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LETHAL MIND-SETS: INSIGHTS FROM SOCIAL AND EVOLUTIONARY PSYCHOLOGY INTO TERRORISM AND RADICALISATION

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Abstract

Understanding why people become involved in terrorism is vital to inhibiting recruitment and radicalisation, and therefore preventing terrorist attacks. The question of why people support, engage with, and participate in terrorism is addressed in this thesis. Insights into the causes of terrorism and the process of radicalisation are garnered from social and evolutionary psychology in an effort to add an additional interdisciplinary layer of theoretical understanding to existing political science research. The central argument made in this thesis is that certain psychological processes (social identity), and mechanisms (parochial altruism), influence people to favour ingroups and disfavour outgroups in light of particular intergroup cues. Although social identity theories and the concept of parochial altruism pertain to the same argument for bias towards ingroups, which may also entail bias against outgroups, they arrive at this position in different ways and therefore offer alternative insights into what conditions trigger this bias, and responses to it. A novel experimental paradigm with student participants generated data to investigate the evolved mechanism parochial altruism. Social identity theories were applied to certain features of the radicalisation process to explain how and why identification with the Muslim Umma (worldwide community) occurs, which is a central feature of radicalisation in Al-Qaeda type groups. The insights challenge some of the assumptions made by scholars about the nature of radicalisation and terrorism. This thesis considers the process of radicalisation to be rooted in, and influenced by, normal psychological processes and mechanisms that are present in all humans. Although there are caveats, this thesis provides new avenues of exploration and further research to investigate terrorism, radicalisation, and intergroup conflict more generally.

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1. Lethal Mind-sets: Insights from Social-Evolutionary Psychology into the Process of Radicalisation

I absolutely love you to bits and you have been the happiest thing in my life…. I just so much wanted to be with you. But I have to do this for our future and it will be for the best, Inshallah, in the long run.
(Khan 2011)

Introduction

The soft voice and tender words of Mohammad Sidique Khan as he cuddles and kisses his beloved baby daughter are somewhat difficult to associate with a man who would go on to kill and maim scores of passengers bustling to get to work on the London underground on a Thursday morning. July 7th, 2005 will be burned in the memories of British citizens for many years to come. The carnage of the London bombings in which four young men, including Khan, carried homemade explosive devices in backpacks, detonated at rush hour, was testament to their clear intention to maximise causalities.[1] Perhaps more baffling, was that these bombings resulted in the men's own deaths. Barely two months after the bombings a video featuring highly edited footage of Khan was published on Al Jazeera. His words in this video message could not have been more different than those to his baby daughter: "Until you stop the bombing, gassing, imprisonment and torture of *my* people, we'll not stop this fight. We are at war and I am a soldier" (Khan 2013).

Whilst he may be a member of a minority of extremists who advocate and use terrorism in the UK, Khan and his fellow bombers are not alone in their views and attitudes. A number of attacks on British soil have been perpetrated and planned. Some were

[1] Brief introductory information on these characters and others mentioned in the thesis can be found in Appendix 1.

conducted successfully, like the 7/7 London bombings, and the recent murder and attempted beheading of Lee Rigby. Others were not successful, and led to the capture of the would-be perpetrators, such as the attempted Glasgow airport bombing, and the 21/7 attempted London bombing (BBC 2007a; Guardian 2008). Others have not occurred due to prevention by the security services and police (Worrall 2013). Polls and surveys suggest that a significant minority of Muslims in the UK supported the 7/7 bombers in their goals and grievances if not the methods (Populus 2006). There are increasing tensions between Muslims and non-Muslims in the UK (Kotecha 2013). The potential for terrorist attacks on British soil, by British citizens, remains substantial (Parker 2013; MI5 2014). The purpose of this thesis is to help explain support and involvement in terrorism, and the process of radicalisation, with insights garnered from social and evolutionary psychology. The central argument of this thesis is that these insights may shed light on psychological influences potentially underling certain features of radicalisation and terrorism.

Understanding why people might become engaged with, and active members of, groups advocating and using terrorism is vital to being able to prevent it (Silke 2008; Borum 2010; Silber & Bhatt 2007; Horgan 2008; Taylor & Horgan 2006; Richardson 2006). Nevertheless, our understanding of why people support and become involved in terrorism is limited in many ways despite the dramatic increase in literature produced since the September 11 attacks (Silke 2001). Part of this limitation is due to the lack of available data, and access to terrorists (Jackson et al. 2007). Another limitation is the way concepts such as 'terrorist', 'extremist', and 'radicalisation' are defined (Schmid & Jongman 1988). Whilst the problem of definition is apparent for most areas of social and political study, it is especially problematic for understanding *why* people might support and participate in terrorism. This is because there is an inherent value judgement associated with the label (Crenshaw 1981). Such value judgements indicate bias against those that are being defined as *doing* terrorism. This may be acceptable and useful for policy, and law makers, but inhibits understanding on the basis of subjective notions of right and wrong. This assumption of wrongness, implies a lack of objectivity, which therefore calls into question the justification of this kind of definition. Terrorism is a behavioural phenomenon, but the label is typically

directed at groups we do not wish to associate ourselves (or our fighting forces) with, despite sharing that behaviour. The wrongness of the violence that terrorism is associated with, thus relates only to particular groups, whereas other groups that perform similar acts of violence, are not labelled terrorist, on the basis of this subjective rightness of that group.

It is necessary for counter-terrorism policies such as the United Kingdom's CONTEST, to consider terrorism a crime to enable the arrest, charge, and detainment of individuals committing or attempting to commit terrorism (CONTEST 2011). A number of notable scholars of terrorism have their academic roots in forensic and criminal psychology and seem to support the notion that terrorism is a crime (e.g. Horgan 2005; Taylor 2010; Silke 1998). A possible problem with this somewhat implicit interpretation is the potential tendency to exceptionalise individuals who participate in, or support terrorism, as deviant from the norm. Crime is after all, deviant behaviour (Goode 2000). Other limitations include the underdevelopment of key concepts important to understanding the process of radicalisation. These include, but are not limited to: understanding how identification with the Muslim Umma (community) occurs, and why; theoretical insight into why grievances are perceived in such a way that some individuals justify violent responses; and a lack of understanding about how and why perceptions of conflict, and the justness and urgency of violence occur. All of these limitations are arguably vital to the process of radicalisation.

Research Question

This thesis investigates why individuals like Khan commit acts of terrorism, and the psychological processes that influence the progression from relative indifference, to violent extremist fighting on behalf of Islam and the Muslim Umma. Specifically, it addresses the question: How can social and evolutionary psychological theory help us to understand certain features of radicalisation, in order to explain why individuals

support, engage with, and/or participate in terrorism? There are several auxiliary questions that direct the way the thesis addresses this main research question.

