 100 rounds fired in quick succession”. Crusius also discusses the type of ammunition used during the attack, seemingly thinking his choice of ammunition was a good one owing to its fragmentation properties. Finally, he discusses acquiring another weapon, any sort of AR-15 variant. However, according to reports, Crusius used only a WASR-10 rifle during the attack.

Generally, the nouns identified by NLTK do point towards the specific weapon used in the attack, and the attack method can be assumed from this. The nouns do not provide any specific target information, but such information cannot be as it is simply not present in Crusius’ manifesto to begin with. This would again suggest, in relation to research question 2 and whether or not contextual information can be extracted, that whilst con-

textual information can be extracted it is the data that has the most say in whether useful information can be identified.

6.1.5 Manifesto Nouns: Stephan Balliet (October 2019)

Balliet's manifesto is again on the short side, containing only 2,484 words. The manifesto has two main focuses: Balliet's attack plan, and a relatively detailed overview of his equipment, much of which he manufactured himself; in particular, his improvised weaponry. This is reflected in the results of initial LIWC analysis, which recognised only 69.6% of the words in Balliet's manifesto. Also of note is that LIWC calculates an *Emotional Tone* value of 4.89%, identifying Balliet's manifesto as extremely negative, even for an extremist manifesto. NLTK analysis also reflects the focus on improvised weaponry, as can be seen by the presence of 'Luty' and 'Slam-Bang' in Table 6.12, in reference to the improvised submachine gun and shotgun that Balliet used during his attack. Also identified by NLTK are nouns such as 'kill', 'Jew' and 'Jews', summing up the major theme of Balliet's ideology.

Upon human reading of the manifesto, this study finds that Balliet does not directly discuss his ideology but does include enough information regarding his plan that an ideology is easily extracted, one of antisemitism. Balliet states that, from his point of view, "the only way to win is to cut off the head of ZOG", referring to a conspiracy theory known as the Zionist Occupation Government, which suggests that Jews secretly control Western governments, and is a commonly found theme within far right discourse. From Table 6.12, it can be concluded that the manifesto is more likely to contain an antisemitic ideology than it is any other, and this is confirmed upon manual reading.

Similar to previous manifestos, NLTK does not identify any nouns related to specific target location, as said information is not present in Balliet's manifesto. However, he does include key information regarding the date of his attack. This is successfully extracted by NLTK in form of 'Jom' and 'Kippur', as shown in Table 6.13. Jom Kippur is assumed by this study to refer to the Jewish holiday known as Yom Kippur which, in 2019, occurred on the 8th and 9th of October. Balliet carried out his attack on the 9th October 2019. In his manifesto, Balliet stated that "the best day of action should be Jom Kippur, because even 'non-religious' jews are often visiting the synagogue on this date." Balliet's discussion of his chosen target is highly specific but not in terms of location. He simply describes his target as "the local synagogue" but leaves no indication of where 'local' is. In the full manifesto, there are only two references that suggest Balliet lives in Germany: a refer-

Table 6.12: Table showing the 50 most common strings identified as nouns by NLTK present in the manifesto of Stephan Balliet. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
Kill (29)	range (5)	muslim (3)
someone (15)	water (5)	shoulder (3)
jew (8)	live-stream (4)	design (3)
jews (8)	t (4)	extractor (3)
Luty (8)	wall (4)	shotgun (3)
gun (8)	action (4)	shells (3)
powder (8)	fire (4)	belt (3)
Filler (8)	weapon (4)	combat (3)
steel (7)	round (4)	knife (3)
E (7)	grip (4)	barrel (3)
synagogue (6)	pin (4)	trigger (3)
door (6)	rounds (4)	firing (3)
way (6)	hand (4)	backup (3)
Slam-Bang (6)	reason (3)	magazines (3)
grenades (5)	graveyard (3)	upload (3)
guns (5)	entrance (3)	OD (3)
front (5)	cam (3)	thickness (3)
A (5)	amounts (3)	ETN (3)
grain (5)	Burn (3)	

Table 6.13: Table showing 5 target-relevant nouns present in the manifesto of Stephan Balliet, as identified by NLTK. Frequency of use is shown in brackets.

Identified Noun (Frequency)
jew (8)
jews (8)
synangogue (6)
Jom (1)
Kippur (1)

ence to the BRD, short for Bundesrepublik Deutschland (simply a more formal name for Germany); and his use of a kevlar helmet that he says he obtained as surplus equipment

from the Bundeswehr (German police). NLTK does identify the uses of 'BRD' and 'Bundeswehr', although both are only used once each throughout the manifesto and these are only identified from the manual analysis of results with a heavy dose of hindsight.

As previously mentioned, a large portion of the manifesto is dedicated to the assortment of improvised weapons Balliet planned to use during the attack. NLTK identifies a number of key components of this section, such as names of weapons used; names of weapon components; and chemical formulas commonly associated with the manufacture of explosives. Of note is that NLTK also identifies Balliet's name being used twice in the manifesto, although without seeing the placement of Balliet's name in the manifesto there is nothing to suggest his name is of particular importance. In all, that NLTK can detect key nouns in ideology and in what is essentially an instruction manual for improvised weaponry, suggests that basic NLTK functionality is capable of extracting key information from a wide variety of topics.

6.1.6 Manifesto Nouns: Tobias Rathjen (February 2020)

Rathjen's manifesto is the outlier in this dataset, as it was not originally authored in English. As mentioned previously, the manifesto has been translated to English with every effort made to produce as much of a direct translation as possible. The translated version of Rathjen's manifesto contains 8,901 words, with 7,812 of those recognised by LIWC. With regards to *Emotional Tone*, LIWC analysis outputs a value of 34.76%, relatively high for a document of this content. Rathjen's manifesto is unlike others previously discussed in this chapter, in that it contains lengthy discussions of an unnamed intelligence service that speaks to Rathjen in his head and has been surveilling him since he was very young. Despite Rathjen's clear and obvious far right ideology, this would appear to point to Rathjen's psychological issues playing a large part in his manifesto. The more frequently used nouns identified by NLTK in Rathjen's manifesto are shown in Table 6.14 below.

This conspiratorial and paranoid focus on secret intelligence services is reflected in Table 6.14 through the frequent use of nouns such as 'surveillance', 'service' and 'intelligence'. Rathjen states in the opening of his manifesto that "at the center of my message lies the activity of a so called 'secret service'". He claims that "people exist who work for this 'intelligence', who are able to read human's mind and further are able to 'engage' into it and, to a certain degree, perform some sort of remote control". Adding to this, Rathjen states that "whenever during the course of this message I talk of an 'intelligence', I do not mean a known intelligence like for example the Federal Intelligence Service, the CIA

Table 6.14: Table showing the 61 most common strings identified as nouns by NLTK present in the manifesto of Tobias Rathjen. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
people (43)	strategy (10)	Hollywood (7)
time (42)	intelligence (9)	knowledge (6)
point (22)	father (9)	First (6)
life (21)	today (9)	period (6)
years (21)	country (9)	impression (6)
question (21)	US (9)	groups (6)
China (18)	i.e. (9)	police (6)
course (16)	war (9)	Germans (6)
surveillance (15)	day (8)	something (6)
world (15)	conclusion (8)	population (6)
USA (15)	way (8)	view (6)
organisation (14)	fact (8)	state (6)
hand (13)	order (8)	development (6)
service (12)	idea (7)	Mexico (6)
things (12)	September (7)	thoughts (6)
film (12)	perspective (7)	DFB (6)
crime (11)	someone (7)	films (6)
example (10)	superpower (7)	examples (6)
conversation (10)	series (7)	brain (6)
problem (10)	Germany (7)	
power (10)	woman (7)	

or NSA, but rather an organisation which operates based on an intelligence, but doesn't appear nominal". The theme of continued surveillance by an intelligence runs throughout Rathjen's manifesto. Rathjen later states that "the secret organisation monitoring me influences which Hollywood films are made", suggesting that several of his ideas had been stolen by this secret organisation and used as a basis for films and television series (Prison Break being one example). In yet another topic relating to this intelligence service, Rathjen suggests that the appointments of Jurgen Klinsmann and Olivier Bierhoff to coach and team manager roles at the German national football team occurred because he thought they should whilst he was under surveillance. Again, NLTK identifies nouns related to Rathjen's discussions of Hollywood and the German football team. From Table

6.14 NLTK identifies ‘film’, ‘films’, ‘Hollywood’ and ‘DFB’ (German Football Association) as all frequently used nouns in Rathjen’s manifesto; all are key words in the topics Rathjen discusses.

Moving back to more ‘normal’ topics, Rathjen also spends time in his manifesto discussing his extremist views of various races and ethnicities. Rathjen recalls a conversation with a colleague, with one topic being “the criminality, or in more general teams, the bad behaviour or certain ethnic groups”; that is, non-whites in Germany. Rathjen concludes that “full expulsion of these people from our country can’t be a solution, because the existence of certain ethnic groups in itself is an error”. He argues that said expulsion would only delay the problem, to be dealt with by future generations. Based on this conclusion, Rathjen argues for a purge, split into two parts. In the first part of this, Rathjen calls for the annihilation of peoples from a 24 country-long list, varying from the “entire Saudi peninsula” to “Cambodia up to the Philippines” and covering most of the Middle East, North Africa, South East Asia, India and Pakistan. The second part of Rathjen’s genocidal plan, referred to as “the refined purge” covers the remainder of Africa, South America, Central America, the Caribbean, and a proportion of Germans, with Rathjen stating that he “can imagine halving the population [of Germany]”. Rathjen also argues that “we have to fly a ‘time warp’ and destroy the planet we call our home before the first arose many billion years ago”. Although there are no nouns shown in Table 6.14 that point to such a discussion, NLTK does identify a number of important nouns such as ‘Turks’, ‘non-Germans’, ‘purge’ and ‘immigration’; they are simply not used very frequently in Rathjen’s manifesto.

Searching for target relevant nouns in the NLTK output of Rathjen’s manifesto proves a relatively futile exercise. Rathjen targeted two shisha bars popular with Turkish immigrants in the German town of Hanau, near Frankfurt. The only target relevant nouns identified by NLTK are ‘Hanau’, used once, and ‘Turks’, used twice. Rathjen’s use of ‘Hanau’ is not in the context of attacking a target, but rather regarding the alleged surveillance by the intelligence service. Rathjen “contacted various private investigators and filed two complaints, one to the public prosecutor’s office in Hanau”. The noun ‘Turks’ is used when listing ethnic groups Rathjen believes are generally criminal; but since numerous other countries and regions are also listed this makes the identification of an obvious target group unlikely.

Where Rathjen’s manifesto is concerned, NLTK exhibits the capability to identify key nouns from a number of diverse topics. The NLTK output, particularly those shown in Ta-

ble 6.14, do generally reflect the content of Rathjen's manifesto. Very few target relevant nouns are identified by NLTK because there exists no such discussion of targets within the manifesto. Rather, the nouns that are identified are only identified as target relevant based on hindsight. This study finds no likelihood that information could be extracted from Rathjen's manifesto prior to his attack and identify said information as target-relevant. At this point, a pattern seems to be emerging in the results of NLTK analysis with regards to research question 2. NLTK shows a good capability to extract contextual information from the manifestos, but this is very much due to the fact that NLTK extracts an awful lot, creating a large amount of noise with which hindsight is usually required to sift through. At the same time, NLTK is very much limited by what content the manifestos actually contain, in that NLTK cannot extract what is not there in the first place.

6.1.7 Manifesto Nouns: Dylann Roof (June 2015)

The manifesto of Dylann Roof is the first in this chapter to contain a clearly anti-Black white supremacist ideology. Initial LIWC analysis finds Roof's manifesto to contain 2,441 words of which 2,141 are recognised by the LIWC standard dictionary. LIWC also finds Roof's manifesto to have an *Emotional Tone* value of 19.64%.

Table 6.15 shows the most common nouns in Roof's manifesto, as identified by NLTK. Said table does reflect Roof's white supremacist ideology, containing several race-based nouns, as well as a number of racial slurs. As discussed previously, all of Roof's uses of 'white(s)' are capitalised whilst his use of 'black(s)' are not, which NLTK correctly identifies. The majority of the nouns shown in Table 6.15 are components of Roof's ideology or at least key components of his manifesto. NLTK output does provide a good reflection of Roof's manifesto as, upon human reading, Roof does not discuss any other topics at length. His manifesto, unlike others discussed in this chapter, is kept relatively constrained and on-topic, writing only about his white supremacist ideology and his own feelings toward various races, from "Blacks" and "Jews" — which are unsurprisingly hostile — to "East Asians", for whom Roof appears to show a surprisingly positive attitude despite the nature of the overall manifesto: "I have great respent [respect] for the East Asian races. ... They are by nature very racist and could be great allies of the White race." This quote also shows that despite Roof's manifesto being highly racist and outgroup-focused in nature, not all uses of third person plural pronouns (in this case, 'they') are guaranteed to refer to the same outgroup, or even refer to an outgroup in a negative context.

Table 6.15: Table showing the 41 most common strings identified as nouns by NLTK present in the manifesto of Dylann Roof. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
White (47)	idea (5)	awareness (3)
people (16)	races (5)	ne****s (3)
problem (8)	jews (5)	day (3)
South (7)	hispanics (5)	minorities (3)
race (7)	part (4)	Americans (3)
history (7)	something (4)	reason (3)
culture (7)	time (4)	complex (3)
school (6)	dog (4)	ni****s (3)
things (6)	Whites (4)	state (3)
blacks (6)	slaves (4)	percent (3)
person (5)	example (4)	feel (3)
life (5)	suburbs (4)	Africa (3)
fact (5)	way (4)	anything (3)
man (5)	world (4)	

With regards to identifying target-relevant nouns, Roof committed the Charleston Church shooting on 17th June 2015 at the Emanuel African Methodist Episcopal Church in Charleston, South Carolina. Upon searching NLTK output for target-relevant nouns, aside from a variety of race-based nouns, only one use of 'Charleston' is identified. Roof states that "I chose Charleston because it is most historic city in my state, and at one time had the highest ratio of blacks to Whites in the country." Roof's manifesto contains a single sentence of target relevant information, and NLTK identifies the key noun from said sentence. Overall, NLTK performs admirably when analysing Roof's manifesto, extracting key nouns from Roof's white supremacist ideology and a number of other key areas. Although hindsight is still necessary to identify the single piece of target relevant information in Roof's manifesto, generally speaking the performance of NLTK during analysis lends support to NLTK being capable of extracting relevant contextual information from manifestos of FRLAVEs. This is helped by Roof's manifesto being so focused on his ideology: NLTK results are not obfuscated by non-extremist or non-ideological content in the manifesto.

6.1.8 Manifesto Nouns: Elliot Rodger (May 2014)

Rodger's manifesto is the first of two incel manifestos discussed here. Since Rodger's provides what is essentially an autobiography of his life so far the manifesto is on the longer side, with the 137 page document containing 108,327 words according to initial LIWC analysis, of which LIWC recognised 99,054. A relatively high Emotional Tone value of 37.89% may also be a reflection of the majority of this manifesto being autobiographical in nature and not overwhelmingly negative in the way previously discussed manifestos have been.

Table 6.16: Table showing the 60 most common strings identified as nouns by NLTK present in the manifesto of Elliot Rodger. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
t (570)	year (115)	week (77)
life (507)	Santa (115)	girlfriend (77)
time (483)	Soumaya (112)	friend (76)
mother (363)	place (109)	everything (75)
house (347)	Barbara (105)	Isla (71)
s (325)	home (98)	Vista (71)
father (283)	years (97)	days (70)
girls (275)	night (96)	something (69)
day (209)	kids (95)	Retribution (69)
world (201)	parents (90)	Day (68)
school (198)	college (90)	hope (68)
friends (193)	party (86)	point (67)
way (182)	summer (86)	weeks (67)
James (155)	experience (83)	trip (66)
people (145)	game (83)	thing (66)
girl (139)	age (82)	WoW (65)
sex (133)	everyone (81)	sister (64)
lot (127)	apartment (79)	end (64)
room (126)	things (77)	times (63)
class (120)	boys (77)	Addison (63)

NLTK finds a number of frequently used nouns, shown in Table 6.16, that can be

linked to incel ideology. Notably, 'girls', 'girl', 'sex' and 'girlfriend' all stand out. More specific to Rodger, 'Retribution' and 'Day' also stand out, as he frequently refers to the day of his attack as the "Day of Retribution". The autobiographical section of Rodger's manifesto covers approximately 134 pages, with the final two and a half pages containing an epilogue focused solely on Rodger's ideology. This epilogue will be the focus on any discussion regarding ideologically-relevant nouns.