- What psychological processes and mechanisms that are present in us all, might influence support/engagement/participation in advocating/using terrorism?
- How might these psychological processes explain how and why an individual experiences identification with a group?
- Under what conditions might these processes and mechanisms be expected to be triggered, and why?
- What behavioural outcomes can we expect to see when triggered?
- How might these processes and mechanisms explain varying levels of support and/or involvement in terrorism?

Definitions[2]

Terrorism

Very few individuals who have political grievances actually go on to commit acts of terrorism (Horgan 2008; Horgan 2005; Crenshaw 2000; Moghaddam 2005a; Silke 1998). However, given that there is no agreed upon definition of terrorism, and that it is typically used as a pejorative label to condemn and criminalise individuals and groups, it may not be so easy to make this judgement (Crenshaw 2000). It is often difficult to tease apart violent actions performed by legitimate armed forces, guerrilla forces, and terrorist organisations when the focus is solely on methods that may result in the death and/or terrorising of civilians (Schmid & Jongman 1988). The term 'terrorism' is argued to be misused, overused, abused, emotive, and implies the legitimacy of the state, which suggests that only violence committed by the state is legitimate (Hoffman 1998, p.23; Richardson 2006, p.19; Booth 2008, p.72; Githens-Mazer 2008). Actions labelled as terrorist when applied to some groups, are labelled

[2] There are a number of acronyms and terms used in this thesis that are defined throughout the thesis. These acronyms and terms can also be found in Appendix 2.

as hate crimes when applied to others for conducting very similar behaviour (e.g. Staniforth 2009). It seems that only 'terrorists' can commit acts of terrorism.

There are several features of terrorism that are generally agreed upon which are summarised by Richardson (2006). Terrorism is "deliberately and violently targeting civilians for political purposes" (Richardson 2006, p.20). The violence is politically inspired, often symbolic and communicates a message. Terrorism involves violence or the threat of violence, and the victims (civilians) may not necessarily be held responsible for grievances, although may be representative of those who are. Finally, and somewhat controversially, Richardson suggests that only sub state actors, not states, commit terrorism. She notes that this addition is for conceptual clarity. Other authors of note suggest that terrorism is a rational and strategic method used by weaker groups (Crenshaw 1981).

Terrorists become exceptionalised even though the method of terrorism is used beyond those we would *label* terrorist (i.e. armed forces). This has important implications for how terrorism is researched. This project attempts to avoid these problems by considering terrorism as a form of intergroup conflict. It does not suggest that terrorism is a particularly unique form of intergroup conflict, although the features of terrorism (politically inspired, targeting civilians, etc.) still apply. The main difference is that terrorism is considered here as an act that any group of individuals (including states) can commit. Positioning terrorism as an act that is *not* exceptional may *not* be useful for condemning it, but it should not be seen as an attempt to condone it either. The purpose of this thesis is to *understand* why people support and participate in it. Exceptionalising individuals on the basis of a political motivated definition would only hinder such an endeavour.

To clarify, the term terrorism is understood here to be a form of intergroup conflict in which a small faction of individuals (possibly belonging to a group or cell), use violence or threaten to use violence towards civilians (which includes off-duty police

and soldiers). This violence (or threat of it) is likely to be symbolic, with intention to communicate a message. Finally, the act of terrorism is politically inspired and committed in pursuit of some kind of political agenda. The term 'terrorist' refers to individuals who make up this small faction. This type of definition is problematic because it does not *exclude* Armed Forces, and other groups that we would probably not want to associate with terrorism. This might be a limitation of this kind of approach to defining terrorism, but is appropriate to the position of this thesis, which is to avoid exceptionalisation of terrorists as far as possible. The old adage 'one person's terrorist is another person's freedom fighter' is especially pertinent to this project.

Radicalisation

Radicalisation is but one route to involvement in terrorism (Borum 2011). However, this is possibly because of the central role given to ideology when radicalisation is defined as: "the social and psychological process of incrementally experienced commitment to extremist political or religious ideology" (Horgan 2009b, p.125). Extremism refers to beliefs and views that are outside of the norm, not moderate and perhaps uncompromising (Precht 2007, p.17). Borum notes that "Most people who hold radical ideas do not engage in terrorism, and many terrorists – even those who lay claim to a 'cause' – are not deeply ideological and may not 'radicalize' in any traditional sense" (Borum 2011, p.8).

This type of definition of radicalisation also assumes that only individuals who absorb extremist ideology can become radicalised, which as history will attest, is perhaps not accurate (Reicher et al. 2008). Others have offered definitions of radicalisation that is less ideologically focused. Rather, they see it as "the development of beliefs, feelings, and actions in support of any group or cause in conflict… It is a psychological trajectory that, given the right circumstances, can happen to any person, group, or nation" (McCauley & Moskalenko 2011, p.4). This is a more useful definition of radicalisation because it acknowledges that it is not a process that afflicts 'extremists', therefore is not rooted in what is largely a relational and unhelpful term. This is the

way in which radicalisation is understood here. This project utilises the definition proposed by McCauley and Moskalenko (2011). Radicalisation is considered to be a set of psychological phenomena in which individuals (and groups) increasingly show support for a group that advocates, threatens, or uses violence. This increasing support is expressed by way of attitudes, beliefs, emotions, and possibly behaviour.

A New Psychological Approach

This thesis draws on interdisciplinary theoretical insights both to answer the proposed research questions and to contribute a new layer of theoretical understanding to existing political science research on terrorism.[3] It brings together two different disciplines (evolutionary psychology and social psychology) to help explain why people might become involved in terrorism and to shed light on the process of radicalisation. Specifically, it uses the 'Social Identity Theory' from social psychology (Tajfel & Turner 1979). It also uses two other auxiliary social identity theories: Social Identity Complexity Theory, and Identity Fusion (Roccas & Brewer 2002; Swann et al. 2009). These theories provide the basis on which psychological processes are considered. The evolutionary concept of parochial altruism is the mechanism that is considered in conjunction with social identity (Choi & Bowles 2007). The Lethal Mind-sets model integrates the concepts of social identity and parochial altruism to explain certain features of radicalisation. Where appropriate, theories are illustrated with case study examples from the July 7th bombers, and Lee Rigby killers (Michael Adebolajo and Michael Adebowale), and other well-known individuals, such as Osama bin Laden and Anjem Choudary.

[3] This project satisfied the criteria for ethical approval. The ethical approval documents can be found in Appendix 3.

Central Argument

The thesis claims that the psychological process of social identity, and the parochial altruism mechanism, influence people to favour ingroups and disfavour outgroups in light of particular intergroup cues, possibly to the extent of incurring a personal cost in order to effect that bias (Bernhard et al. 2006; Tajfel & Turner 1979). This bias may be associated with some degree of disadvantage imposed onto those who are not part of that group (outgroups) (Choi & Bowles 2007). Social identity theories and the concept of parochial altruism pertain to the same argument for bias towards ingroups, which may also entail bias against outgroups. However, the different theoretical underpinnings associated with social and evolutionary psychology provide different dimensions to this argument, including offering alternative insights into what conditions trigger this bias, and responses to it (Schaller, Park, et al. 2003; Neuberg et al. 2009; van Vugt & Schaller 2008). The central proposition of this thesis is that social identity processes and mechanisms of parochial altruism underlie features of the process of radicalisation and may therefore also shed light on support/involvement in terrorist groups.

Features of social identity and parochial altruism are triggered in intergroup contexts, particularly where there are cues indicating some kind of some kind of threat to the ingroup (Derks et al. 2006; Tajfel et al. 1971; Choi & Bowles 2007). The grievances espoused by terrorist groups (and their supporters) can be interpreted through the lens of social identity and parochial altruism to shed light on what conditions trigger these mechanisms into action (which influences attitudinal as well as behavioural outcomes). Context, and individual differences in social identification and parochial altruism may influence variation in attitudinal and behavioural responses to cues of grievance, which may begin to shed light on varying levels of support/participation in terrorism (including non-support/involvement). It is proposed here that radicalisation is *not* a passive process, and it does not just *happen* to people. Rather, all individuals have an innate psychological capacity to engage with, and participate in, intergroup conflict in some form or another (Gat 2009; McDonald et al. 2012; Neuberg et al.

2011). That is, there are underlying cognitive mechanisms and processes that are shared universally across all individuals irrespective of group membership or eventual behavioural outcomes (e.g. terrorism). What matters are when and how these mechanisms are engaged and heightened. On this basis, it is proposed here that radicalisation and terrorism are *inter*group processes, because groupishness in one set of individuals is likely to be perceived as negatively impacting on another.

Methodological Approach

This thesis has two primary goals. The first is to present potential theoretical insights stemming from utilising social identity theories and the evolutionary approach, as a lens through which to understand why individuals may go on to support/participate in terrorism. The second is to provide empirical support for the concept of parochial altruism. The thesis is therefore largely theoretical, with a significant empirical aspect. Social identity theory is well established and heavily researched, but parochial altruism is not. Theory is illustrated where possible with examples from two 'successful' terrorist attacks in the UK: the July 7th London bombings, and the murder of Lee Rigby, and relevant well-known Islamists (such as Osama bin Laden, and Anjem Choudary).[4] It should be noted that in no way does this thesis suggest that these cases are necessarily generalizable to other cases, even within Islamic extremist terrorist groups in the UK, or outside of the UK. These cases are also likely to be of limited generalizability with other types of terrorist groups. Yet, it is important to point out that these cases are not used to test hypotheses, but to *illustrate* theory. Nevertheless, these illustrations may look very different according to the group used, and it is not in the scope of this thesis to address this.

Evolutionary and social psychology provide a set of cutting edge tools in the form of experiments. Experimentation in political science is gaining traction (e.g. Ginges & Atran 2011; McDermott 2002). The experimental paradigm designed and developed

[4] Successful in this case refers to the fact that the attacks were planned and perpetrated and were not inhibited or impeded by police.

here investigates parochial altruistic attitudes and behaviours (ingroup biasing and outgroup disfavouring) using implicit and behavioural measures.[5] One of the benefits of using these kinds of experiments, and this kind of theory, is that there is greater scope for generalisability beyond the subjects used in the study. This allows us to study important features of terrorism and radicalisation that are accessible in the non-terrorist, non-extremist, 'normal' population. In contrast, the lack of available and accessible data is one of the most challenging aspects of studying terrorism (Silke 2001). Utilising theory and methods that look to individuals beyond small terrorist groups, is a way to provide an additional *theoretical* layer of analysis; generate data; and use social and evolutionary psychology to provide different ways of interpreting features of terrorism.

Implications of Argument

The major implication of the thesis is that normal psychological mechanisms and processes facilitate support and involvement in terrorism. This is perhaps at odds with literature and policy decisions that point to context, ideological indoctrination and socialisation, and *individual* vulnerabilities as being the primary risk factors associated with radicalisation and involvement in terrorism (e.g. Horgan 2008; CONTEST 2011). These features are clearly crucial for the radicalisation process to occur. However, it is suggested here that these features *hinge* upon the underlying process of social identity and the parochial altruism mechanism.[6] It is important to understand how these underlying features might a) predispose certain individuals in certain contexts towards the potential for engaging with terrorism, and b) drive and guide, as well as be guided and driven, by other features of the radicalisation process. This would enable to us to understand how and why some people respond to such conditions, whether that be to become more engaged and involved, or to take a step away.

[5] In this case, measures that gauge non-conscious, or automatic attitudes or preferences.
[6] Although it is noted that features of radicalisation and terrorism may also promote, drive, and direct these capacities also.

Attempting to understand terrorists through the lens of deviancy (e.g. crime, or psychological abnormality) is unhelpful and potentially inhibits our capacity to understand processes and mechanisms that we may all share. It also limits us to attempting to study a very small minority of individuals with whom we have very limited access to because of the emphasis of deviancy and difference over normality and similarity (i.e. terrorists are criminals and are motivated to stay out of prison). Therefore, an implication for the approach proposed in this thesis is that we can learn about terrorists and extremists by looking to the similarities between these individuals and the rest of the non-terrorist/extremist population, rather than focusing solely on the differences. Strategies to inhibit radicalisation might be improved by implementing aspects of this argument, specifically with regard to *harnessing* these normal processes.

Main Caveats and Limitations

Several caveats should be noted at the outset. A great deal of literature on terrorism and terrorists exists, not all of it good (Silke 1998). The literature selected for review here was chosen on the basis of the prominence of the authors in the field. However, a different selection, and/or emphasis of different features would have produced a different analysis. Many terrorism researchers note the utility of social psychology and social identity theories in understanding terrorism, but few utilise social identity theories as they are here (Horgan 2009b; Rogers et al. 2007; Dalgaard-Nielsen 2010; Raffie 2013; McCauley & Moskalenko 2011). Nevertheless, there are many limitations with the social identity theory, and different versions including other well established theories such as self-categorisation theory (Turner et al. 1987) and optimal distinctiveness theory (Brewer, M 1991). This thesis focuses on the original social identity theory and two very new offshoots. It does not empirically investigate this aspect of the thesis, but applies features of terrorism and radicalisation, and illustrates with case study examples. It does *not* test hypotheses with these case study examples. The empirical focus of this interdisciplinary thesis is on the concept of parochial altruism which is comparatively under investigated in relation to social identity. There was not the scope in this thesis as a result, to also perform a case study analysis to test

hypotheses. Case study illustrations are a relatively common way to demonstrate theoretical propositions in terrorism research (Crenshaw 1981; Silke 2001; McCauley & Moskalenko 2011; English 2009).