In said epilogue, Rodger blames his situation on 'girls', stating that "I desired girls, but girls never desired me back. There is something very wrong with that. It is an injustice that must not go unpunished." Whilst the main focus is on women and girls, he also shows a good deal of hatred towards men and boys, with Rodger making clear his frustration that he "had to live with the knowledge that other boys my age were able to have all of the experiences I craved for". Rodger then moves onto the topic of sexuality, stating that "sex is by far the most evil concept in existence. ... No one deserves to experience so much pleasure, especially since some humans get to experience it while some are denied it". Rodger, in his self-proclaimed role of "magnificent gentleman", attributes this denial of sex solely to women: "the ultimate evil behind sexuality is the human female. They are the main instigators of sex. They control which men get it and which men don't". Rodger then refers back to his personal experiences, stating that "women are flawed creatures, and my mistreatment at their hands has made me realise this sad truth. ... The most beautiful of women choose to mate with the most brutal of men, instead of magnificent gentlemen like myself".

Rodger goes on to detail his "ideology of how a fair and pure world would work". In short, Rodger believes that women should be quarantined and killed, with a select few kept alive for reproduction. He believes that, in a world without the "barbarity of sex and women", men can develop more than previously. Rodger recognises that he will never see his ideology play out, claiming that "it did give me something to fantasize about as I burned with hatred towards all women for rejecting me throughout the years". Finally, Rodger appears to admit his desire to abolish sex is largely a matter of jealousy: "if I cannot have it, I will do everything I can to *DESTROY IT*". This study also carried out NLTK analysis of just the epilogue text in an attempt to investigate whether, when looking at just the main ideological content of the manifesto, NLTK could extract the key themes.

As Table 6.17 shows, when analysing just the text contained in the epilogue of Rodger's manifesto, NLTK does identify a very high frequency of nouns relating to sexuality. When analysing both the manifesto in full and just the epilogue, NLTK shows some ability to

Table 6.17: Table showing the 12 most common strings identified as nouns by NLTK present in the Epilogue section of the manifesto of Elliot Rodger. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
world (18)	men (11)	girls (7)
women (14)	way (10)	Women (7)
sex (12)	t (10)	place (5)
life (11)	order (8)	suffering (5)

extract the major topics, themes and narratives. Analysing the full manifesto, NLTK extracts a number of common themes such as 'life', 'school', 'friends' and 'parents', which likely reflects the majority of the manifesto being an autobiography of a 22 year old male. When looking at just the epilogue, the autobiographical elements are replaced by a pure focus on sexuality and women, with this change mirrored by NLTK output.

Finally, although the epilogue is purely focused on Rodger's ideology, the whole manifesto is used when searching for target relevant nouns, as it is assumed this would be the case in a real world scenario. On the 23rd May 2014 Rodger killed six and injured 14 victims in a series of attacks in the Isla Vista area of California, USA. Rodger used a number of weapons, including two knives, a handgun and his vehicle to target students at the University of California (UCSB).

Table 6.18: Table showing 14 target relevant strings identified as nouns by NLTK present in the Epilogue section of the manifesto of Elliot Rodger. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'

Identified Noun (Frequency)		
girls (275)	California (8)	Phi (3)
Santa (115)	knife (6)	Sig (2)
Barbara (105)	handgun (6)	Sauer (2)
Isla (71)	Alpha (5)	Sorority (1)
Vista (71)	sorority (4)	

From Table 6.18, a number of target relevant nouns are found in NLTK analysis of

Rodger's full manifesto. Interestingly, aside from seven uses of 'girls', none of these target relevant nouns are found in the epilogue of the manifesto. This is likely a combination of the epilogue being ideologically focused and a number of the target relevant nouns also being relevant to Rodger's life more generally. For example, Isla Vista and Santa Barbara are both geographical locations present in Table 6.18 and both are closely linked to Rodger's life and the location of his attack. The first mention of Isla Vista is when Rodger and his parents planned his move to Santa Barbara to attend college: "I found out about Isla Vista, the small town adjacent to UCSB [University of California, Santa Barbara] where all of the college students live and have parties. When I found out about all this, I had the desperate hope that if I moved to that town I would be able to live that life too. ... A life of pleasure and sex". Rodger did not enjoy his time in Isla Vista, later stating that "after a lot of thinking, I came to the conclusion that the Day of Retribution will take place in Isla Vista". More specifically, Rodger openly states he will target the Alpha Phi Sorority house in Isla Vista: "I will attack the very girls who represent everything I hate in the female gender: The hottest sorority of UCSB. After doing a lot of extensive research within the last year, I found out that the sorority with the most beautiful girls is Alpha Phi Sorority".

Rodger also speaks about his choice of weapons for his attack. Discussing handguns, he states that "during this Spring of 2013, I began to seriously think about planning the Day of Retribution. My next step towards planning for it was to buy my second handgun, a Sig Sauer P226". Although Rodger used his BMW to injure seven people in the attack, according to his manifesto he originally intended to use a Mercedes SUV belonging to his father, stating that an "SUV will cause a lot more damage than my BMW coupe". NLTK does identify these key target relevant nouns, but when looking at NLTK analysis of the full manifesto, the less commonly used nouns are buried far down in the analysis output. Without hindsight and prior knowledge of the attack, it is very much a case of searching for a needle in a large stack of other needles.

6.1.9 Manifesto Nouns: Christopher Sean Harper-Mercer (October 2015)

Mercer's is the second incel manifesto in the dataset and is influenced by a number of previous mass shooters, notably Elliot Rodger. Mercer's manifesto is much shorter than Rodger's, owing to the lack of an autobiographical section. It contained only 1,591 words with 1,375 recognised by LIWC analysis. Despite the content, LIWC finds Mercer's

manifesto to have yet another surprisingly high value for *Emotional Tone* of 45.39%, suggesting Mercer's manifesto is really quite average in terms of positive and negative emotion. Mercer's ideology appears similar to Rodger's, but with a more obvious white supremacist narrative as part of his wider incel ideology. Like Rodger's, Mercer states that he has no girlfriend and is a virgin: yet compared to Rodger's manifesto, Mercer's is lacking any real discussion of sexuality that one might expect in the manifesto of an incel. This is replaced by a particularly negative focus on black males and an admiration of past school shooters and killers; including Seung Hui Cho (Virginia Tech), Adam Lanza (Sandy Hook), Dylan Klebold and Eric Harris (Columbine), and Vester Flanagan (murders of Alison Parker and Adam Ward); Mercer states that these are "people who are elite, people who stand with the gods".

These focuses are reflected in Table 6.19, which shows the most common nouns identified by NLTK in Mercer's manifesto. The white supremacist narrative is obvious, captured by the presence of 'black' and 'blackness'; whilst the focus on previous mass shooters is notable via nouns such 'Elliot' 'Roger', 'Seung', 'Cho', 'Mass' and 'Shooters'. Although Mercer's manifesto certainly contains white supremacist leanings, it is not as clear-cut as simply labelling Mercer a white supremacist. Mercer begins a section titled "blackness and its effect on men" by stating that "the black man ... is a beast beyond measure". However, he then argues that the reader should not "take these words to be racist. I don't hate blacks. Just the men". Mercer states that he himself is "40% black", but that his "partial blackness didn't come from a man", which in Mercer's eyes excuses these racist sentiments. Mercer actually treats black women as victims, arguing that "black women are not to blame, they are hapless dupes to the black mans conniving machinations".

Despite Mercer's white supremacism, admiration of previous mass-shooters and general incel ideology, another narrative is also present throughout the manifesto which is not well reflected by NLTK. Said ideology is one of Hell, Satan, and serving demonic forces. Mercer's manifesto ends with "666 For Satan I do this, for the Darkness I do this 666". Early in the manifesto Mercer argues that he was "forced to align myself with demonic forces" because society has denied him what he deserved. He claims that "I now serve the Demonic Hierarchy. When I die I will become one of them. A demon. And I will return to kill again and again". As a whole, Mercer's manifesto is a mess of multiple views, with language from incel ideology, white supremacism and satanism present. NLTK shows some capability of extracting key nouns related to white supremacism, as is shown in Table 6.19. Less obvious are key nouns relating to incel ideology and satanism as many are used only once during the full manifesto. If one looks at lesser-used nouns from the NLTK

Table 6.19: Table showing the 58 most common strings identified as nouns by NLTK present in the manifesto of Christopher Sean Harper-Mercer. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
man (12)	Mass (2)	killer (2)
t (11)	Shooters (2)	hope (2)
men (10)	FAQ (2)	planet (2)
world (10)	My (2)	blacks (2)
people (7)	solace (2)	brain (2)
life (6)	inspiration (2)	male (2)
Elliot (5)	sections (2)	mans (2)
women (5)	friends (2)	penis (2)
effect (4)	job (2)	fear (2)
manifesto (4)	People (2)	beast (2)
others (4)	Rodger (2)	years (2)
things (3)	Adam (2)	brains (2)
girlfriend (3)	Just (2)	head (2)
society (3)	everything (2)	cops (2)
Seung (3)	way (2)	media (2)
Cho (3)	work (2)	interests (2)
Africa (3)	sign (2)	movies (2)
Black (3)	course (2)	profile (2)
woman (3)	power (2)	series (2)
Joy (3)	death (2)	religion (2)
favorite (3)	gun (2)	Rodger's (2)
Q (3)	country (2)	
Blackness (2)	laws (2)	

output then key nouns relating to incel ideology and satanism are found. With regards to target relevant nouns, there is no success, with NLTK identifying no nouns relevant to Mercer's attack location or target. However, this is not a fault of NLTK, the tool cannot identify was simply is not present in the manifesto. Upon human reading of Mercer's manifesto, it is noted that there is no discussion of his target, nor anything that may link to it, reinforcing the argument that whilst NLTK is capable of extracting a good amount of information from manifestos, it is totally dependent on the author of the manifesto to

include content in the first place.

6.1.10 Manifesto Nouns: Jim David Adkisson (July 2008)

Adkisson's manifesto is the last to be discussed and is by far the shortest document in the dataset, containing only 1,059 words, of which only 875 were recognised by LIWC. Initial LIWC analysis shows the document to have *Emotional Tone* value of 2.2%, much lower than any of the previous manifestos in this study. For a very far right manifesto, Adkisson's is not particularly white nationalist as seen in Breivik and Tarrant, nor white supremacist as seen in Roof's manifesto. Rather, Adkisson focuses on a very strong anti-Democrat and anti-liberal narrative.

Table 6.20: Table showing the 35 most common strings identified as nouns by NLTK present in the manifesto of Jim David Adkisson. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
America (10)	Democrats (3)	institution (2)
people (8)	Liberals (3)	outlets (2)
liberals (6)	news (3)	Party (2)
life (5)	church (3)	progress (2)
country (5)	Adkisson (2)	man (2)
Universalist (4)	Knoxville (2)	decent (2)
Church (4)	poverty (2)	nation (2)
years (4)	War (2)	way (2)
liberalism (4)	allies (2)	something (2)
U.S. (4)	traitors (2)	kill (2)
Democrat (4)	things (2)	living (2)
Tennessee (3)	education (2)	

Elements of this narrative can be seen in Table 6.20, which shows 'liberals', 'liberalism', 'Democrat(s)' and 'Liberals' as being used frequently in Adkisson's highly negative manifesto. Of liberalism, Adkisson argues that "the worst problem America faces today is liberalism" and states that liberals have "dumbed down education and redefined deviancy as a virtue". Adkisson concludes simply that "liberals are evil" and "embrace the tenets of Karl Marx".

Whilst Adkisson does not go as far as defining his own actions as terrorism, he does accept that they are a hate crime; a political protest; and a symbolic killing. He admits to hating "the damned left-wing liberals" and believes there is a "vast left-wing conspiracy". Adkisson states that he is protesting what he believes are a number of political indiscretions, from "giving constitutional rights to the terrorists at Gitmo [Guantanamo Bay]" to the "Democratic National Convention for running a radical, leftist candidate for President of the United States", in reference to Barack Obama. Adkisson also knew that he was unable to kill his ideal targets, namely "every democrat in the U.S. Senate" and "everyone in the mainstream news media". Instead, he targeted "the foot soldiers, the chicken shit liberals who vote these people into office".

Table 6.21: Table showing 12 target relevant strings identified as nouns by NLTK present in the manifesto of Jim David Adkisson. Frequency of each string is shown in brackets after the string in the form 'String (Frequency)'.

Identified Noun (Frequency)		
America (10)	U.S. (4)	Liberals (3)
liberals (5)	Democrat (4)	church (3)
Universalist (4)	Tennessee (3)	Adkisson (2)
Church (4)	Democrats (3)	Knoxville (2)

Investigating target relevant nouns, Adkisson is very obvious about his choice of target. The first sentence of his manifesto reads "I guess you are wondering why I committed this patriotic act against the Unitarian Universalist Church in Knoxville, Tennessee". Also included in the manifesto is a small section dedicated solely to discussing this church in more detail. On the 27th July 2008, Adkisson entered the aforementioned church and murdered two members of the congregation, injuring another seven before being restrained by several members of the congregation. A number of target relevant nouns are identified by NLTK, as shown in Table 6.21, although all of these nouns are also present in the list of the most common nouns in the manifesto shown in Table 6.20. This is likely due to the short and highly focused nature of Adkisson's manifesto. Also of note is that Adkisson signs his manifesto with his full name, Jim David Adkisson. NLTK identifies all three parts of his name as a single noun each, and does in theory identify his full name. Given a very short and focused manifesto such as Adkisson's, NLTK has shown good capability, whilst utilising only basic functions, to extract all relevant nouns from a manifesto.

Where Adkisson's manifesto is concerned, this study shows a high likelihood that

NLTK is capable of quickly extracting key nouns from said manifesto. The issue, not previously mentioned, is that Adkisson did not distribute his manifesto online or via other methods in 2008; he simply left it on the front seat of his car for the police to find after he had committed his attack. Of course, by the time it was found, the attack had already taken place and the need to quickly and accurately extract all key nouns from the document is at least greatly diminished.

6.1.11 Discussion

Across the ten manifestos included in the dataset NLTK has consistently shown varying levels of capability in extracting key nouns from texts containing a variety of topics. Yet the reliance on hindsight and prior knowledge of attacks to seperate key nouns from others is a serious issue. Outside of hindsight and prior knowledge there are limited factors that allow the identification of key nouns. Basic frequency analysis is an obvious starting point, but this is limited by the content of the manifesto. Taking the manifesto of Elliot Rodger as an example, the vast majority is autobiographical in nature and thus a list of the most frequent nouns in the manifesto, as shown in Table 6.16, is overloaded with nouns from the autobiographical content. This makes it much harder to identify his actual target, or may lead to a conclusion that something from his earlier life was the target, such as a school.

An alternative is to use previous data to build a dictionary from which key words can be identified. This is very similar to the LIWC tool used in the previous chapter, and would likely run into the same issues when used to search any future documents. It is unlikely that every key word in a future document would be recognised, especially where target relevant nouns are concerned. This is before taking into account that the creation of such a dictionary assumes the meaning of a word or noun is both consistent across manifestos and determined solely by its meaning in the previous manifestos from which the dictionary would be built. However, this is not the case; it is this crude and over-simplified determinism advanced by tools such as LIWC that this study shows is insufficient.

As a reminder, research question 2 asks if contextually important information and target information can be automatically extracted from FRLAVE manifestos. This section has shown a repeated capability from NLTK to extract information of this kind. However, as always, it is not that simple. Whilst NLTK does extract contextual information, it also extracts a large amount of irrelevant nouns and words which are considered noise. To accurately and reliably distinguish the contextually important nouns from the noise is

an entirely different problem, and without the benefit of hindsight a far more complex one. Similarly, the information that NLTK can extract is of course entirely dependent on information contained in a given manifesto, and thus entirely dependent on the extremist themselves. Given that these are manifestos there is a fair assumption that ideological content will always be included, but it is dependent upon the author completely whether or not they include any information which points to their target in the manifesto itself.