There are many contested aspects of the evolutionary approach, and parochial altruism more specifically. These are discussed in Chapter 4. Perhaps the biggest issue for parochial altruism is that there is a lack of agreement on the definition and substance of the concept. Whereas some scholars emphasise self-sacrifice and outgroup hostility, others expand it to include instances less hostile, and more indifferent towards outgroups (such as withholding benefits) (e.g. Choi & Bowles 2007; Bernhard et al. 2006). This has implications for how the concept is applied and investigated.

The way in which parochial altruism was conceptualised for empirical investigation in this project may have impacted the capacity to access certain traits (i.e. outgroup hostility attitudes) in addition to the other limitations of experimental designs (ecological validity, small (student) sample size, lack of generalizability). Perhaps the most important caveat is the level of analysis this project assumes throughout, which is largely influenced by the assumptions of social identity and parochial altruism theories. Rather than an individual, *or* group level of analysis, the individual is often considered 'as a group member', somewhat merging the two. The individual is embedded in the group (and vice versa), which is appropriate for attempting to understand radicalisation and terrorism (McCauley & Moskalenko 2011; Horgan 2009b). But it is also perhaps somewhat problematic because it *imposes* an assumption of importance of group membership onto individuals, which therefore ultimately skews any analysis in favour of that assumption. This is relevant because some notable terrorism scholars have suggested that terrorism is not necessarily a group phenomenon (Taylor 2010). Nevertheless, there are strong theoretical bases for this choice which rest on evolutionary assumptions of the importance of group membership for ancestral survival and prosperity which is present in us today (Alexander 1987; Barkow et al. 1992; van Vugt & Schaller 2008).

Justifying Choices: Social and Evolutionary Psychology, and Terrorism

Identity is an important feature in terrorism and is implicitly, if not explicitly invoked in most research on radicalisation (Chapter 2). Despite this, it is not well understood, and although identification with the Muslim Umma is important in the radicalisation process, the concept is underdeveloped and somewhat overlooked by many terrorism researchers. Social psychology, and particularly social identity theory, are however, occasionally used to explain how individuals see themselves in relation to others (McCauley & Moskalenko 2011; Moghaddam 2005a; Taylor 2010; Rogers et al. 2007). Others consider social identity in the same vein as deindividuation and obedience – as an external influence that reduces the costs of an individual's involvement in action – therefore, weakening the individual's responsibility in favour of emphasis on group norms (e.g. Borum 2010). Some have gone further and applied the features of social identity theory (and self-categorisation theory) to investigate identity formation in radicalisation (Raffie 2013). Nevertheless, social identity theory offers a rich framework that is yet to be utilised to investigate features of pre-radicalisation, torn identity crises, and root these into the identification process. Therefore, using social identity theory is justified because although many have hinted at the usefulness of its application to terrorism, it is somewhat under-utilised. The addition of social identity complexity and identity fusion theories is justified because each of these theories builds on limitations of social identity theory and therefore bolsters insights into specific features of radicalisation.

An important insight that can be drawn from social identity theories is the assumption of normality. That is, all individuals engage in social identity processes to some degree. The evolutionary approach is similar in that it assumes underlying similarities between individuals, rather than differences. Utilising social and evolutionary psychology theories therefore provides a way to investigate radicalisation based on

similarities rather than differences between terrorists and non-terrorists, explicitly refuting the exceptionalisation of those who become involved in terrorism. Given the somewhat implicit tendency to view radicalisation as deviant (i.e. particularly when it is defined in terms of increasingly extremist beliefs), such an approach may be particularly enlightening to understanding the psychological processes and mechanism that may enable it to occur.

There are also advantages to utilising the evolutionary approach in this thesis. Evolutionary psychology is a burgeoning area of research that is rapidly gaining scholarly attention and prestige, most notably in North America (Buss 2013; Barkow 2006; Pinker 2002; Wright 1994). It provides a scientific grounding for particular features of our social (and non-social) cognition and behaviours in biology, going beyond the *tabula rasa* perspective often pursued by other disciplines that struggle (or omit) to provide an ultimate cause of a particular phenomenon (Barkow et al. 1992). Importantly, it can also derive novel predictions from the evolutionary perspective, and test them often using novel and interdisciplinary methodological tools (Neuberg et al. 2009; van Vugt & Schaller 2008). It is the combination of these advantages, and methodological tools brought by social and evolutionary psychology, that insights into terrorism and radicalisation could be drawn.

A core contribution of this thesis is that it homes in on psychological *similarities* between those who go on to commit acts of intergroup violence and those who do not. The applications of such a framework are therefore potentially broad and deep. In addition, there is something particularly interesting and relevant about terrorism (it is rare and extreme[7]) that makes it a good topic in which to develop this theory because it offers an unusual opportunity to test evolutionary and social psychological theory. Ultimately however, it is important to develop a greater understanding of the process of radicalisation and why some people support, engage with, and participate in

[7] In terms of number of attacks, and the number of individuals who participate in attacks. However, this view is related to the way in which terrorism is defined, and who is defining it as such. In this case, the focus is on Western states doing the defining.

terrorism – not only for national (and international) security – but also to recognise and work to inhibit increasing tensions between groups at community level that may indirectly stoke radicalisation in society as a whole.

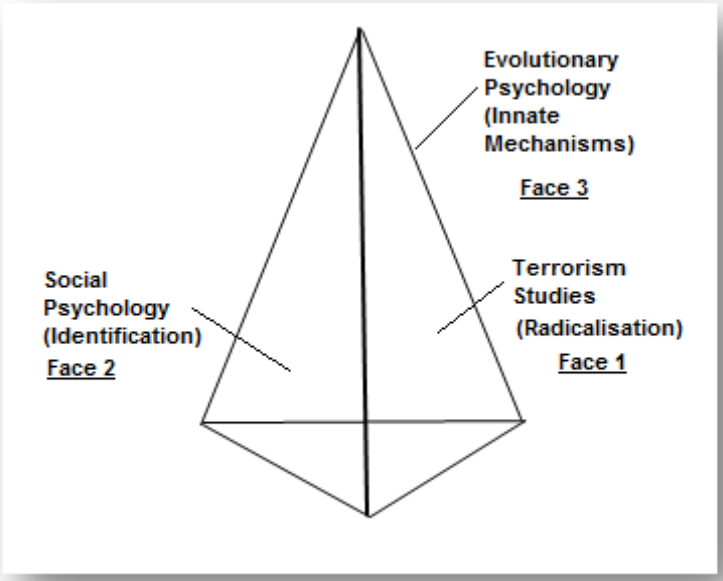
Lethal Mind-sets

The thesis makes theoretical contributions by integrating social and evolutionary psychological theory, and applying it to research on terrorism and radicalisation. Each of these features (social psychology, evolutionary psychology, terrorism studies) of the project can be depicted as a three dimensional, three-sided pyramid (Figure 1). Each approach (or face of the pyramid) supports the other to shed light on certain features of radicalisation, in order to explain why individuals support, engage with, and/or participate in terrorism. The model is represented pictorially by a pyramid in keeping with a number of terrorism scholars who describe the process of radicalisation in terms of a triangle, or a staircase, where fewer individuals, and particular opportunities and decisions, travel upwards at each stage (Moghaddam 2005b; McCauley & Moskalenko 2008).

One side of the pyramid (Face 3, Figure 1) depicts psychological mechanisms inherent in us all. These inherent psychological mechanisms consist of our evolved tendency to a) want to be members of groups, b) to bias, favour, and protect our ingroups, and, c) to perceive and respond to potential threats to the ingroup, particularly from outgroups. Face 2 of the pyramid (Figure 1) depicts the psychological process of identification. Identification is a normal psychological process that explains, from a social psychological perspective, a) why individuals belong to groups, b) why and how they show bias towards ingroups, and c) ways in which individuals bond with other individuals in the same group. Face 1 of the pyramid (Figure 1) depicts the process of becoming involved in terrorism and the radicalisation process, from the terrorism studies perspective. This includes: a) a pre-radicalisation phase, b) grievances and increasing engagement with extremism, c) small group formation, and eventual

involvement in terrorism (for some individuals). The psychological process and mechanisms investigated here (Face 2 and 3), are attributes of all humans and as such this model may be applied to different types of intergroup conflicts (war, genocide, xenophobia), as well as different terrorist groups (Face 1, Figure 1).

Figure 1 Lethal Mind-set Model



The layout of the thesis follows the sides of the pyramid in the sense that Chapter 2 reviews relevant literature on terrorism and radicalisation. Theoretical insight into the process of radicalisation is sparse and key authors note that although "we might aspire to developing a *scientific* study of terrorist behaviour, exploration (let alone *description*) might be a more noble and realistic achievement than true explanation at this point" (Horgan 2009b, p.xxii). In part this is due to a lack of available data, but is also because of a lack of patterns and the inability to profile terrorist behaviour. Terrorists, and terrorist behaviour vary widely. Nevertheless, there are somewhat common features to many terrorist groups, and these are presented in Chapter 2. In

keeping with Horgan's message, much of the literature reviewed in Chapter 2 is relatively descriptive, although some pieces offer theoretical insight (McCauley & Moskalenko 2011; Silke 2008; Horgan 2005; Sageman 2004).

Chapter 3 argues that the process of identification, which is an important feature of radicalisation, can be usefully considered from the perspective of social psychology, in particular, from social identity theories. It is argued in Chapter 3 that variation in the way that identification processes are pursued and experienced, may explain variation in support, engagement with, and participation in terrorism. Identification with a terrorist group may lead individuals to experience oneness with an ingroup to the extent that boundaries are porous (Swann et al. 2009). The boundaries between 'I' and 'We' become permeable. Perceptions of atrocities experienced by 'We' may be experienced as if 'I' was the one experiencing it.

Chapter 4 draws insights drawn from the evolutionary psychology by investigating our evolved tendency to bias towards ingroups; parochial altruism. As a highly social species, group living and cooperation within the group was vital to our ancestors' survival. Groups provided, and still provide, a number of benefits as well as a number of costs, to the individuals within them (Alexander 1987). Threats to a group's survival may have come from the harsh ancestral environment, and would have included threats from other human groups. Evolved psychological mechanisms such as parochial altruism, would have helped our ancestors to survive and prosper during a time in which conflict between groups was lethal and frequent (Bernhard et al. 2006). Such mechanisms helped our ancestors to recognise and adhere to group boundaries. Triggered in certain intergroup contexts (an outgroup's presence may be enough), they guide behaviour towards biasing the ingroup and biasing against the outgroup in some way (McDonald et al. 2012). Parochial altruistic responses may vary from withholding benefits from outgroup members (but providing them to ingroup members) to avoid exploitation, to overt hostility, to defend and deter attacks or resource encroachment.

Parochial altruism is a relatively new concept and is therefore relatively under investigated. Chapter 5 therefore empirically investigates what conditions trigger parochial altruistic attitudes and behaviours, and what variation influences those attitudes and behaviours. Given the nature of the concept (it is a subconscious mechanism that influences thoughts and behaviours in individuals), it is investigated utilising implicit (sub-conscious) and behaviour measures. The results of the experiment are presented in Chapter 6. The overall findings indicated that parochial altruistic attitudes varied across individuals, and were stronger for minority group members than majority (ethnic and religious). Behavioural bias towards the ingroup was associated with parochial altruistic attitudes. Males and minority group members were more likely to display coalition outgroup hostility (that is, incurring a cost to the ingroup to aggress against the outgroup). Those displaying higher levels of social dominance orientation (the belief that some groups are superior), and who perceived contexts of threat, were more likely to behave in terms of extreme parochial altruism (i.e. self-sacrificing to express outgroup hostility, to benefit the ingroup).

The core findings from each chapter are integrated and the Lethal Mind-set model discussed in Chapter 7. Although the model does not address all aspects of radicalisation, certain features may be useful. Interpretations of terrorist grievances as having some evolutionarily relevant root that may be associated with particular behavioural outcomes might be useful when considering different terrorist groups (which vary greatly in many ways, including grievances). Using social identity to theorise the pre-radicalisation phase may be useful for explaining why most people do not become involved in terrorism, and may also shed light on the path of radicalisation. Importantly, the insights garnered from social identity and parochial altruism provide some potentially useful implications for inhibiting terrorism and radicalisation. Despite these potential contributions, there are many limitations that are theoretical, and methodological. Further research may improve on some of these limitations, and an important additional contribution of this project is that it opens up many more potential avenues for further investigation. Implications and ideas for future research are presented in Chapter 7.

Lethal mind-sets builds on existing insights into terrorism and radicalisation by integrating social and evolutionary psychological theory and empirical methods. It explains identification processes, and roots core features of terrorism and radicalisation in normal psychological mechanisms in an effort to explain why and how these features drive some towards support, engagement, and participation in terrorism. Such a model presents a coherent framework from which to view existing knowledge and understanding about terrorism and radicalisation. This moves beyond existing approaches, which either do not attempt to provide theoretical basis (such as Horgan, 2009b), or utilise different approaches to understand radicalisation and terrorism, but do not offer a coherent framework (McCauley & Moskalenko , 2011).