The next section investigates commonalities in the NLTK output across manifestos. It is expected that manifestos which share very similar ideologies such as Tarrant's and Cruisus' will share a relatively large number of key words. Indeed, for a dictionary approach to work, this would need to be the case.

6.2 Commonly Used Nouns in FRLAVE Manifestos

This section cross-references nouns identified from the manifestos with each other in several groupings. Groupings are identified by the researcher according to a variety of properties such as ideology, author location, and other links between multiple manifestos such as inspiration. The groups identified are as follows: full dataset; explicitly far right; white nationalist; white supremacist; antisemitic; Incel; Inspirational; Tarrant-inspired; American authored; and non-American authored.

So far this chapter has shown that whilst NLTK is capable of extracting important information from the extremist manifestos investigated in this study, questions still remain over the overall suitability of using automated content analysis tools to analyse the manifestos of FRLAVEs. Namely, there is no clear way to distinguish the important information from the noise that NLTK also extracts from the manifesto data. Although this study has already argued that a dictionary-based approach to such a problem as too deterministic to be viable, for the sake of completeness this section searches for common nouns across various groupings of manifesto data. If a dictionary-based approach were to work, previous data would be key in building the initial structure. The aim of this section is twofold; first, to investigate whether manifestos that contain similar ideologies also contain similar nouns and, if this is the case, address the question of quite how similar do manifestos need to be? This leads into the second aim, how does this support, or not support, the use of previous manifesto data to identify future extremist manifestos? That is, if the data set of manifestos used in this study do not contain similar nouns, how is it that previous manifesto data is expected to be used to allow identification of future

extremist manifesto data? This further addresses research question 4 — the suitability of using automated tools for analysing content of this nature.

This investigation is performed using the lists of nouns produced and discussed in Section 6.1. To compare the nouns used in multiple manifestos, a simple Python script is used to cross-reference the relevant lists of nouns created by NLTK. An example of this Python script is shown in Listing 9.3 in Appendix B, with the script shown cross-referencing the noun lists of Anders Breivik and Brenton Tarrant. All documents are converted to lowercase during the cross-referencing in order to allow for lowercase versions of a word to be treated as the same as a capitalised version. This is obviously a balancing act in terms of accuracy, as this study has noted previously the difference between 'white' and 'White' is an important one. However, it is assumed that when searching for common nouns, the priority is to be able to identify the same word no matter the capitalisation. The downside of course is that rather than being able to identify 'white' and 'White', by changing all the text to lowercase this study is only really identifying 'white'.

Before looking at more specific manifesto groupings, the dataset as a whole is investigated. The nouns of all ten manifestos are cross-referenced with each in order to identify any nouns that are present in all of the manifestos. The results of this are shown in Table 6.22 below and provide no clear link or leaning to the far right ideologies. This is not particularly surprising given the relative variety in the manifestos; there are enough differences in the ideologies to ensure that major contextual nouns are not present in every manifesto. Length is also important, as the analysis is limited by the shorter manifestos. Because of these limiting factors, the dataset has been split into smaller subgroups as described previously.

Table 6.22: Table showing a list of the nouns identified by NLTK as being present in every extremist manifesto in the dataset used by this study.

Nouns in Common		
everything	man	way
life	people	world

6.2.1 Common Nouns in Far Right Manifestos

Since the Incel manifestos stand out as the most obviously different ideologically to the rest of the dataset, this subgroup contains the full dataset minus the manifestos of Elliot Rodger and Christopher Sean Harper-Mercer. As can be seen from Table 6.23, the results are very similar to those from the full dataset shown in Table 6.22. The only difference being 'something'; identified as a noun in all manifestos minus the incel manifesto of Christopher Sean Harper-Mercer. To state the obvious, the presence of 'something' in a text is of little use to ascertaining whether the text is of an extremist nature, and is of complete uselessness when it comes to context, apart from telling the reader that the text is about something.

Table 6.23: Table showing a list of the nouns identified by NLTK as being present in the group of explicitly far right manifestos. That is, the full dataset minus both Incel manifestos.

Nouns in Common		
everything	people	world
life	something	
man	way	

6.2.2 Common Nouns in White Nationalist Manifestos

Moving on to the next level of specificity, the manifestos of the white nationalist attackers are investigated together; that is, the manifestos of Anders Breivik, Brenton Tarrant and Patrick Crusius. Cross-referencing the nouns identified by NLTK from the three manifesto outputs a list of 158 nouns that are present in all three. Since the focus here is on locating any ideologically relevant nouns, only 24 such relevant nouns are shown in Table 6.24. The nouns shown cover many of the key topics one would expect to find in a white nationalist manifesto such as immigration, invaders and replacement. Not only this, but the environmental focus of Tarrant is also reflected in Table 6.24 with nouns such as 'environment', 'destruction' 'resources' and 'preservation'. However, uses of 'preservation' by Breivik are focused on self-preservation and the preservation of the "European Christendom". Along the same lines, Crusius argued that his attack is not "an act of imperialism but an act of preservation".

Table 6.24: Table showing the list of nouns identified by NLTK that are present in the group of manifestos categorised as white nationalist; that is, the manifestos of Anders Breivik, Brenton Tarrant and Patrick Crusius.

Nouns in Common		
ancestors	future	population
corporations	genocide	preservation
culture	gun	race
death	identity	replacement
destruction	immigrants	resources
diversity	immigration	soldier
environment	invaders	wars
europeans	invasion	whites

6.2.3 Common Nouns in White Supremacist Manifestos

The white supremacist group of manifestos consists of those authored by Dylann Roof, John Earnest and Stephan Balliet. Cross-referencing the nouns identified in these manifestos results in 27 nouns found to be present in all three; these are presented in Table 6.25 below. The nouns shown capture the racist and antisemitic narratives found within the manifestos, with the presence of 'Jew' and 'white' reinforcing this. Looking at the use of particular nouns more closely does raise some inconsistencies however. Dylann Roof's manifesto is very much in line with what one might expect a white manifesto to be: highly racist with a specific focus on the black community in America. So why are the nouns 'Jew' and 'Jews' present in his manifesto? The main narrative of Roof's manifesto is anti-Black but the presence of 'Jew(s)' in the text has the potential to confuse analysis. Similarly, the manifestos of Earnest and Balliet are highly antisemitic but have no real focus on people of colour: so why is the noun 'n****rs' present in these anti-Semitic manifestos? Balliet's uses are in the context of the achievement system he describes, and the closing message in which he encourages the reader to kill a number of groups, all referred to in derogatory terms. Earnest's uses have more variety, with "glown****rs" and "sandn****rs" appearing in his manifesto. This is not to say that their use is not racist, it most certainly is. In the case of Earnest, however, his uses are racist against a different outgroup. The use of 'Jew' and 'Jews' in Roof's manifesto is also different to their use in the antisemitic manifestos of Earnest and Balliet. Roof is "of the opinion that the majority of American and European jews are White", which this study assumes to mean that he does not have a high level of hatred towards them. Thus, even with a noun like 'Jew' in

the wider context of white supremacist manifestos, the specific context the noun is used in can not be guaranteed to be consistent.

Table 6.25: Table showing the list of nouns identified by NLTK that are present in the group of manifestos categorised as white supremacist; that is, the manifestos of Dylann Roof, John Earnest and Stephan Balliet.

Nouns in Common		
action	life	right
amount	man	someone
children	men	something
course	mind	things
day	name	time
everything	n*****s	way
fact	people	white
jew	person	whites
jews	reason	world

6.2.4 Common Nouns in Anti-Semitic Manifestos

Breaking the white supremacist grouping down further, analysing the antisemitic manifestos of Earnest and Balliet together reveals 71 shared nouns, with the key nouns shown in Table 6.26. As can be seen in Table 6.26, both manifestos share a number of race- and religion-based nouns, as well as some that are plainly racist. One might expect any shared ideological nouns to be focused solely on antisemitism but, as was seen in the previous white supremacist group, this is not always the case. The appearance of 'Mosque' and 'n****rs' in Table 6.26 support this. As expressed in the previous section however, the full meaning of such nouns is not always clear.

The presence of 'mosque' in these two antisemitic manifestos seems peculiar. As previously discussed, Earnest admits to carrying out an arson attack at a Mosque, a month after Brenton Tarrant's attack in Christchurch. Similarly, Balliet states that "I originally planned to storm a mosque or an antifa 'culture' centre", before arguing that doing so would not "make a difference". Rather, Balliet believes that "the only way to win is to cut off the head of ZOG". These statements together suggest that even in an antisemitic manifesto that accompanies an antisemitic attack Mosques are still discussed as targets,

adding yet more confusion.

It is concluded that the manifestos of Earnest and Balliet are evidence that manifesto data cannot be relied upon to be wholly ideologically consistent in their discussion. If this is the case, a further layer of complexity is added to the task of analysing such texts automatically. On the other hand, despite the antisemitic focus, NLTK still identifies 'Mosque' as a noun present in both manifestos. The issue is with identifying 'Mosque' as a noun but also identifying it as a noun that is not as relevant as other ideologically relevant nouns, such as 'Jew' or 'synagogue' in the specific scenarios of Earnest and Balliet.

Table 6.26: Table showing the list of nouns identified by NLTK that are present in the group of manifestos categorised as anti-Semitic; that is, the manifestos of John Earnest and Stephan Balliet.

Nouns in Common		
degenerate	mosque	synagogue
genocide	n****rs	terrorist
gun	police	traitor
jew	politicians	white
jews	shitpost	

6.2.5 Common Nouns in Incel Manifestos

The two incel manifestos of Elliot Rodger and Christopher Sean Harper-Mercer should have a high number of nouns in common. This is not only due to a shared ideology, but also because Mercer openly references Rodger as an inspiration, alongside a host of other mass shooters. In all, NLTK identifies only 141 shared nouns that are present in both manifestos. As usual, many of these are fairly arbitrary, 'everyone' and 'everything' being good examples. The more relevant nouns are shown in Table 6.27 and reflect a darker narrative focused on women, sex and violence. In short, the nouns identified by NLTK as present in both manifestos do suggest an Incel ideology. It should be noted however that the nouns shown in Table 6.27 are cherry-picked from the original list of 141 shared nouns. The 18 Incel-relevant nouns are identified as present in both manifestos, but so are 123 others.

Table 6.27: Table showing the list of nouns identified by NLTK that are present in the group of manifestos categorised as Incel; that is, the manifestos of Elliot Rodger and Christopher Sean Harper-Mercer

Nouns in Common		
crazy	gun	rodger
creature	hate	sex
dark	impulses	thug
elliot	penis	virgin
girlfriend	power	woman
girls	relationship	women

6.2.6 Common Nouns in the Manifestos of Breivik and Tarrant

Similar to the previous pair of manifestos, those of Anders Breivik and Brenton Tarrant are closely linked not only through ideology but also through inspiration. Tarrant explicitly states that whilst he supports a range of racially-motivated murderers, he "only really took true inspiration from Knight Justiciar Breivik". This influence and the length of both manifestos lead to the identification of 1,446 shared nouns. With the benefit of hindsight these have been narrowed down to a list of 38, shown in Table 6.28. The nouns shown in Table 6.28 cover many of the key themes seen in both manifestos, and in white nationalist rhetoric more generally. As discussed previously when looking at the group of white nationalist manifestos, Breivik's uses of 'preservation' are not in the same eco-fascist context as Tarrant.

6.2.7 Common Nouns in the Manifestos of Tarrant, Earnest & Crusius

This group of manifestos consists of Brenton Tarrant's and those inspired by Tarrant, namely John Earnest and Patrick Crusius. Earnest very clearly states that "Brenton Tarrant inspired me", whilst Crusius is less explicit, stating a general support for Tarrant and using much of the same ideology as Tarrant, albeit against a different target group. This study finds 66 nouns identified by NLTK that are shared across all three manifestos. Table 6.29 shows 15 of the 66 shared nouns that cover the key aspects of all three manifestos. It should be noted however that 'genocide' is not used in the context of the author's want to commit genocide against an outgroup. Rather, the uses of 'genocide' are in reference to a perceived white/European/cultural genocide, their ingroup.

Table 6.28: Table showing the list of nouns identified by NLTK that are present in the manifestos of both Anders Breivik and Brenton Tarrant.

Nouns in Common		
ancestors	europe	preservation
anti-immigration	genocide	retaliation
assimilation	homelands	revenge
barbarians	immigrants	sacrifice
birthrates	immigration	salvation
climate	invaders	soldier
constantinople	islamic	sovereignty
culture	islamaphobic	survival
degenerate	minorities	traitor
deportation	mosque	utopia
diversity	muslim	warfare
environment	overpopulation	western
ethnicity	pollution	whites

Although both Earnest and Crusius claim to have been inspired by Tarrant, their manifestos are very different from each other. Crusius' is closer to Tarrant's, albeit focused on a different outgroup but still with an environmental narrative present. Such an environmental narrative is nowhere to be seen in the manifesto of Earnest, whose attack and manifesto espouses a different ideology than Tarrant's. This is reflected in the shared nouns; aside from 'destruction', none are environmentally relevant, and even then 'destruction' can be used to discuss many various contexts. Similarly, there is no evidence of the antisemitic ideology present in Earnest's manifesto because the relevant nouns are not at all present in the manifestos of Tarrant or Earnest. Thus, although Earnest claims Tarrant inspired him, the shared nouns do not support this as the environmentally-relevant nouns are not present in the manifesto of Earnest, and the antisemitic nouns are not relevant in the manifesto of Tarrant. If Earnest was inspired by Tarrant, he was not inspired on a purely ideological basis, suggesting that Earnest took catalytic inspiration from Tarrant, spurring Earnest into action.

Table 6.29: Table showing the list of nouns identified by NLTK that are present in all the manifestos of Brenton Tarrant, John Earnest and Patrick Crusius.

Nouns in Common		
ancestors	genocide	soldier
cause	immigration	trump
destruction	race	truth
europeans	reasons	wars
future	response	whites

6.2.8 Common Nouns in Geographically-Based Groupings of Manifestos

The final three groupings to be investigated are based on the geographical location of the authors. Thus there are three groups, American, non-American and German. The American group consists of the manifestos of Jim David Adkisson; John Earnest; Patrick Crusius; Dylann Roof; Elliot Rodger and Christopher Sean Harper-Mercer. The non-American group consists of the manifestos of Anders Breivik; Brenton Tarrant; Stephan Balliet and Tobias Rathjen; with the German group consisting only of Balliet and Rathjen's manifestos. The group of American manifestos contains the most variety in terms of ideology. This is reflected in the nouns shared by the manifestos, shown in Table 6.30. As shown, only nine nouns are found to be shared by the six American-authored manifestos and none are clearly ideological in nature.

Table 6.30: Table showing the list of nouns identified by NLTK that are present in those manifestos with American authors; that is, the manifestos of John Earnest, Patrick Crusius, Dylann Roof, Elliot Rodger, Christopher Sean Harper-Mercer and Jim David Adkisson.

Nouns in Common		
everything	man	way
job	nothing	world
life	people	years

In comparison, this study finds 50 shared nouns that are shared by the manifestos with non-American authors. This is likely due to two factors. There is much less ideological

variety in the non-American set and the average word count of a non-American authored manifesto is much larger than that of the American authored set — 208,889 compared to 20,022 respectively. There exists a larger hay stack within which to find needles, to follow the metaphor. As can be seen in Table 6.31, some of the 50 shared nouns reflect the combative stance of the perception that the authors are at war with the enemy.

Table 6.31: Table showing the list of nouns identified by NLTK that are present in those manifestos with non-American authors; that is, the manifestos of Anders Breivik, Brenton Tarrant, Stephan Balliet and Tobias Rathjen.