2. The Causes of Terrorism and the Process of Radicalisation

Introduction

The goal of this thesis is to contribute to understanding why people become involved in terrorism. It proposes and investigates possible psychological mechanisms that may underlie the process of radicalisation. The goal of this chapter is to review some of the most relevant literature on the causes of becoming involved in terrorism, and what the process of radicalisation entails. The literature is selected on the basis of the prominence of the authors in the field, and where possible, those who provide insight into the topic with theory and/or new data. This somewhat narrows the scope of possible literature to review. Where possible, features from the lives of the 7/7 bombers and Lee Rigby killers, Adebolajo and Adebowale will be presented to illustrate the insights generated by the literature under review.

A great deal has been published on the topic of terrorism, particularly since the 9/11 attacks, but it is of varying quality and most often in the form of literature reviews (Silke 2001). There is also a distinct lack of theory presented. Indeed, notable scholars (such as John Horgan, a well-established terrorism expert) suggest that exploration and description rather than explanation and theory best characterises the field of terrorist studies (Horgan 2009b). Perhaps even more problematic is the lack of data and the overreliance on: anecdotal 'evidence', small case studies, and secondary, open source data (e.g. archives, media, court transcripts, biographies, autobiographies), and importantly, an overreliance on literature review methods (Silke 2008). Many articles promote new research agendas, rather than presenting and analysing data (Crenshaw 2000; Taylor & Horgan 2006; Moghaddam 2005b). Efforts are afoot to pursue new types of data collection to investigate terrorism, including the use of non-terrorist individuals, and experimental paradigms (Ginges & Atran 2009; Atran 2003; Ginges

et al. 2011; Arce et al. 2011). However, the issue of lack of access to terrorist individuals and groups remains. Access would undoubtedly add richness to any analysis, as has been shown in books by Max Taylor, and John Horgan (Taylor & Quayle 1994; Horgan 2009b). But so too would comparison between terrorist individuals and terrorist groups and non-terrorists.

Limitations and Caveats

There are therefore several limitations of this chapter that should be noted at the outset. The literature reviewed here, despite being selected on the basis of the quality of the scholars and their research, is still limited in important ways. In addition to the problems of a lack of data and theory, there are issues of definition. An underlying and somewhat implicit limitation of much of the literature reviewed is the exceptionalisation of terrorists, and the emphasis on increasing absorption of extremist ideology in the radicalisation process. To a degree this is to be expected because terrorism is a behavioural act and is very rare. It is also an act that would be in our best interests to prevent from occurring. However, the problems associated with defining terrorism (Chapter 1), and the purpose of the research – or more specifically, state centricism (i.e. terrorism as a crime to assist policy-making decisions etc.), influences the assumptions that are made about the nature of terrorism, terrorists, and radicalisation, which may not be helpful in trying to understand the process of radicalisation (Jackson et al. 2007).

When ideology is considered to be a main feature of radicalisation, as it is by Horgan, the process of radicalisation becomes an unnecessary feature of terrorist involvement (Horgan 2009b). This is because according to Horgan, radicalisation is *not* a pre-requisite for involvement in terrorism (Horgan 2009b). Whilst radicalisation may not be a prerequisite in certain cases (i.e. where there is a history of violence), this evaluation is partly borne out by the assumption that only who commit acts of terrorism, can be terrorists (Taylor 2010), despite similar acts being labelled in

different ways for different groups, by different groups. This places defining terrorism, and ideology in a crucial position that distinguishes those who would be exposed to ideology and become terrorists, from those who are exposed to ideology but do not become terrorists, and everyone else who is not exposed to ideology, who may or may not become terrorists, depending on how their behaviour is labelled. The place of radicalisation in this mix becomes rather obscured by definitional conundrums centred on ideological extremism for radicalisation, and acts of violence for terrorism.

Such an approach exceptionalises on the basis of exposure to ideology and involvement in terrorism. Whilst this may be helpful for policing and policy-making, it is not useful for understanding why people may become radicalised. It may even hinder such understanding. Such an approach also ignores the fact that any individual, from any group, can be radicalised (Reicher et al. 2008). Individuals are *not* either terrorists, or not. Rather, becoming engaged and involved in terrorism is a process (e.g. Taylor & Horgan 2006).

This chapter reviews literature pertaining to the causes of terrorism and the process of radicalisation. These two areas are interlinked but address slightly different issues. The causes of terrorism are often considered in terms of micro (or individual level) explanations, and macro (situational, social, political, economic, cultural) explanations. Socio-psychological explanations seek to bring these two levels together. Political scientists and sociologists tend to be the authors of this type of literature. These will be reviewed and discussed before moving on to outline the radicalisation process.

The main contributors in this field tend to be psychologists who utilise this background in their research into terrorism and radicalisation (e.g. Horgan 2008; Taylor & Horgan 2006; Silke 2008; Moghaddam 2005a; McCauley & Moskalenko 2008). Radicalisation, although contested as a concept by these authors is considered a largely psychological process, which benefits from the insights of social and organisational

psychology (Silke 2008). These authors tend to have grounding in social and organisational psychology, often with forensic/criminal psychology and criminology influences. Methodologies in terrorism studies are typically limited by difficulties in accessing terrorist individuals, although some authors, such as Horgan, and Taylor have been able to conduct interviews with terrorists providing much needed data to a field that otherwise typically relies heavily on open sources such as newspaper reports, court reports, and autobiographies (Silke 2008; Taylor & Quayle 1994; Horgan 2009a; Horgan 2009b).

Radicalisation is not a linear process, and nor are all factors likely to be experienced by all individuals (Horgan 2008). It is very much related to individual variation. Nevertheless, the core features tend to include: grievances; perceptions of conflict; socialisation and indoctrination; categorical worldview; perception that violence is just, moral, and urgent; pull factors and rewards of terrorism; and the impetus for revenge. There are several aspects of the radicalisation literature that are problematic and under-developed.

Torn identity is an often-cited risk factor associated with terrorism, but it is rarely considered at depth. The notion of identification with the Muslim Umma is critical to radicalisation, but under-developed. Conditions that underlie terrorist grievances have not been investigated, which possibly enhances the perception of differences across terrorist grievances and therefore terrorist groups. Often these approaches seek out differences between terrorists and non-terrorists, rather than similarities, which inhibits the capacity to understand radicalisation and terrorism involvement in terms of normal psychological processes and mechanisms (although there are some exceptions, McCauley & Moskalenko 2011). In part this is due to definitional issues and state-centricism. However, such an approach has implications for the ability to provide explanations of why most people do not participate in terrorism, which generally hinge on the *absence* of features associated with involvement.

Micro Explanations of Terrorism

Psychopathologising terrorists is the common reaction to terrorist events. The terrorist is viewed as an individual outside of the (social, political, cultural, and historical) context in which terrorism has occurred, and is considered in terms of deviancy. Such deviancy has been tied to the terrorist individual being, amongst other things, irrational, narcissistic, having an authoritarian personality, psychopathic, sociopathic (e.g. Silke 1998; Schmid & Jongman 1988). The violence of terrorism distracts from the underlying causes so that the focus is on the action - the bloodshed – and questions about the mental stability of the individuals perpetrating the violence (Juergensmeyer 2000a; Juergensmeyer 2000b). It is difficult to see terrorists in any other way than disturbed with a sadistic penchant for violence and destruction, and this is often the way in which media portray terrorists, and members of the public tend to perceive them (e.g. Post 2009). Even policy makers, police, and political leaders, most notably George W. Bush and Tony Blair, emphasised the madness and 'evil' and 'barbaric' psychology of the individuals behind 9/11 (e.g. Jackson 2005).

Terrorists have been likened to psychopaths or sociopaths, in order to explain their capacity and intent to kill (Cooper 1978; Victoroff 2005). However, as Table 1 below indicates, there are important differences between being a member of an organisation advocating and utilising terrorism, and psycho/sociopaths. When this logic is applied to specific individuals, such as the leader of the 7/7 bombers, Mohammad Sidique Khan, and Michael Adebolajo, neither of these men displayed psychopathic/sociopathic traits despite participating in acts of terrible violence.

Table 1.Terrorists Versus Psychopathy/Sociopathy

Terrorist/Violent Extremist Group	Psychopathic/ Sociopathic traits	Khan and Adebolajo examples
Tightly knit groups	Highly individualistic	Both were members of gangs
Other centred	Self-centric	Both intended to perform jihad abroad
Short/long term ingroup oriented goals	Impulsive	Radicalisation to the point of violence took over ten years
Killing is for the ingroup (defensive, revenge, protection)	Kill to satisfy self	Both killed to avenge Muslim suffering and sacrificed their lives/freedom in the process
Empathetic to suffering ingroup	No empathy	Western foreign policy and suffering of Muslims were key motivations for action

Attempts to profile terrorists and would-be terrorists on the basis of individual traits and psychological deviancy have failed because there is no one size fits all category in which terrorists can be placed; overwhelmingly, it is their normality rather than abnormality that is notable (Horgan 2008; Crenshaw 1981). Silke (1998) notes that some scholars still allude to some kind of psychological difference or abnormality in terrorists (e.g. Post 2009; Post 1990; Wilkinson 1977; Pearlstein, R 1991; Laqeuer 1977). There is no discernible difference between terrorists and non-terrorists in terms of psychology, with the exception perhaps that compared to the general population from which they are drawn, terrorists tend to be *less* mentally ill (Silke 1998; Crenshaw 1981; Horgan 2005). However, a study of jihadists in Europe conducted by Bakker contradicts this with evidence of a higher percentage of mental illness in jihadists than the world population (Bakker 2006). His study does not indicate whether this illness was suffered prior to involvement in terrorism, or during/after, which is important because it may be that the experience of being involved in terrorist groups and/or being incarcerated influence the onset of mental illness.

Nevertheless, assumptions of abnormality in terrorists lack compelling empirical support but may be used to influence public opinion by depoliticising what is a highly political, social, and context-driven event in order to garner support for draconian counter-terrorism policies, and in the case of the War on Terror, the invasion of Iraq

(Jackson, 2005). Others suggest it is 'errors of fundamental attribution' that influence this preference to see terrorists in terms of individual abnormality (Taylor & Quayle 1994; McCauley & Moskalenko 2011; Silke 1998; Atran 2004; Sageman 2008). Fundamental attribution error is the tendency to explain the behaviour of others by emphasising their own personal responsibility whilst ignoring situational constraints, all the while emphasising the situational constraints over personal responsibility when that behaviour is our own (e.g. Jones & Harris 1967). Despite this, some notable scholars allude to psychological difference or abnormality in terrorists (Silke 1998; Post 1990; Wilkinson 1977; Pearlstein 1991; Laqeuer 1977).

There are two important considerations here. There is no evidence of terrorist abnormality, and the micro approach to understanding terrorists is largely reduced to misguided attempts to profile otherwise *ordinary* people. Terrorist groups, especially successful ones, tend to have a support base from which they are able to recruit, evade capture, acquire resources, and which may even enable terrorist attacks to occur (Richardson 2006). It is therefore all the more important to understand what it is that ties individuals who do not participate in terrorist violence, but may help enable it, or support it, to the few individuals who are willing to commit such acts.

Macro Features of Terrorism

Part of the immense difficulty in explaining terrorism is that groups using terrorism are so divergent from one another (Post 2009). Different groups have different types of grievances which will be influenced by the environment that those groups have developed in, and which will similarly influence the type of goals, and therefore the recruits and methods they have access to (Crenshaw 1981). Nationalist terrorist groups are different to religious terrorist groups, and eco-terrorist groups different from them, for example. The only thing seemingly tying these groups together is acts of terrorism. In order to understand why people become involved in terrorism, it is important to

consider the political, historical and cultural contexts in which it arises (Crenshaw 1981; Post 2009).

Threats to the Muslim Groups

Some of the most oft cited grievances of terrorists are Western foreign policy and puppet regimes in Muslim countries they believe to be propped up by Western governments (Bergen & Footer 2008; O'Duffy 2008; Crick 2006; Brighton 2007; Silke 2008; CONTEST 2011; CONTEST 2009; Bakker 2006; Sageman 2004). Failing states are also a potential grievance for Islamic extremists (Wiktorowicz 2005; Sedgwick 2004; Freytag et al. 2011; Precht 2007; Richardson 2006; Silber & Bhatt 2007). The wars in Iraq and Afghanistan, and the perceived encroachment of Western governments (and culture) on Muslim countries (and Muslim culture) are also used to justify, rationalise, garner support for, and motivating involvement in terrorism (Bakker 2006; Harrow 2010; Reinares 2010; Atran 2004; Sageman 2008; Juergensmeyer 2000a). This hostility towards the West has come to signify Islamic extremism and inspired terrorism.