Nouns in Common		
combat	group	war
enemy	police	
europe	population	

When looking at only the German-authored manifestos of Stephan Balliet and Tobias Rathjen, 72 shared nouns are identified. As with the previous non-American group the most relevant nouns, shown in Table 6.32, reflect the war-like tone of the ideologies. The addition of 'police', 'surveillance' and 'suspicion' suggest a conspiratorial tone which, whilst very evident in the manifesto of Rathjen, is not clearly seen in that of Balliet. Rather than in a conspiratorial nature, Balliet uses 'surveillance' and 'suspicion' in a matter-of-fact way, discussing a "surveillance cam right above the gate" of his target, and worrying about raising suspicion whilst gathering information about his target.

Table 6.32: Table showing the list of nouns identified by NLTK as being present in those manifestos with German authors. That is, the manifestos of Stephan Balliet and Tobias Rathjen.

Nouns in Common		
combat	operation	suspicion
enemy	police	war
europe	population	
group	surveillance	

When looking at the dataset as a whole, no particularly relevant nouns are shared amongst all ten manifestos. When looking at more specific groupings, ideologically similar nouns are more likely to share relevant nouns than groupings based on arbitrary vari-

ables such as the geographical location or nationality of the author. However, whilst ideologically similar manifestos do contain nouns that are considered contextually important to said ideology, context is still an issue, such as the differences in the use of 'preservation' by Breivik, Tarrant and Crusius. Even a highly focused dictionary then is prone to the same issues as the LIWC standard dictionary that have already been demonstrated by this study. Research question 4 asks whether or not tools of this nature are suitable for analysing the manifestos of FRLAVEs. Whilst there is no particularly strong evidence either way, these results do nothing to increase the apparent suitability of using automated tools in the analysis of FRLAVE manifestos.

In order to finish the investigation into the suitability of LIWC and its standard dictionary in particular, the next section takes a backwards approach to reviewing the results of LIWC analysis on the manifestos used in this study. Rather than looking at what LIWC has recognised, it is the words that LIWC does not recognise that may be key. If the assertion that LIWC is poor at identifying contextual information can be ascertained, then LIWC should not recognise a number of important nouns.

6.3 Comparing Nouns with Words Missed by LIWC

This section aims to seek further information regarding the utility of LIWC when analysing the manifestos of FRLAVEs. This will provide further evidence toward research question 4, albeit more focused on the use of LIWC and the LIWC standard dictionary specifically. As seen already in this chapter, despite its relatively basic operation, NLTK is capable of identifying ideologically-relevant nouns and in some cases target-relevant nouns where they are present in the data. NLTK has so far been found to outperform LIWC when it comes to extracting context. Whether this is a case of LIWC categorising these words incorrectly, or of LIWC not categorising them at all is unknown. To investigate this further, the lists of nouns extracted by NLTK are now compared with the lists of words not recognised by LIWC.

6.3.1 Unrecognised Words in the Manifesto of Anders Breivik

Initial NLTK analysis of Breivik's manifesto identified 29,812 nouns. Of these, 15,483 (51.9%) are also not recognised by the LIWC standard dictionary, leaving 48.1% that are recognised by LIWC. Many of the 15,483 unrecognised nouns are likely to be contextually relevant, but by using the list of commonly found nouns in Breivik's manifesto,

shown in Table 6.1, the analysis can be narrowed down to a manageable size. When cross-referencing the nouns shown in Table 6.1, LIWC does recognise all of the religion-based nouns including 'Muslim', 'Christian' and 'Jihad', with all categorised in the *Religion* category of the LIWC standard dictionary. However, many other commonly-found nouns in Breivik's manifesto including 'Europe' and 'immigration' are not recognised by LIWC. Of the nouns shown in Table 6.1, those which are recognised by LIWC are all categorised well in logical categories, but the odds of LIWC recognising a noun in Breivik's manifesto is still less than correctly predicting the toss of a coin.

6.3.2 Unrecognised Words in the Manifesto of Brenton Tarrant

In comparison to Breivik, LIWC recognises nearly 15% more nouns in the manifesto of Brenton Tarrant, recognising 1,190 of 1,907 (62.6%) of the nouns identified, compared to the 48.1% recognised in Breivik's manifesto. This may be due to the historical section in Breivik's manifesto, which contains a large amount of very specific nouns which LIWC cannot be expected to recognise. Despite more nouns being recognised in Tarrant's manifesto, the contextually relevant nouns are not dealt with well. From the list of nouns shown in Table 6.5, only 'replacement', 'environment', 'children', 'birth' and 'birthrates' are recognised by LIWC. This leaves key nouns such as 'traitors', 'invaders' and 'immigration' unrecognised by LIWC. In terms of categorisation, 'replacement', 'environment' and 'birth' and 'birthrates' are all categorised under the *Relativity* category. 'Replacement' is categorised as a *Motion* word, with 'environment' categorised a 'Space' word. Oddly, 'birth' and 'birthrates' are both categorised as *Time* words, but are not included in either the 'Health' or 'Sexual' categories. 'Children' are categorised under the *Social Processes*, *Drive* and *Power* categories, although are not included in the *Family* category. On the basis of this, LIWC analysis misses a large amount of contextually-relevant information due to a combination of not recognising and not properly categorising nouns identified by NLTK. This is not to say the categories within LIWC currently are necessarily wrong, rather that the categories needed to improve the categorisation of extremist content do not currently exist within LIWC.

6.3.3 Unrecognised Words in the Manifesto of John Earnest

LIWC performs better with the manifesto of John Earnest, recognising 68.1% of the nouns identified by NLTK. The most common nouns in Earnest's manifesto, shown in Table 6.8 are mostly recognised by LIWC on account of many being religious words. Notable ex-

ceptions include ‘race’ and ‘synagogue’, both not recognised by LIWC. The exclusion of ‘synagogue’ is particularly odd given that ‘mosque’, present in Earnest’s manifesto, is part of the *Religion* category in the LIWC dictionary, presumably due to a Mosque being a place of religious worship. It then makes little sense as to why ‘synagogue’ is not also included in the *Religion* category for the same reason. This finding raises questions of consistency in LIWCs categorisation process. In real world terms, a negative document with Mosques as a focal point would be analysed by LIWC as containing a high level of words in both the *Negative Emotion* and *Religion* category. The same document but with synagogues switched out for Mosques, would register as merely negative. Therefore, LIWC may be less suitable when analysing antisemitic content.

6.3.4 Unrecognised Words in the Manifesto of Patrick Crusius

A total of 370 different nouns are identified by NLTK in the manifesto of Patrick Crusius. Of these, 147 are not recognised by LIWC, leaving 223 nouns (61.3%) that are recognised. The most common nouns present in Crusius’ manifesto, shown in Table 6.10, are not dealt with well by LIWC, with the same nouns not being recognised yet again: ‘immigrants’, ‘immigration’, ‘bullet’ and ‘invaders’ are all unrecognised. Despite ‘invaders’ not being recognised, ‘invasion’ is part of the *Power* and *Drives* categories. Many political nouns such as ‘republican’ or ‘democrat’ are not recognised by LIWC, as are ‘environment’ and ‘diversity’. Of particular relevance to Crusius’ manifesto, neither ‘Hispanic’ nor ‘Hispanics’ are recognised by LIWC, although there is not a category in the LIWC dictionary that is clearly suitable. Similarly, ‘whites’ is also not recognised by LIWC. As mentioned previously in this study, ‘white’ is recognised as a word under the *See* category, in the context of colour, not race. Due to this, ‘whites’ is likely not categorised due to the lack of consideration of potential racial contexts. With regards to the nouns shown in Table 6.11, none of these are recognised by LIWC, although this is of little surprise given their specificity, focus on firearms and the lack of suitable LIWC categories. In the case of Crusius’ manifesto at least, LIWCs faults come largely from a lack of recognition rather than miscategorisation.

6.3.5 Unrecognised Words in the Manifesto of Stephan Balliet

Balliet’s manifesto contains a relatively high number of unrecognised nouns, with 229 (48.8%) of the 469 nouns identified by NLTK not being recognised by LIWC. This is likely to due to the large section of Balliet’s manifesto dedicated to the manufacture of his

own improvised weaponry, and using a number of very specific and uncommon nouns in the process. This is reinforced when investigating the most common nouns found in Balliet's manifesto, shown in Table 6.12. Many of these are related to Balliet's improvised weaponry and none of these nouns are recognised by LIWC. A number of religious words are also shown in Table 6.12, with 'Jew', 'Jews' and 'kippur' recognised by LIWC as part of the *Religion* category. As noted previously, 'synagogue' is not recognised by LIWC. Given the specificity with which Balliet discusses his improvised weaponry, there can be no expectation for the LIWC standard dictionary to account for these nouns. Rather, as with the manifesto of John Earnest, the failure to recognise 'synagogue' — the third most commonly used religious word in Balliet's manifesto — is an obvious loss.

6.3.6 Unrecognised Words in the Manifesto of Tobias Rathjen

Despite being authored originally in German, LIWC recognises 550 (61.2%) of the 899 nouns identified in the translated manifesto of Tobias Rathjen. Rathjen does spend a considerable portion of his manifesto discussing relatively normal topics such as football and Hollywood, and it is perhaps these topics that LIWC is more suited for, reflected in the high level of recognised nouns. When focusing on the most common nouns found in Rathjen's manifesto, shown in Table 6.14, the vast majority are recognised by LIWC. Only geographical place names are not recognised, alongside 'surveillance', 'crime', 'example(s)', 'superpower' and 'state'. That 'surveillance', 'superpower' and 'state' are not recognised by LIWC suggests a failure to identify the conspiratorial narrative present in Rathjen's manifesto. LIWC performs less well when it comes to the lesser-used nouns in Rathjen's manifesto, with many key nouns failing to be recognised. In all, the most commonly used nouns in Rathjen's manifesto are generally recognised by LIWC, but then the most commonly used nouns in Rathjen's manifesto are also relatively normal.

6.3.7 Unrecognised Words in the Manifesto of Dylann Roof

Contrary to Rathjen's manifesto, the manifesto of Dylann Roof is a purely ideological document. Despite this, LIWC still recognises 179 (58.5%) of the 306 nouns identified by NLTK in Roof's manifesto. The list of the most common nouns in Roof's manifesto accurately reflect the racially-focused nature of the document. As seen in previous manifestos, references to 'Hispanics', 'blacks' and 'whites' are not recognised by LIWC. Also not recognised by LIWC are a wide variety of highly relevant nouns to Roof, such as 'ancestor(s)', 'nationalists', 'n****rs' and 'segregation'. The individual versions of 'blacks'

and 'whites' are recognised by LIWC, as colours in the *See* category, but not in a racial context. This categorisation is reflected in the higher than normal value for words in the *See* category in Roof's manifesto, 3.40% (compared to the average of 1.08% given by Pennebaker et al. (2015)). Thus, with regards to the manifesto of Dylann Roof, some of the more commonly used nouns are miscategorised by LIWC, and some of the less commonly used but still highly relevant nouns are not recognised at all.

6.3.8 Unrecognised Words in the Manifesto of Elliot Rodger

Despite the vast majority of Rodger's manifesto being an autobiography of his life, LIWC still fails to recognise 40% of the nouns identified by NLTK. Upon initial analysis of the list of unrecognised nouns, many are nouns which are highly specific to Rodger's life (such as 'Santa' and 'Barbara'). This is supported by analysing the most commonly used nouns in Rodger's manifesto, shown in Table 6.16. Whilst the majority of these nouns are recognised by LIWC, the more specific names such as 'Santa', 'James', 'Soumaya', 'Isla' and 'Vista' are not recognised. Upon narrowing down Rodger's manifesto to his ideologically-focused epilogue, the most commonly used nouns in his epilogue, shown in Table 6.17, are all recognised by LIWC with the exception of 't', which is only output due to a detection fault with NLTK.

From Table 6.17, 'women' and 'girls' are categorised by LIWC as words in the *Female* and *Social Processes* categories. This is certainly not a mistaken categorisation and shows that when it comes to Incel manifestos, some ideologically relevant nouns may be identified by LIWC in the correct context. When comparing the values of the *Female* and *Sexual* categories in Rodger's manifesto with the LIWC averages given in Pennebaker et al. (2011), Rodger's manifesto contains 53% more *Female* words and 138% more *Sexual* words than the average. These differences are not necessarily statistically significant but they do suggest a capability on LIWC's part to identify Incel ideology.

6.3.9 Unrecognised Words in the Manifesto of Christopher Sean Harper-Mercer

Although Rodger's and Mercer's manifestos carry much the same narrative, they take very different approaches to presenting said narrative, with Mercer focusing much more on ideology than Rodger. Despite this, LIWC recognises a larger percentage of NLTK-identified nouns in Mercer's manifesto when compared to Rodger's. Of the 269 nouns

identified by NLTK, LIWC recognises 170 (63.2%) of them. Compared with the high values of the *Female* and *Sexual* LIWC categories in Rodger's manifesto, Mercer's manifesto contains 17% less *Female* words than the LIWC average. However, this decrease is offset by a 477% increase in *Sexual* words in Mercer's manifesto compared to the LIWC average.

This would suggest that LIWC is not as capable at identifying Incel ideology as initially suggested by Rodger's manifesto; or that the sexual focus of Incel ideology is more prevalent and more important than the misogynistic elements; or it means nothing and Mercer merely cared more about a lack of sex than his hatred of women. In reality, Mercer's decreased use of words in the *Female* category may be due to him getting distracted from his misogyny by being a satanic racist. This is reflected in the most commonly-used nouns in Mercer's manifesto, shown in Table 6.19, which include a number of racially-based nouns such as 'Africa', 'black(s)', 'blackness' and 'beast'. Of these, only 'black' is identified by LIWC. Many of the nouns also show a large number of references to previous mass shooters — Seung Cho, Elliot Rodger and Adam Lanza — which are all present in Table 6.19; yet none are recognised by LIWC. Thus, due to Mercer's increased focus on his racist and satanic narratives, and his admiration for previous mass shooters, LIWC fails to recognise many of the nouns relevant to his actual target, the community college at which he was enrolled.

6.3.10 Unrecognised Words in the Manifesto of Jim David Adkisson

At only 1,059 words and ideologically focused, one might expect LIWC to perform very poorly when it comes to recognising nouns in Adkisson's manifesto. Rather, LIWC recognises 128 (61%) of the 209 nouns identified as nouns by NLTK. As initially expected, many of the commonly used nouns shown in Table 6.20 are not recognised by LIWC, with 'America', 'Democrat(s)' and 'liberals' all unrecognised by LIWC. The only particularly relevant noun identified by LIWC is 'church', categorised not only as part of the *Religion* category but also the *Affiliation* and *Drives* categories in the LIWC standard dictionary. Similarly, 'church' is the only target-relevant noun, shown in Table 6.21, that is recognised by LIWC. Although LIWC has recognised 61% of the nouns identified in Adkisson's manifesto, this simply follows the pattern of failing to recognise specific nouns relevant to manifestos. This is of little surprise given that the LIWC standard dictionary is not built to handle this type of information.

6.4 Discussion and Summary

The use of NLTK presented in this chapter is almost certainly an improvement on LIWC in terms of extracting contextually-relevant information. As shown in the majority of cases, NLTK identifies ideologically relevant nouns from the data. Across all ten FRLAVE manifestos, NLTK consistently extracts nouns that are relevant to the ideology of the manifesto and its author; and in some cases, extract nouns relevant to the accompanying attack, where that information is included by the author.

The issue, as this study views it, is that without the benefit of hindsight showing which nouns are relevant, there are a large amount of other words extracted by NLTK. In terms of Anders Breivik's manifesto, according to initial LIWC analysis his manifesto contains 807,125 words and NLTK analysis output 29,812 unique strings that NLTK identified as nouns. On average, running NLTK analysis on a manifesto to extract nouns reduces the word pool by 87%. Despite this large reduction, the average number of unique nouns output by NLTK is 3,844. To follow the needle and haystack metaphor, the needle has been found, but so have 3,843 other needles: now the problem becomes finding the correct needles amongst a stack of needles. It should be noted that in larger manifestos such as those of Breivik and Rodger, this reduction in the word pool is much higher, at 96.31% and 96.67% respectively. Generally speaking, the larger the manifesto, the larger the reduction.

The problem then becomes one of separating the relevant nouns from the rest of the noise. As is shown here, with the benefit of hindsight this is a very simple, if not slightly tedious task. It is easy to mark 'synagogue' as a relevant noun in the manifesto of John Earnest and give it more importance than 'mosque' when it is already known that Earnest attacked a synagogue. It is easy to give 'black' and 'blacks' more importance than 'Jews' and 'Hispanics' in the manifesto of Dylann Roof when details of his attack are already known. This issue is amplified when dealing with manifestos like those of Elliot Rodger and Tobias Rathjen. With the other eight extremist manifestos analysed in this study, the assumption that an extremist manifesto might contain a lot of extremism holds true, and simply looking at the most common nouns identifies a set of relevant nouns that, on some level, reflect the ideology or targets of the manifesto.

In the cases of Rodger and Rathjen however, looking at the most commonly used nouns does not reflect an obvious extremist narrative. The most common nouns in Rodger's manifesto, shown in Table 6.16, suggest an angry male teenager's diary more than any-

thing else, in which one would expect a relatively high rate of female and sexual references. Similarly, the most commonly used nouns in Rathjen's manifesto certainly suggest a conspiratorial narrative is present, but nothing clearly points towards an extremist narrative. In 80% of cases then, looking solely at the most commonly used nouns can reveal some ideologically relevant nouns. The assumption that some of the most commonly used nouns will be ideologically relevant is based solely on the further assumption that the most common topic in any given manifesto is the ideology of the manifesto. Unfortunately, this cannot be guaranteed.

By grouping manifestos together, the usage of certain nouns and the context they are used in can be compared across similar manifestos. Ideologically similar manifestos have been shown in this chapter to share ideologically relevant nouns. However, this is no guarantee of said shared nouns being used in the same context. The manifestos of Anders Breivik, Brenton Tarrant and Patrick Crusius all contain a white nationalist narrative, with 'immigrants', 'immigration', 'invaders' and 'invasion' all highly relevant nouns used in all three manifestos. The main context in which these nouns are used in the manifestos of Anders Breivik and Brenton Tarrant is one of Islamophobia, where 'immigrants' is indirectly referring to Muslim immigrants. However, in Crusius' manifesto, 'immigrants' is seen to refer to Hispanic immigrants, with the difference seen in Crusius' choice of target. These summarised results suggest that, in terms of research question 2, whilst NLTK is capable of extracting contextually relevant information from the manifestos of FRLAVEs, this is very much the easy step when it comes to actually identifying said information.

This is also the case in groups of manifestos linked by inspiration. John Earnest and Patrick Crusius both state that Brenton Tarrant inspired their attacks. Shared between all three is 'destruction', which is used in environmental, cultural, and societal contexts across the three manifestos. For a dictionary-based approach to be reliable in terms of word usage and meaning, the data must also be relatively reliable. The argument that this study puts forward is that the underlying data — manifestos of FRLAVEs — is not reliable. There is no guarantee that any two given manifestos of the same ideology communicate said ideology in the same way. Taking into account again the manifestos of Elliot Rodger and Tobias Rathjen, there is not even a guarantee that ideological content makes up any significant portion of the manifesto, raising further questions regarding the quality of the data.

The issue of data quality is also encountered when extracting nouns that are considered relevant to the attacks which accompanied the manifestos. In the cases of Anders

Breivik, Brenton Tarrant, Stephan Balliet, Elliot Rodger and Jim David Adkisson, NLTK does output nouns which are later identified as relevant to the physical attacks. A significant level of prior knowledge about the accompanying attacks is required to identify the target relevant from the noise of other, similar nouns. This is best illustrated in Table 6.3 which shows that NLTK successfully extracts 'Norway' and 'Oslo' as nouns relevant to the location of Breivik's attack. What Table 6.3 also illustrates is that 'France', 'Germany', 'Israel', 'Turkey', and 'Sweden' are all referenced more frequently than 'Norway', and 'London' more than 'Oslo'. Without prior knowledge of Breivik's attack there is no reason to prioritise 'Oslo' over the others.

Similar to the issue of noise is just how few target relevant nouns are actually present in the data. The manifesto of Anders Breivik contains 29,812 nouns, as identified by NLTK. Of these, this study found 15 nouns that are relevant to Breivik's target. Thus, 0.05% of the NLTK-identified nouns in Breivik's manifesto are relevant to his eventual targets. Across all five manifestos in this dataset in which target relevant nouns are identified, said target relevant nouns make up, on average, 1.58% of the total nouns identified. Accompanying this issue of scarcity is that of downright non-existence. In half of the manifestos in this dataset, the manifesto does not contain any references to the target of the attack which the manifesto accompanied, and thus does not contain any target-relevant nouns. This result again suggests that whilst NLTK can extract target relevant nouns, the tool is mostly reliant on hindsight to identify those nouns from the wider output of nouns, and completely reliant on the manifestos to contain such nouns in the first place.

Finally, when comparing the nouns identified by NLTK with words not recognised by the LIWC standard dictionary, this study finds that on average LIWC recognises 59.5% of said nouns. When focusing on ideologically important nouns present in the manifestos, LIWC tends to perform poorly when compared to the average stated prior. In general, religious words such as 'Islam', 'Jew' and 'mosque' are all recognised by LIWC and categorised as part of the standard dictionary in the *Religion* category. However, the consistency of the standard dictionary is questioned when 'mosque' and 'church' are recognised as *Religion* words, but 'synagogue' is left unrecognised. This suggests that the LIWC standard dictionary is less suited to analysing antisemitic content.

Similarly, the LIWC standard dictionary performs poorly when analysing white nationalist content. Nouns key to the white nationalist narrative such as 'immigrants', 'immigration', 'invaders' and 'invasion' are all unrecognised by LIWC. This is a not a criticism of the LIWC standard dictionary as such: there are no categories of the dictionary

within which these words could be logically placed. Rather, this evidence supports the argument that the LIWC standard dictionary is unsuitable for analysing white nationalist, antisemitic and white supremacist content as a whole. For example, in the manifesto of the white supremacist Dylann Roof, LIWC fails to recognise key nouns such as 'whites', 'blacks' and 'segregation'. The individual nouns 'white' and 'black' are recognised as words by LIWC, as part of the *See* and *Perceptive Processes* category; yet they are recognised as words of colour and not in a racial context. Despite the apparent lack of suitability for analysing white nationalist, white supremacist and antisemitic content, the performance of LIWC and its standard dictionary is more promising when it comes to incel manifestos. In both the manifestos of Elliot Rodger and Christopher Sean Harper-Mercer, LIWC analysis showed an above-average use of words in the *Sexual* category of the standard dictionary, suggesting some capability to identify incel content. On the other hand, an above average use of *Female* references may also be expected across both incel manifestos, although this was not reflected in the LIWC results.

In all, this chapter has provided evidence towards answering research questions 2 and 4. Research question 2 asks if contextually important information and target information can be automatically extracted from FRLAVE manifestos. This chapter presents evidence showing that contextually important information and target information can be automatically extracted from the manifestos of FRLAVEs. However, this is an over-simplified answer and does not take into account other findings presented in this chapter. Yes, contextually relevant and target relevant information can be extracted using NLTK to identify nouns, but a huge amount of other information is also extracted alongside the relevant information. This feeds into research question 4: whether or not computer assisted content analysis tools such as LIWC are suitable for analysing the manifestos of FRLAVEs. The evidence presented in this chapter shows that, although LIWC recognises 59.5% of the NLTK-identified nouns on average, the LIWC standard dictionary is not well-suited to the analysis of manifestos that contain a white nationalist, white supremacist or anti-Semitic content. Whilst this suggests that creating a new dictionary focused on extremist content is the obvious solution, this is again an oversimplification. Dictionary-based approaches rely on consistent meaning for categorisations to be accurate; this chapter has shown that consistent meaning of key nouns cannot be guaranteed. In ideologically similar manifestos, the same noun can reference multiple different outgroups. Ideological similarity does not suggest a high likelihood of target similarity. Put simply, manifestos of FRLAVEs and their authors cannot be relied upon to communicate the same ideology in the same way, or for the same ideology to lead to a similar target. To go back to the haystack metaphor, the overall aim is twofold. First, the needles must be extracted from

the haystack. Second, those needles have to be analysed in order to show something about the haystack they have just been extracted from. The issue is that the same needle in two different haystacks, is not actually the same needle; its surroundings - context - matter. Similarly, the reality of the data is that sometimes the needles do not exist.

In the next chapter this study investigates whether or not the manifestos of FRLAVEs support the use of Hogg's uncertainty-identity theory and social identity models of crossed-categorisation to further understand extremism. In doing so, this builds on the already completed investigation of other social identity theory models, such as prejudice as group-based emotion, and will offer evidence to the suitability of a social identity approach to extremism.

7 Investigating Uncertainty-Identity Theory and Crossed Categorisation Bias in the Manifestos of Far Right Lone Actor Violent Extremists

In Chapters 2 and 5, this study has argued for a social identity approach to investigating extremism through the adoption of a social identity definition of radicalisation, extremism and violent extremism. Alongside this, this study has also found that Smith's (2000) model of prejudice as group-based emotion is supported by LIWC analysis of manifestos of FRLAVEs. As part of an investigation into a wider social identity approach to extremism, this chapter focuses on Hogg's (2007) uncertainty-identity theory and its suitability for understanding radicalisation and extremism. Specifically, research question 3(a) asks whether FRLAVE manifestos support the hypothesis stated by Hogg, Meehan and Farquharson that "where people feel their self-relevant values and practices are under threat, self-uncertainty strengthens identification with 'radical' groups" (2010, p. 161)? This is followed by the investigation of another social identity concept, that of crossed-categorisation. Research questions 3(c) asks if FRLAVE manifestos support any of the crossed-categorisation predictions of expected outgroup bias introduced later in section 7.4 of this chapter.

In order to answer research question 3(a), sections 7.1 and 7.2 attempt to investigate uncertainty levels using the LIWC category of *Certainty* words, which are assumed to measure certainty in manifesto data. Initially, it is found that manifestos of FRLAVEs have a higher value for *Certainty* — contain more words relating to certainty — than the control data. Whilst certainty cannot be used to measure uncertainty, one who is certain regarding a topic is unlikely to also be uncertain regarding the same topic. Thus the higher than average *Certainty* value suggests that FRLAVEs who author manifestos have a low level of uncertainty. In reality, this study shows that the performance of said LIWC category is unreliable. For instance, in the case of the manifestos of Patrick Crusius and John Earnest, only 37.5% and 55.9% of the words LIWC categorises as reflecting certainty are actually used in a manner that reflects certainty regarding a topic. On top of this, as LIWC also does not capture the wider context or topic a word is used in, this study finds that in the same two manifestos 20.9% and 48.4% of the *Certainty* words are used in a context of identity, which is the only topic of uncertainty this investigation is interested in. Finally, section 7.3 suggests that an alternative, more qualitative approach such as that of Wagoner et al. (2017) is likely required to further investigate the application of uncertainty-identity

theory to manifestos of FRLAVEs, although such an approach might be limited by a lack of access to manifesto authors, either through death or imprisonment.

To answer research question 3(c), sections 7.4 and 7.5 of this chapter show how group categorisation interactions effect the treatment of partial outgroups and full outgroups, and whether any of the predictions for how outgroup bias is affected hold true in the manifesto data. For a detailed overview of self-categorisation theory, category dimensions and crossed-categorisation predictions, please refer to Sections 3.4 and 3.4.2. Whilst this study finds that many of the manifestos do not contain multiple category dimensions — race, gender and religion are good examples of dimensions — five of the manifestos analysed in this study do contain multiple category dimensions. Of these five, the manifesto of Tobias Rathjen does not contain any clear interaction between the dimensions. Three are manifestos containing a white nationalist narrative but, despite the similar ideological content, fail to consistently follow any sort of previously stated crossed-categorisation prediction. Category dominance, where one group dimension takes priority over the other, is the most commonly seen result of category interaction (although the dominating category is not always consistent). The final manifesto, that of Christopher Sean Harper-Mercer, does not follow any prior crossed-categorisation prediction, with Mercer expending a level of fury towards one of his partial outgroups, but a level of compassion toward his full outgroup, seeing them largely as victims. In terms of answering research question 3(c), there is no clear result in regard to this. If these manifestos do support any of the crossed-categorisation predictions then it is that of category dominance, although said support is not particularly strong.

7.1 A Brief Uncertainty-Identity Theory Overview

This study so far has shown mixed evidence towards supporting a social identity approach to extremism. Smith's (2000) model of prejudice as group-based emotion is supported by initial LIWC analysis. Said analysis shows that manifestos of FRLAVEs contain a significantly higher level of third person plural pronouns compared with control data, suggesting a strong outgroup focus across the manifesto data. Similarly, the manifestos also contain a significantly higher amount of words in the LIWC category of *Negative Emotion*. Together, both results strongly support Smith's model of prejudice, further supporting a social identity approach to extremism. For a more detailed explanation of uncertainty-identity theory, refer to Section 3.5; this section offers only a brief overview.

Uncertainty-identity theory is offered as an alternative motivational theory for self-categorisation, one of the key aspects of social identity theory. Initially, self-categorisation was said to be motivated by a need to enhance one's self and self-esteem. Uncertainty-identity theory on the other hand suggests that the reduction of uncertainty is the key motivating factor for self-categorisation. Uncertainty-identity theory is based on the idea that being uncertain is unpleasant, and thus the reduction of uncertainty is pursued. Although uncertainty reduction can be a positive and challenging experience for some, uncertainty can also lead to stress and anxiety. Hogg (2009) argues that for cases where uncertainty is relevant to the person or their identity, then the motivation to reduce uncertainty can be very strong. It is this strong motivation to reduce uncertainty that Hogg suggests can lead an individual to identify with extremist ideologies.

The next issue is with how uncertainty is measured. Hogg explicitly states, and this study agrees, that uncertainty cannot be measured by measuring certainty. However, Hogg also argues that identifying with extremist ideologies and groups reduces uncertainty. Thus, one might expect that an individual willing to carry out a violent attack for their cause to have a low level of uncertainty. Their uncertainty has, in effect, been successfully reduced to the point where they are very committed to their new identity.

Although certainty is no definite measure of uncertainty, the two are obviously closely linked. If an individual is found to be highly certain when discussing a single topic, it seems unlikely that the same individual would be highly uncertain about the same topic. Certainty is measured by LIWC by using a dictionary of words that are linked to certainty. The *Certainty* category contains words such as 'always', 'completely', 'definite' and 'facts'. Uses of these words are then counted and compared against the total word count of the text to output a percentage.

7.1.1 Limitations

Before moving on to the analysis, there are clear limitations that must be recognised; manifesto data is unlikely to be able to fully support (or not support) uncertainty-identity theory. Uncertainty-identity theory states that extremist groups and their ideologies can drastically reduce uncertainty where the need to reduce uncertainty is particularly dire. There is no clear timeline for this, and thus we can only assume a state of certainty at two points in time.

The first point in time is prior to radicalisation where, assuming uncertainty-identity

theory applies, uncertainty regarding an individual's identity is at its highest. The second point in time is where the now-radicalised and highly extremist person is so certain in their identity that they believe violence is the only way to protect their identity. This study assumes that by this point uncertainty has been significantly reduced. Thus, in order to fully support uncertainty-identity theory, conclusions on the level of uncertainty must be made at both the aforementioned points in time.

The manifesto data used in this study is obviously largely focused on the second point in time, when uncertainty should be significantly reduced as the individual gains conviction to plan and carry out their attack. The manifesto data does not, generally speaking, cover the first point in time. The manifesto of Elliot Rodger, in particular the autobiographical content, does cover various stages of his life, but this is very much the exception in terms of covering different points in the life of the author.

Whilst the value of the LIWC category of *Certainty* may be capable of providing a general level of certainty across a text, the value says nothing about identity-based uncertainty, which is what this chapter is investigating. On the other hand, given the nature of the data used in this study, it may well be a fair assumption that identity is likely to be a major topic in most manifestos of FRLAVEs.

Using the LIWC category of *Certainty* is no guaranteed measure of certainty of course. A low value for *Certainty* does not infer a low level of actual certainty regarding the author's identity. The text could be diluted by topics which contain very few certainty-categorised words. The manifesto of Stephan Balliet, for example,has a *Certainty* value of 0.97%. This may be because he is low on certainty or it may be due to the ideological content of the manifesto being diluted by the equally large section on his improvised weaponry not containing many certainty words. Put simply, the value of *Certainty* given by LIWC does not necessarily reflect the level of certainty the author has in their identity.

7.2 Measuring Certainty

From the control data given by Pennebaker et al. (2015), the average value of *Certainty* is 1.35%. That is, in an average text, 1.35% of the total words in that text are categorised in the *Certainty* category by LIWC. Looking at the full manifesto dataset as a whole the average value for *Certainty* is 1.74% which, whilst not statistically significant, is 29% higher than the control group.

The distribution of *Certainty* values amongst the manifesto data is shown below in Figure 7.1. As seen in Figure 7.1, the manifestos of Patrick Crusius and Stephan Balliet have lower values for *Certainty* than the average and are checked as possible outliers in the dataset. Ultimately, many tests for detecting outliers exist although there is no real agreement on which are most effective, especially when dealing with a small dataset where a normal distribution cannot be assumed. This study uses the interquartile range to calculate outlier fences for the distribution, finding that the outlier fences stand at 0.88875 and 2.67875 for the upper and lower fences respectively. Thus, any values that fall outside of these limits are considered an outlier. From Figure 7.1, none of the manifestos have *Certainty* values that fall outside of this range, and thus none are outliers. It should be noted however that the manifesto of Patrick Crusius has a *Certainty* value of 0.89, falling inside the lower outlier fence by only 0.00125, suggesting that Crusius' manifesto should be investigated more closely.

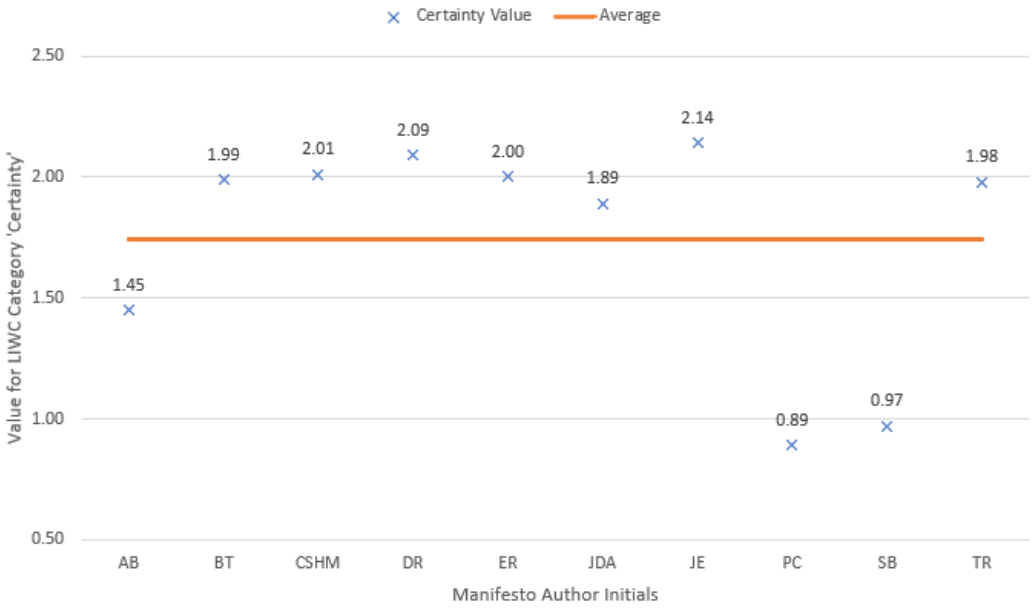


Figure 7.1: Figure showing the distribution of LIWC *Certainty* values in the manifestos of FRLAVEs, along with the average value.

7.2.1 Certainty in the Manifesto of Patrick Crusius

Looking into the *Certainty*-focused LIWC analysis of Crusius' manifesto further, the deterministic nature of LIWC again leads to inaccuracies. In some cases, LIWC identifies a *Certainty* word when said word is not used in a way that reflects any level of certainty. When discussing the gun he used, Crusius states that his "ak47 is definitely a bad choice".

In this statement LIWC identifies 'definitely' as a word in the *Certainty* category. In this case, Crusius comes across as very certain that his choice of weapon is not the best, so LIWCs analysis is seen as accurate in regard to this particular statement.

However, when attempting to separate his ideology from Donald Trump, Crusius states that he expects that "some people [will] blame the President or certain presidential candidates for the attack". Unsurprisingly, LIWC identifies 'certain' as a word in the *Certainty* category, which is questionable when reading the context surrounding the word. It is not Crusius showing certainty regarding a topic, but merely a method of inferring specific presidential candidates without mentioning their names, assuming a level of prior knowledge in his expected reader. Similarly, when discussing his views on immigration, Crusius states that there is "extensive evidence that all the problems these invaders will cause". LIWC identifies 'all' as a word of *Certainty*. This study suggests that "extensive evidence" actually reflects a higher level of certainty on this topic, but notes that LIWC does not deal with multi-word phrases. In all, LIWC still identifies the statement as containing some level of certainty regarding Crusius' views on immigration.

Upon manually identifying each use of *Certainty*-categorised words in the manifesto of Crusius, this study finds only nine uses that are reflective of a level of certainty when taking the wider context into account. In total, words that LIWC categorises as *Certainty* words are used 24 times in Crusius' manifesto. Thus, of the times that LIWC identifies a *Certainty* word in Crusius' manifesto, in only 37.5% of those is the identified word used in a context that reflects a level of certainty regarding a topic. Further to this, only 20.83% of identified *Certainty* words are used in contexts that could be associated with Crusius' identity. This suggests that, in agreement with Hogg, certainty cannot be used to measure uncertainty. With regard to LIWC specifically, this study suggests that the LIWC category of *Certainty* is also not the best reflection of how certain the author is. In the best case scenario, the LIWC category of *Certainty* gives a good measure of how much an author writes about topics in which they have some degree of certainty, and is no real reflection of the overall certainty of the author.

7.2.2 Certainty in the Manifesto of John Earnest

Having further investigated the manifesto with the lowest value of *Certainty*, this discussion now focuses on the manifesto with the highest level of certainty; that of John Earnest, with a *Certainty* value of 2.14%. This represents 14 different words used a total of 93 times. Of the uses of words categorised as showing *Certainty* in Earnest's manifesto, this

study finds 55.9% are used in a context that reflects certainty regarding a topic. Taking this into account, the original *Certainty* value of 2.14% becomes 1.20%. When looking for *Certainty* words used in the context of Earnest's identity, this study finds 48.39% of the 93 uses of *Certainty* words are in the context of identity.

Based on the manifestos of Patrick Crusius and John Earnest, the *Certainty* category within LIWC performs very poorly when used to analyse the manifestos of FRLAVEs. This study finds that, whilst LIWC identifies a number of words in each manifesto that are part of the LIWC category of *Certainty*, there are many occasions where upon manual review of the text, the word does not reflect certainty. In addition to this, LIWC can only identify specific words that are part of its *Certainty* category, it has no capability to detect the context or topic said certainty is directed toward. With this in mind, the values of *Certainty* given by the control data are no reflection of identity-related certainty. The only conclusion this study can make with the data available is that generally speaking, authors of FRLAVE manifestos speak in more certain terms. Even then, such a conclusion is questionable based on the fact that this study has found in many cases the *Certainty* words are not used in a context that reflects any level of certainty. The purely deterministic nature of LIWC again causes issues of consistency in analysis. Said determinism assumes that words such as 'all', 'nothing', and 'positive' are always used in a way that reflects certainty regarding a given topic. That many of words categorised in the *Certainty* category are also categorised in other categories appears to conflict with the deterministic nature of the tool. For example, LIWC assumes that 'truth' is always used as a word of certainty and a word of positive emotion.

Aside from issues surrounding LIWCs performance when it comes to measuring certainty, this study does find some promising manifesto content with regards to uncertainty-identity theory. John Earnest, despite not covering multiple points in time in his manifesto, discusses a key moment that led to his attack. "I remember a specific moment in time after Brenton Tarrant's sacrifice that something just clicked in my mind. 'If I won't defend my race, how can I expect others to do the same?' I immediately got to planning, and I never looked back. I never had doubts. I never felt afraid. I never felt anxious-just the occasional nervous excitement". This study suggests this quotation reflects Earnest encountering a major feeling of uncertainty reduction as a reaction to Brenton Tarrant's attack. Earnest himself states this occurred four weeks prior to his own attack which puts it roughly two weeks after the Christchurch shootings committed by Tarrant. This may suggest that the actions or manifesto of Brenton Tarrant further strengthened, or reduced the uncertainty surrounding, the extremist ideology and identity of John Earnest.

In all, this study has quickly come to the conclusion that automated tools are not suitable for measuring certainty of uncertainty in the manifestos of FRLAVEs, and therefore the research question focused on the applicability of uncertainty-identity theory cannot be answered to any acceptable level of detail.

7.3 Discussion and Summary

Initially, this study finds some support for the application of uncertainty-identity theory to radicalisation and extremism on the basis that the manifestos of FRLAVEs contain a higher than average level of certainty — measured by the LIWC category of *Certainty* — compared to control data. However, upon further investigation this study finds a number of issues with the LIWC category of *Certainty*; namely, the deterministic nature of LIWC causes problems with context. Secondly, because LIWC does not capture context, the value of *Certainty* is no indication of the level of identity-based certainty, the main point of interest to the research question. To measure identity-based certainty or uncertainty likely requires a more, if not totally, qualitative approach. Semi-automated or automated methods are too deterministic in their approach to accurately measure uncertainty or certainty, and too general to focus on social identity uncertainty specifically.

In a study carried out by Wagoner et al. (2017), participants were asked 12 questions in order to measure their social identity-uncertainty, with 11 of these forming a social identity scale. These 11 items are shown below in Table 7.1, applied to social groups in the US. This study finds no method of applying those same 11 items to the manifesto data without having access to the authors of said manifestos (all authors are either dead or imprisoned).

Despite a initial analysis finding the LIWC category of *Certainty* to be unreliable and inaccurate, this study does find minimal content that, at the very least, supports further investigation of the application of uncertainty-identity theory to understanding extremism. To specifically answer research question 3(a), this study finds no evidence that the manifestos of FRLAVEs do not support the hypothesis put forward by uncertainty-identity theory, and finds minimal content that would appear to support said hypothesis. Issues regarding the measurement of uncertainty must not be ignored but, in the contexts of extremism more generally and the manifestos used in this study specifically, the solution is not obvious given that access to authors is likely required. Such a non-conclusion does

Table 7.1: Table showing 11 items used by Wagoner et al. (2017) to measure identity-uncertainty in Americans.

#	Items to Measure Social Identity Uncertainty
1	I feel that the definition of America's identity is unclear
2	I feel uncertain about what it means to be an American
3	I feel uncertain about the characteristics that define being an American
4	I feel uncertain about what America stands for
5	I feel uncertain about the distinctiveness of America's identity
6	I feel uncertain that the American identity I know is correct
7	I feel uncertain fitting-in as a typical American
8	I feel uncertain about other Americans accepting me as a typical American
9	I feel uncertain about being a representative American
10	I feel uncertain about being recognised as a typical American by other Americans
11	I feel uncertain about who I am as an American

not offer support to the adoption of a social identity approach to extremism more generally, even if there is some content present in the manifesto data that points to further investigation being required.

The next section continues the search for support of a social identity approach to extremism by investigating research question 3(c); that is, where FRLAVE manifestos contain scenarios with two different group categorisation dimensions interacting, do any of the current models of crossed-categorisation scenarios apply?

7.4 Interacting Dimensions in Far Right Manifestos

The categorisation of ingroups and outgroups are based on a category dimension, i.e. race or gender. In the case of one category dimension, the only concern is with a simple ingroup and outgroup. It is assumed that the ingroup, whatever it might be, is treated positively, with the outgroup being treated negatively. When two category dimensions are involved the situation becomes more complex, with full ingroups, full outgroups and partial outgroups (or partial ingroups) now involved. Assuming that in a single dimension scenario an ingroup receives a standardised level of positive treatment (+1) and an outgroup receives negative treatment (-1), there are a number of predictions as to how two category dimensions interact in crossed-categorisation scenarios.

The simplest of these predictions is the additive prediction suggested by Brown and Turner (1979). Under this prediction, a full ingroup is treated as simply ingroup + ingroup, thus the treatment of the full ingroup, using the previous values, would be $(+1)+(+1)=2$. Partial outgroups are treated neutrally as ingroup + outgroup = $(+1)+(-1)=0$, and full outgroups are treated as $(-1)+(-1)=(-2)$. Vanbeselare's (1991) category differentiation predictions are split into two. The first suggests that negative bias in partial outgroups is eliminated due to being cancelled out by the ingroup status. At the same time, bias toward the full outgroup is higher than expected. The second category differentiation prediction is toned down, with negative bias only reduced rather than totally eliminated. The values resulting from these predictions are shown in Table 7.2 below. Category conjunction predictions are also split into two (1987). The split is based on whether identity is perceived as being under a high or low level of threat. When under a high level of threat, the dissimilarity prediction states that partial outgroups are treated as full outgroups. When the threat to identity is low, the similarity prediction states that the partial outgroups are treated as the full ingroup. The previous predictions assume that both category dimensions are of equal importance. The category dominance prediction dismisses this assumption — such that categorisation is based purely on the dominant category dimension, with the non-dominant category ignored. The final prediction, hierarchical ordering, states that categorisation along the second dimension is dependent on the prior categorisation along the first dimension.

Table 7.2: Table showing the predicted evaluative results expected under a variety of predictive models of partial outgroup bias in crossed-categorisation contexts. Negative values show some level of negative bias and discrimination toward that group.

Prediction Model	Full Ingroup	Partial Outgroup		Full Outgroup
		In-Out	Out-In	
Social Identity	+2	0	0	-2
Category Differentiation				
(Elimination)	+1	+1	+1	-3
(Reduction)	+2	0	0	-2
Category Conjunction				
(Dissimilarity)	+3	-1	-1	-1
(Similarity)	+1	+1	+1	-3
Category Dominance	+1	+1	-1	-1
Hierarchical Ordering	+4	0	-2	-2

As mentioned, crossed-categorisation scenarios require categorisations to take place over multiple dimensions. In a manifesto of a FRLAVE, one would expect there to be plenty of examples for this. But this is not the case, with many focused on a single category dimension. Dylann Roof, for example, is focused solely on a racial dimension of white versus black. Elliot Rodger initially appears to be focused on gender, although he also targets men, suggesting that even with a single category dimension accurately identifying an ingroup or outgroup can be complex. The only clear category dimension present in the manifesto of Jim David Adkisson is based on political stance, with Adkisson heavily anti-liberal. Both the manifesto of John Earnest and Stephan Balliet contain only one major category dimension, that being religion, with both being antisemitic. The manifesto of Tobias Rathjen is a little more complex due to it arguably containing two major category dimensions, reflecting the two narratives present. The first, ethnicity, is the major focus of Rathjen's hatred, although it is not always clear what the ingroup is along this dimension (Rathjen states that he "can imagine halving the population [of Germany]", which would be the obvious ingroup otherwise). The second dimension is in regards to the intelligence service that he believes is surveilling him. Again the ingroup is not particularly clear along this dimension. The larger issue with regard to crossed-categorisation scenarios is that despite the presence of two category dimensions there is no interaction between the two. Based on this discussion, none of the aforementioned manifestos contain situations in which crossed-categorisation predictions can be applied.

Despite the manifestos discussed above not containing crossed-categorisation scenarios, there are some manifestos in the dataset where group category dimensions do interact. In the manifesto of Anders Breivik three major category dimensions emerge: religion, immigration and politics. By immigration this study is referring to immigration status, whether or not one is an immigrant. Crossed-categorisation is only concerned with interactions between two category dimensions and thus this discussion is concerned with interactions between religion and immigration; religion and politics; and immigration and politics. Religion and immigration is a common interaction in the manifesto of Breivik, with Muslim immigration one of the key topics and the major receiver of hate from Breivik. That Breivik focuses on Muslim immigration can be treated as evidence that Breivik places more importance on the religious category dimension than the dimension of immigration. There does not appear to be a great deal of interaction between the religion and political category dimensions. Rather, Breivik describes how those who sit on one side of his political divide enable and encourage the 'Islamisation' of Europe. This is also the case with regards to the category dimensions immigration and politics; there is no detailed interaction, he simply believes that a certain political stance increases

immigration but does not categorise any group according to both dimensions. Thus, in the manifesto of Anders Breivik, when the category dimensions of religion and immigration interact, there is some evidence to suggest that the interaction follows the category dominance prediction as illustrated in Table 7.3, with religion as the dominant category dimension.

Table 7.3: Table showing the full ingroup, full outgroup and partial outgroups under group dimension interaction in the manifesto of Anders Breivik.

Category Interaction		Immigrant	
		Is Not	Is
Religion	Christian	+1	+1
	Muslim	-1	-1

The manifesto of Brenton Tarrant is unsurprisingly similar. The immigration dimension is again present, and if the wider context of Tarrant's manifesto is taken into account there is also a religion dimension heavily involved. However, Tarrant does not refer to either partial outgroup and he rarely references Muslims directly; instead choosing to refer to his outgroup as immigrants or invaders. This might suggest that Tarrant also follows the category dominance prediction with immigration-status the dominant dimension; this is illustrated in Table 7.4. However, he does not seem to take into account non-immigrant Muslims, which would suggest that the immigrant dimension is perhaps not as dominant as first thought. This would also run counter to the interaction between the same dimensions of the manifesto of Anders Breivik, where religion is the dominant dimension. In two relatively similar manifestos (ideologically speaking), with the same category dimensions, crossed-categorisation takes place under the category dominance prediction — although the dominant category differs between the two manifestos. A final possibility is that immigration is not a category dimension at all and is simply an alternative method (along with invaders) of referring to Tarrant's outgroup. If this is the case, then there are not multiple category dimensions and thus no crossed-categorisation scenarios in the manifesto of Tarrant.

Similarly, the manifesto of Patrick Crusius contains the category dimensions of immigration and race, with Crusius' full outgroup being Hispanic immigrants. Again the dimensions are not treated with equal importance, with one being dominant over the other. Crusius treats all Hispanic people as immigrants and thus the partial outgroup of non-immigrant Hispanics does not - in his eyes - exist. His other partial outgroup of white immigrants is only referred to in passing, with Crusius using the historic example

Table 7.4: Table showing the full ingroup, full outgroup and partial outgroups under group dimension interaction in the manifesto of Brenton Tarrant.

Category Interaction		Immigrant	
		Is Not	Is
Religion	Non-Muslim	+1	-1
	Muslim	?	-1

of white immigrants invading and taking over America as an example of why his actions are - again in his eyes - just. Crusius' treatment of his two partial outgroups again follows the category dominance prediction of crossed-categorisation with race as the dominant dimension, illustrated in Table 7.5.

Table 7.5: Table showing the full ingroup, full outgroup and partial outgroups under group dimension interaction in the manifesto of Patrick Crusius.

Category Interaction		Immigrant	
		Is Not	Is
Race	White	+1	+1
	Hispanic	-1	-1

Finally, the manifesto of Christopher Sean Harper-Mercer is of particular interest where crossed-categorisation scenarios are concerned. Namely, there are many instances of crossed-categorisation with the category dimensions of gender and race, with black females being Mercer's full outgroup. As expected from an incel, Mercer shows extreme hatred towards both partial outgroups. Despite Mercer's full outgroup being black females, the vast majority of his hatred is directed toward black males. Many of his references towards black females paint them as victims of black males, with Mercer showing no real level of hatred towards his full outgroup. This leads to a very strange scenario in which Mercer's full outgroup is treated relatively positively (as a victim), but with one partial outgroup (black males) suggesting strong category dominance of race. This study has made a tentative attempt at illustrating this category interaction in Table 7.6, although this should not be taken as any sort of concrete model. This would suggest that some real-world crossed-categorisation scenarios are far more complex than any of the prior predictions account for.

Table 7.6: Table showing the full ingroup, full outgroup and partial outgroups under group dimension interaction in the manifesto of Christopher Sean Harper-Mercer.

Category Interaction		Race	
		White	Black
Gender	Male	+1	-2
	Female	?	+1

7.5 Discussion and Summary

Previous results in thus study have shown mixed levels of support to a social identity approach to extremism, and this is also the case here with regards to crossed-categorisation models. That six of the ten manifestos contained in the data set do not contain crossed-categorisation scenarios is an issue, and suggests that the application of crossed-categorisation models to extremism is not generally suitable. Where group category dimensions do interact in the manifestos of FRLAVEs, the category dominance model of crossed-categorisation appears to be the most applicable. This is best illustrated by crossed-categorisation scenarios in the white nationalist manifestos of Anders Breivik, Brenton Tarrant and Patrick Crusius. All three manifestos have an interaction between religion/race and immigration category dimensions. Religion and race are the most dominant categories in the manifestos of Breivik and Crusius, whilst immigration is the dominant category in Tarrant's manifesto. Therefore, although category dominance has been found to be applicable to multiple crossed-categorisation scenarios present in the manifestos, the dominant category is not consistent, even when the manifestos are ideologically similar.

As well as a lack of consistency, there is also evidence of crossed-categorisation scenarios which do not make a great deal of sense. The interaction between multiple group category dimensions seen in Mercer's manifesto is a complete outlier and is very reflective of the manifesto in general. Ideologically speaking, Mercer's manifesto is a mess of multiple ideologies all jumbled together. Similarly, the way in which his group dimensions interact makes little logical sense, with him treating his full outgroup fairly positively. Research question 3(c) asks if FRLAVE manifestos support any of the crossed-categorisation predictions regarding expected outgroup bias. The evidence in this chapter would suggest that where crossed-categorisation scenarios are present in manifestos of FRLAVEs, it is likely the interaction of group category dimensions will follow the category dominance model.

8 Conclusion

The concept of a terrorist personality has long been seen to be an over-simplified view of those that carry out terrorist attacks. Despite a large amount of literature on the issue, no distinct terrorist personality has been identified (J. G. Horgan 2017; Monahan 2015; Silke 1998). In recent years research has, thankfully, moved away from identifying such a terrorist personality. However, this has been replaced by a new phenomenon focusing on the analysis of extremist content using computer-assisted content analysis tools such as LIWC and various NLP and sentiment analysis software, inherently requiring some sort of linguistic profile in the process. One of the most common results from this type of research is that extremist content tends to contain a negative sentiment, which seems to be stating the blatantly obvious. This study takes an interdisciplinary approach to assessing the suitability of the methodology and methods used in these studies, providing both theoretical and evidence-based critiques that show these methods to be highly prone to the post-structural critiques of language and meaning. The issues raised by this study must be solved, minimised, or at the very least recognised by future research that utilises such automated methods in the analysis of extremist content.

Whilst the social identity approach to defining extremism was first suggested by McCauley and Moskalenko in 2008, and again suggested by Berger in 2018, there is little research that attempts to build on the suggested definition and assess the applicability of social identity models and concepts to understanding extremism. This study identifies a number of models within social identity and uses the manifestos of FRLAVEs to assess the applicability of these models for further explaining extremist behaviour. By showing that a number of social identity concepts such as Smith's (2000) model of prejudice as group-based emotion and the category dominance model of group interaction are supported by the manifesto data, this study has shown further support for the adoption of a social identity approach to extremism. At the very least, it is hoped that the results of this study lead to more concepts within social identity theory being applied to extremist content and behaviour. Although this study was unable to fully investigate whether the manifesto data supported uncertainty-identity theory, the theory itself appears promising and requires further research. However, the obvious caveats surrounding the complexities of measuring identity-based uncertainty in extremists should not be ignored.

There are two major aims of this study. The first aim is to investigate whether the manifestos of FRLAVEs support a social identity approach to extremism. In order to in-

vestigate the applicability of a social identity approach to extremism, this study takes a number of approaches. The first is to put forth an argument for the social identity definition of extremism and the addition of violent extremism into the wider discourse. The second part of this is to investigate the applicability of various models found within social identity theory to the manifestos data. These models include Smith's (2000) model of prejudice as group-based emotion; Hogg's (2007) uncertainty-identity theory and a number of crossed-categorisation predictive models on group interaction. The objective of these investigations is to show whether or not models found within social identity theory are applicable to extremist content, thus showing support for the adoption of a social identity approach to extremism.

The second aim is to examine the suitability of automated tools, like LIWC and NLTK, for analysing FRLAVE manifestos, and extremist content more generally. This study takes a multi-faceted approach to this problem, using literary theory and a methodological discussion in order to assess overall suitability of the tools. The literary critique aims to provide the basis of this investigation, and it is this criticism that is generalisable to other forms of extremist content, and perhaps to content in general. The second aim is to use a mixed-methods approach to either support or reject the literary theory criticism. This mixed-methods approach looks for any issues in the results of the LIWC and NLTK analysis of the manifesto data.

8.1 Summary

Chapter Two initiates a discussion surrounding the definitions of radicalisation, extremism and terrorism, based on current UK definitions. This study argues that the definition of radicalisation should treat radicalisation as *a* process rather than *the* process. Whilst this change is slight, it allows the definition of radicalisation to exist in terms of the end point of a radicalisation process, rather than attempting to explicitly define the process itself. Alongside this, this study argues in favour of the adoption of the social identity approach to defining extremism suggested initially by McCauley and Moskalenko (2008) and built on by Berger (2018). As part of this social identity approach to defining extremism, this study also adopts and argues for Berger's suggested separation of the act and the ideology in how terrorism is used as a term. This results in the introduction of the term 'violent extremism', which builds on the social identity definition of extremism; and the new use of terrorism as simply an act, or tactic, that is often used by violent extremists. This change, in theory, removes any ideological references from 'terrorism' as a term.

As part of the social identity approach to extremism, this study identifies a number of frameworks and models within social identity theory that may be applicable to FRLAVE manifestos, with the suggestion being that if they are, this would lend further support to a social identity approach to extremism. The first of these models is suggested by Smith (2000), and shapes prejudice as group-based emotion. The second involves the interactions between various group category dimensions and the predicted result of said interaction; a number of predictions are compared against real-world interactions present in the manifestos. Finally, uncertainty-identity theory is introduced as an alternative motivation for group identification. Simply put, uncertainty-identity theory suggests that one might identify with a radical group in an attempt to reduce uncertainty surrounding one's own identity.

Chapter Five introduces the software Linguistic Inquiry and Word Count (LIWC), using the tool to analyse ten manifestos of FRLAVEs. In doing so, this study discovers that 20 of the 79 LIWC variables investigated are significantly different in FRLAVE manifestos. Three of these categories, *Third Person Plural Pronouns, Negative Emotion* and *Anger* are also commonly identified as important when identifying extremist material in previous research. Words in these three categories are found significantly more often in the manifestos of FRLAVEs compared to control data provided by LIWC. This not only suggests that the manifesto data used in this study follow the same language patterns seen in previous research in terms of *Third Person Plural Pronouns, Negative Emotion* and *Anger*, it also supports Smith's (2000) model of prejudice as group-based emotion. Through a more in depth investigation into the results of the remaining LIWC categories, LIWC is shown to perform poorly in several categories under an extremist context. This leads into further analysis that searches for contextually important information in the words not recognised by LIWC. Results of said analysis show that LIWC is poorly suited to identifying contextual information in the manifestos of FRLAVEs. Where contextual information is extracted by LIWC - 'white' and 'black' in the manifesto of Dylann Roof for example - it is shown that LIWC often misunderstands the meaning of these words in an extremist context, highlighting how the structured, deterministic nature of LIWC can lead to inaccuracies in its results.

Building on the struggles LIWC has with context, Chapter Six utilises a different tool in an attempt to better extract context from the manifestos of FRLAVEs. The Natural Language Toolkit (NLTK) is used to extract nouns from the manifestos, which are then manually searched for contextually important information. This Chapter shows that

whilst NLTK performs much better than LIWC when it comes to extracting contextual information, NLTK also extracts a large amount of other, less relevant, information. The issue then becomes one of identifying the contextual information from the noise. As Chapter Six shows, identifying contextual information with the benefit of hindsight is unsurprisingly simple. However, in many cases, without the benefit of hindsight this study shows that there is no logical reason why contextual information may be identified as such. This issue is compounded by the presence of manifestos such as those authored by Elliot Rodger and Tobias Rathjen, which contain such a large amount of other information not immediately relevant to their extremist ideologies, the nouns that are relevant are effectively lost in the noise. Chapter Six also shows that whilst contextual information can be extracted from manifestos by NLTK, this is based on the assumption that contextual information is present within the data to begin with. It is shown that in the case of many manifestos, information relevant to the accompanying attack target is simply not present in the text.

Chapter Seven moves back to the social identity approach to extremism, investigating the use of uncertainty-identity theory to understand and explain extremism. Unfortunately, this Chapter finds no evidence to support or argue against the use of uncertainty-identity theory to understand extremism. Rather, Chapter Seven shows that the attempted measurement method, using the LIWC category of *Certainty* is not suitable for measuring levels of either certainty and uncertainty. Specifically, the *Certainty* category is unreliable at identifying words that genuinely reflect a level of certainty in a topic; it is also too general to measure certainty relating to the author's identity. This study argues that a more qualitative approach is required, briefly introducing Wagoner et al's (2017) approach, although noting that access to authors would be required which, given the authors of the manifestos used in this study, is unlikely (and impossible in some cases).

Chapter Seven also investigates another set of models present within social identity theory, those of crossed-categorisation. Crossed-categorisation occurs when an individual can be categorised according to multiple group dimensions, gender and race for example. There exist a number of predictive models as how these dimensions interact, and Chapter Seven investigates the applicability of these predictive models to crossed-categorisation scenarios found within manifestos of FRLAVEs. This study shows that crossed-categorisation scenarios are not as common as initially expected, with many manifestos focused solely on a single group dimension like race, or there not being a suitable interaction between multiple dimensions within a manifesto. Of the crossed-categorisation scenarios that do occur in the manifesto data, Chapter Seven shows that the

interactions most commonly follow the category-dominance model. This suggests that when two group category dimensions interact, one of the dimensions becomes the dominant dimension, and an individual is simply categorised according to the dominant dimension. That this study shows the category dominance model is found frequently within crossed-categorisation scenarios in FRLAVE manifestos is seen to support the adoption of a social identity approach.

8.2 Limitations of the Study

To state the obvious, this study suffers from a lack of data; conclusions are made based on a small sample size. However, given the nature of the data and the fact that every piece of extremist data used in this study has an accompanying body count, this study does not want more data. Future work is able to gather more data by loosening the ideological and source boundaries of the data. For example, a future study could also include the manifestos of other lone actor violent extremists such as Ted Kaczynski, or the manifestos of school shooters could be added to the data set. Additionally, non-manifesto texts might be included, such as forum posts, social media posts, multimedia transcripts, or books such as James Von Brunn's *Kill the Best Gentiles*. This study used a more restricted set of data in order to minimise the number of variables within the data, under the impression that if results showed support for a social identity approach to understanding extremism, future work could widen the scope for data collection.

The size of the dataset is only one half of the data-based limitations this study encounters. As this study has mentioned throughout, the quality of data can at times be an issue. For example, some data is not always fully focused on the ideology of the author, with manifestos like Elliot Rodger's containing a large amount of non-ideological content. Other data does not contain all the contextual information that this study aims to extract. The manifesto of Anders Breivik for example contains little information regarding the details of his actual attack.

The most obvious methodological limitation is the use of LIWC results in the investigations into the applicability of various social identity theory models. As discussed throughout this study, LIWC suffers from changes in context leading to miscategorisation of words that may be key to a text, with 'white' and 'black' failing to carry any racial connotation according to the categorisations used by LIWC standard dictionary. This limitation is best seen when LIWC is used to assess the applicability of uncertainty-identity

theory to the manifestos of FRLAVEs. LIWC is found to categorise a number of words as reflecting certainty, when in reality this is not the case. This limitation is lessened in certain LIWC categories, such as *Third Person Plural Pronouns*, due to words in that category being less prone to a change in meaning. Yet any LIWC result is susceptible to inaccuracies based on meaning change due to context.

8.3 Concluding Remarks

Whilst tools such as LIWC and NLTK, and automated content analysis tools more generally, have their place in the analysis of extremist content, this study has shown that much attention must be paid to the limitations of these tools. With the use of a literary theory argument, this study suggests that computer-assisted content analysis tools are incapable of accurately and reliably reading texts in the context that the text is authored. This drastically reduces the range of interpretations available to such tools, showing that tools such as LIWC enforce meaning on a word in a blatantly deterministic manner, when determinism can only lead to a loss of meaning. In the case of texts authored in contexts such as far right extremism, this has a significant effect on the accuracy of results from tools such as LIWC. LIWC assumes a structuralist reality, where language has a clear structure, certain words have certain meanings and certain meanings are expressed via certain words. This study argues that such a reality does not exist, with words and their related meanings, the signifiers and signifieds of language, being far too fluid for a tool like LIWC to a) cover all of the potential meanings of a word, and b) identify any new contexts without prior knowledge. As suggested earlier in this study, analysing manifesto data with LIWC is forcing a structuralist language system onto a post structuralist approach to language; and unsurprisingly, the results are not inspiring.

Although this argument is theoretically based, this study also takes an evidence-based approach to further testing this suggestion. In support of these tools' susceptibility to context, this study closely examines LIWC analysis of ten manifestos authored by FRLAVEs. Examination of this analysis shows a multitude of inconsistencies in the LIWC standard dictionary that support the theoretical criticism of automated tools in general: language in manifesto data must be understood rather than just counted. This criticism appears applicable to dictionary-based approaches in general, no matter what context a dictionary may be aimed toward.

Whilst LIWC struggles with context, basic functionality of NLTK excels at extract-

ing contextual information from the manifestos of far right lone actor violent extremism. However, in doing so NLTK also extracts every noun from a manifesto, obfuscating the important nouns within a large amount of nouns that are largely irrelevant to the manifesto authors target or ideology. The issue then becomes one of distinguishing the contextually important nouns from the more irrelevant, less important, noise. A dictionary-based approach is the obvious and perhaps easier answer, but the limitations of such an approach have been shown. It is hoped that these conclusions show that an interdisciplinary approach must be taken in order to either improve these tools, or to identify a new methodology for analysing the type of content used in this study. Researchers using these tools to analyse extremist content must be aware of the limitations of the tools when it comes to a loss of meaning, or an enforced change of meaning due the deterministic nature of the tools. Although it is tempting to suggest that these tools can automatically identify extremist content, this study has shown strong evidence in opposition of this, suggesting instead that automated content analysis tools cannot be relied upon to correctly identify the wider context of a text and smaller contexts of individual sentences and paragraphs.

Alongside this assessment of computer-assisted content analysis tools and their suitability for analysing extremist content, this study also argues for the adoption of a social identity approach to extremism. Building on the social identity approach to defining extremism suggested by Berger, McCauley and Moskalenko, it is shown that a number of models found within social identity theory appear applicable to the manifestos of FRLAVEs. Smith's model of prejudice as group-based emotion is shown to be strongly supported by the manifesto data, with the authors using high levels of words relating to outgroups alongside a highly negative tone more generally. Where group category dimensions interact, one category often takes priority over the other, suggesting that the category dominance model may be applicable to extremist content where two dimensions interact. Although the application of uncertainty-identity theory to further understand the manifesto data cannot be supported by this study due a lack of capability to measure identity uncertainty, this study does find content within the manifesto data that suggests uncertainty reduction may take place upon seeing other attacks take place, or upon reading the manifesto of a previous attacker. Whilst definitely not conclusive evidence, this study suggests that future work identify a reliable method for measuring identity-based uncertainty without author access.

9 References

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Appendix

9.1 Appendix A: Initial LIWC Test Results

Table 9.1: Table showing the full results of a Shapiro-Wilk test for normality performed on Datasets A and C. Where $p < 0.05$ the variable is not normally distributed in the dataset, this is highlighted in **bold**.

Category	S-W Test p-value
Analytical Thinking	0.586
Clout	0.411
Authentic	0.081
Emotional Tone	0.460
Words > Six Letters	0.356
Dictionary Words	0.107
Total Function Words	**0.023**
Total Pronouns	0.311
Personal Pronouns	0.244
1st-Person Singular Pronouns	0.630
1st-Person Plural Pronouns	**0.025**
2nd-Person Pronouns	**0.014**
3rd-Person Singular Pronouns	**0.000**
3rd-Person Plural Pronouns	0.056
Impersonal Pronouns	0.592
Articles	0.568
Prepositions	0.522
Auxiliary Verbs	0.690
Common Adverbs	0.511
Conjunctions	0.438
Negations	0.240
Common Verbs	0.316
Common Adjectives	0.367
Comparisons	0.623
Interrogatives	0.690
Numbers	0.050

Quantifiers	0.753
Affective Processes	0.646
Positive Emotion	**0.034**
Negative Emotion	0.179
Anxiety	**0.034**
Anger	**0.018**
Sadness	0.265
Social Processes	0.615
Family	**0.021**
Friends	0.467
Female	**0.018**
Male	**0.007**
Cognitive Processes	0.528
Insight	0.277
Causation	0.238
Discrepancy	0.340
Tentative	0.273
Certainty	0.078
Differentiation	0.556
Perceptual Processes	0.837
See	**0.002**
Hear	0.676
Feel	**0.007**
Biological Processes	0.069
Body	0.125
Health	**0.001**
Sexual	**0.005**
Ingestion	0.055
Drives	0.612
Affiliation	0.108
Achievement	0.482
Power	**0.036**
Reward	0.218
Risk	0.098
Past Focus	0.062
Present Focus	0.447
Future Focus	0.548

Relativity	0.847
Motion	0.276
Space	0.142
Time	0.244
Work	0.064
Leisure	**0.002**
Home	**0.014**
Money	**0.026**
Religion	**0.000**
Death	**0.002**
Informal Language	**0.000**
Swear Words	**0.040**
Netspeak	**0.000**
Assent	**0.000**
Nonfluencies	**0.000**
Fillers	**0.000**

Table 9.2: Table showing the full results of a Shapiro-Wilk test for normality performed on the dataset including data groups A, B and C. Where $p < 0.05$ the variable is not normally distributed in the dataset, this is highlighted in **bold**.

Category	S-W Test p-value
Analytical Thinking	**0.000**
Clout	**0.035**
Authentic	**0.000**
Emotional Tone	**0.038**
Words > Six Letters	**0.009**
Dictionary Words	0.756
Total Function Words	**0.002**
Total Pronouns	**0.003**
Personal Pronouns	**0.003**
1^{st}-Person Singular Pronouns	**0.000**
1^{st}-Person Plural Pronouns	**0.008**
2^{nd}-Person Pronouns	**0.000**
3^{rd}-Person Singular Pronouns	**0.000**

3rd-Person Plural Pronouns	**0.001**
Impersonal Pronouns	**0.007**
Articles	0.856
Prepositions	0.107
Auxiliary Verbs	0.134
Common Adverbs	**0.005**
Conjunctions	0.947
Negations	**0.003**
Common Verbs	**0.004**
Common Adjectives	0.801
Comparisons	0.115
Interrogatives	**0.037**
Numbers	0.604
Quantifiers	0.306
Affective Processes	0.199
Positive Emotion	0.918
Negative Emotion	**0.000**
Anxiety	0.251
Anger	**0.000**
Sadness	**0.047**
Social Processes	0.447
Family	**0.000**
Friends	**0.000**
Female	**0.000**
Male	**0.000**
Cognitive Processes	**0.027**
Insight	**0.025**
Causation	0.234
Discrepancy	0.350
Tentative	**0.009**
Certainty	**0.023**
Differentiation	**0.017**
Perceptual Processes	**0.000**
See	**0.000**
Hear	**0.000**
Feel	**0.000**
Biological Processes	**0.007**

Body	**0.000**
Health	**0.031**
Sexual	**0.000**
Ingestion	**0.000**
Drives	**0.017**
Affiliation	0.138
Achievement	**0.046**
Power	**0.001**
Reward	0.158
Risk	0.365
Past Focus	**0.000**
Present Focus	**0.003**
Future Focus	0.095
Relativity	0.173
Motion	0.237
Space	0.054
Time	**0.001**
Work	**0.004**
Leisure	**0.000**
Home	0.233
Money	**0.000**
Religion	**0.000**
Death	**0.000**
Informal Language	**0.000**
Swear Words	**0.000**
Netspeak	**0.000**
Assent	**0.000**
Nonfluencies	**0.000**
Fillers	**0.000**

Table 9.3: Table showing the full results of three Mann-Whitney U tests comparing the mean values for each LIWC variable in data groups A and C; B and C; and A and B. Where $p < 0.05$ this indicates that the null hypothesis has been rejected and the mean values are not equal. Where $p < 0.05$ this is highlighted in **bold**.

	p-values		
Category	A *cf.* C	B *cf.* C	A *cf.* B
Analytical Thinking	0.428	**0.001**	**0.000**
Clout	0.582	**0.000**	**0.000**
Authentic	0.313	**0.000**	**0.000**
Emotional Tone	**0.003**	**0.029**	**0.000**
Words > Six Letters	0.147	**0.000**	**0.000**
Dictionary Words	0.635	**0.018**	**0.016**
Total Function Words	0.958	**0.002**	**0.001**
Total Pronouns	0.428	**0.000**	**0.000**
Personal Pronouns	0.220	**0.002**	**0.001**
1st-Person Singular Pronouns	0.428	**0.000**	**0.000**
1st-Person Plural Pronouns	0.896	**0.000**	**0.000**
2nd-Person Pronouns	0.172	**0.000**	**0.000**
3rd-Person Singular Pronouns	**0.003**	**0.000**	**0.000**
3rd-Person Plural Pronouns	**0.022**	0.212	**0.010**
Impersonal Pronouns	0.875	**0.000**	**0.000**
Articles	0.181	0.154	0.892
Prepositions	1.000	**0.002**	**0.001**
Auxiliary Verbs	0.635	**0.008**	**0.001**
Common Adverbs	0.220	**0.000**	**0.000**
Conjunctions	0.691	0.582	0.317
Negations	0.895	**0.001**	**0.000**
Common Verbs	0.368	**0.002**	**0.001**
Common Adjectives	0.545	**0.003**	0.216
Comparisons	0.492	0.956	0.486
Interrogatives	0.368	**0.000**	**0.000**
Numbers	0.581	**0.035**	0.112
Quantifiers	0.099	0.108	**0.003**
Affective Processes	0.562	0.925	0.420
Positive Emotion	0.155	0.424	**0.000**

Negative Emotion	**0.003**	0.066	**0.000**
Anxiety	0.875	0.894	0.796
Anger	**0.001**	**0.001**	**0.000**
Sadness	0.326	0.90	**0.020**
Social Processes	0.313	**0.045**	0.807
Family	0.089	**0.002**	0.713
Friends	**0.025**	**0.000**	0.146
Female	**0.015**	**0.000**	0.146
Male	0.220	**0.000**	**0.000**
Cognitive Processes	0.635	**0.000**	**0.000**
Insight	0.635	**0.000**	**0.000**
Causation	0.111	**0.000**	0.420
Discrepancy	**0.024**	**0.001**	**0.000**
Tentative	0.428	**0.000**	**0.000**
Certainty	0.060	**0.037**	**0.014**
Differentiation	0.382	**0.000**	**0.000**
Perceptual Processes	0.181	**0.000**	**0.000**
See	0.428	**0.000**	**0.000**
Hear	**0.003**	**0.000**	**0.001**
Feel	**0.031**	**0.000**	0.064
Biological Processes	0.297	**0.008**	0.267
Body	0.544	**0.000**	**0.000**
Health	0.506	**0.009**	**0.040**
Sexual	0.326	**0.042**	**0.031**
Ingestion	**0.007**	**0.000**	0.692
Drives	0.492	**0.000**	**0.000**
Affiliation	0.897	**0.000**	**0.000**
Achievement	0.875	**0.000**	**0.000**
Power	0.073	**0.000**	**0.000**
Reward	0.099	0.506	**0.049**
Risk	**0.018**	**0.000**	**0.010**
Past Focus	0.093	**0.000**	**0.000**
Present Focus	0.713	0.178	**0.031**
Future Focus	0.616	**0.010**	**0.001**
Relativity	**0.022**	0.083	**0.019**
Motion	**0.029**	0.372	**0.006**
Space	0.814	**0.001**	**0.000**

Time	**0.022**	**0.000**	0.469
Work	0.428	**0.000**	**0.000**
Leisure	**0.022**	**0.001**	0.672
Home	**0.015**	0.242	**0.001**
Money	0.895	**0.000**	**0.000**
Religion	0.210	**0.001**	**0.001**
Death	**0.008**	**0.009**	**0.000**
Informal Language	0.209	**0.005**	**0.023**
Swear Words	0.692	**0.000**	**0.000**
Netspeak	**0.028**	**0.030**	0.277
Assent	0.052	**0.000**	**0.007**
Nonfluencies	**0.015**	**0.003**	0.537
Fillers	0.060	**0.001**	**0.040**

9.2 Appendix B: Code Used for Analysis

```
import codecs
import nltk
from collections import Counter

#open file
File = codecs.open("Data/processedManifestoData.txt", "r", 'utf-8-sig')
#read all lines
lines = File.read()
#test if something is a noun
is_noun = lambda pos: pos[:2] == 'NN'
#NLP stuff
tokenized = nltk.word_tokenize(lines)
nouns = [word for (word, pos) in nltk.pos_tag(tokenized) if is_noun(pos)]

#Counts how often a noun is present in the text
nounFreq = Counter(nouns)


#Write nouns and their frequency to output file
with codecs.open("NLTK/manifestoNouns.txt", "w", 'utf-8-sig') as f:
  for k,v in nounFreq.most_common():
    f.write( "{} {}\n".format(k,v))

#Write nouns to output file #1
with codecs.open("NLTK/manifestoNounsNoFreq.txt", "w", 'utf-8-sig')
    as g:
  for l in nounFreq:
    g.write("{}\n".format(l))

#Write nouns to output file #2
with codecs.open("Dictionary_Words/manifestoNounsNoFreq.txt", "w",
    'utf-8-sig') as g:
  for l in nounFreq:
    g.write("{}\n".format(l))
```

Listing 9.1: The nouns.py file used to extract nouns from each manifesto.

```
#open files
nounFile = open("manifestoNouns.txt", "r", errors="ignore")
noDicFile = open("noDicWords.txt", "r", errors="ignore")

#Read into file into lists.
noun = [line.rstrip() for line in nounFile]
noDic = [line.rstrip() for line in noDicFile]

#Convert all strings to lowercase.
nounLines = [x.lower() for x in noun]
noDicLines = [y.lower() for y in noDic]

#Check which words are found in both files.
matching = set(nounLines).intersection(noDicLines)

#Write results to file noDicNouns.txt
with open("noDicNouns.txt", "w") as f:
  for word in matching:
    f.write("{}\n".format(word))
```

Listing 9.2: The comparison.py file used to compare the list of nouns from each manifesto to the list of words from said manifesto not recognised by LIWC.

```
import codecs

#open files
file1 = codecs.open("Brenton_Tarrant/NLTK/manifestoNounsNoFreq.txt", "r", 'utf-8-sig')
file2 = codecs.open("Anders_Breivik/NLTK/manifestoNounsNoFreq.txt", "r", 'utf-8-sig')


#Read file into lists.
list1 = [line.rstrip() for line in file1]
list2 = [line.rstrip() for line in file2]


#Convert all strings to lowercase.
lines1 = [a.lower() for a in list1]
lines2 = [b.lower() for b in list2]


#Check which words are found in all files.
matching = sorted((set(lines1).intersection(lines2)))


#Print words found in files to new document.
with codecs.open("Noun_Comparison/Breivik_Tarrant.txt", "w", "utf-8-sig") as f:
  for word in matching:
    f.write("{}\n".format(word))
```

Listing 9.3: The noun comparison script used to cross-reference the lists of nouns found in the manifestos of Anders Breivik and Brenton Tarrant.