The wars in Afghanistan and Iraq are fast becoming a continuing history of violence that is often mentioned in the same breath as the Christian crusades (Ryan 2007; Richardson 2006; Taylor & Quayle 1994; Dumouchel 2008). A history of violence that spans centuries has therefore been constructed in the minds of extremists, with perceptions of contemporary interactions between Muslim countries and the West being perceived in much the same way – that of threat. Counter-terrorism policies have been problematic in this respect also. After 9/11 and 7/7 many counter-terrorism policies, particularly in the UK (Contest) specifically targeted young Muslim men. They enabled individuals arrested under the terrorism act to be held without charge for up to a month, amongst other issues (Counter-TerrorismAct 2008). The torture of inmates held at Guantanamo Bay and Abu Ghraib has also served to bolster the perception that Muslims are unjustly victimised by Western governments and

countries, and that there is a war against Islam (Atran 2006; Lankford 2009). Oil and sacred sites/lands has been particularly important to those sharing the ideals of Al Qaeda type groups (Useem & Clayton 2009; Ehrlich 2001). They typically believe that Western governments have been obstacles to the return of the greatness of Islam, and are thus oppressive enemies of Islam and Muslims (Post 2009; Githens-Mazer 2008; Juergensmeyer 2000b).

Discrimination and Relative Deprivation

Early counter-terrorism efforts clearly discriminated against Muslims (Thomas 2010). Whilst this may have seemed logical after 9/11 and 7/7 given that Islamic extremist terrorists are Muslim, targeting individuals on the basis of their Muslim group membership is deeply problematic. Such individuals are discriminated against, and discrimination is also an important factor influencing involvement in terrorism (Piazza 2011; McConnell & Leibold 2001; Loza 2007; Githens-Mazer 2008; Richardson 2006; Sageman 2004; Sageman 2008; Horgan 2008; Silke 2008; Borum 2010; Silber & Bhatt 2007; Bakker 2006).

There are features linked to discrimination that are utilised to good effect by terrorist groups looking to radicalise them. Although Muslims in the UK, and everywhere for that matter, comprise a diverse range of ethnicities, and nationalities, there are some broad generalisations that can be made. Relative deprivation for Muslims may be an issue for example, since this group in the UK has, on the whole, lower educational attainment, and higher levels of poverty and youth unemployment than that of other minority groups in the UK (Mirza et al. 2007). Neither the 7/7 bombers nor the Lee Rigby killers were poverty stricken or uneducated, although the 7/7 bombers lived in a deprived area of Leeds (Dailymail 2005). Adebolajo and Adebowale were both university students and Adebolajo's family were middle class owning a nice house in the country (Milmo & Duggan 2013). Although none of these men could claim to be poverty stricken, or uneducated, they did belong to a group that is relatively deprived in relation to other groups.

Poverty and lack of education are factors that have been associated with the emergence of terrorism. These are often used by governments to explain away terrorism as a product of poverty and ignorance, so that simply addressing these features will inhibit it (Krueger & Maleckova 2009; Krueger 2008; Richardson 2006; Sageman 2008; Piazza 2011; Hudson 1999). The relationship between poverty, education, and terrorism is, however, complicated and context dependent. Many terrorists are better educated, and wealthier than similar non-terrorists, and this is true for terrorists from Palestine to 'home-grown' Al Qaeda-inspired groups alike (Krueger & Maleckova 2009; Krueger 2008; Sageman 2004). Leaders and lower ranking members of Al Qaeda-type groups do not differ in terms of social status, wealth and educational attainment, to the same extent as other terrorist groups (i.e. revolutionary groups), which illustrates the importance of context in terrorism studies (Sageman 2004). However, given that deprivation is relative, the perception of deprivation – of have and have not – may be enhanced by modernisation and globalisation, and all the technological capacity for physical social mobility in terms of transportation this facilitates (Turk 2004; Loza 2007; Lia & Skjølberg 2000; Crenshaw 1981; Richardson 2006; Dumouchel 2008).

Despite the lack of any direct causal relationship found between poverty and terrorism, more recent research has demonstrated that there is a link between poverty and terrorism when it is tied to minority group discrimination (Piazza 2011; Freytag et al. 2011). Piazza found that economic inequality afflicting a minority group is linked to increased risk of a country experiencing domestic terrorist attacks. The socio-economic status of many Muslims in the UK is considered deprived, relative to other minority groups, and of course, the majority (Mirza et al. 2007; Bakker 2006; Precht 2007). Discrimination on the basis of minority group membership, whether economically or socially can be very detrimental to individuals, possibly reinforcing social exclusion and a sense of otherness (e.g. Precht 2007). This has the effect of alienating individuals, and possibly entire groups, from the mainstream, fostering distrust of the state and institutions (Piazza 2011).

Distance from Society

The relatively large number of young Muslim men in prison is perhaps suggestive of this somewhat fraught relationship with the state and its institutions (Mirza et al. 2007). It is interesting that there are many cases of segregation and ghetto-isation which might also enhance feelings of alienation from the wider society and politics (Mirza et al. 2007; Piazza 2011; Brighton 2007). Feelings of isolation and displacement may be profound not only for recent immigrants (whether they arrive in the UK to study or work), but may also affect second and third generation British Muslims who experience cultural uncertainty in the event that they become torn between the culture of their family, and the British/Western culture in which they were born and live (Bakker 2006; Sageman 2008; Silke 2008). Recruiters tend to play on this torn identity to garner support and followers in the young people they seek to radicalise (Sageman 2004; Sageman 2008). The 7/7 bombers and Lee Rigby killers experienced alienation and segregation as minority members away from wider British society in the form of the deprived areas they lived, their minority status (Malik 2013). Importantly, these men were also alienated from their families (Malik 2007; Leppard et al. 2013; Mendick & Ensor 2013).

Role of Religion

Tied to the issue of culture is religion. Islam is no more or less violent than any other religion, and like other religions, there are many different interpretations, and different factions (although some might disagree, Huntington 1996; Bale 2013). Indeed, Samuel Huntington argued that the *incompatible* nature of particular cultures, and cultural identities - particularly Islam, rather than economic and social disparity, ideology and politics (e.g. communism), are the major cause of conflicts (Huntington 1993; Huntington 1996). Many researchers point to a religious belief hypothesis which suggests that it is the adherence to a particularly violent ideology and particular interpretations of Islam that causes people to become Islamist terrorists (e.g.

Juergensmeyer, 2000; Richardson, 2006; Sageman, 2004; Thayer, 2008). Islamic extremists and terrorists adhere to a very strict and specific version of Islam that advocates and justifies defensive jihad that is interpreted as a necessary reaction to, and even obligation for Muslim in the (perceived) war against Islam being fought by the West.

Religion is important because it provides followers with an ideology, a purpose. Specifically it provides an interpretation of the world and the way followers should behave in it. The notion of jihad, which, according to extremist Islamism is as much about defence of the Muslim Umma as it is about living a life devoid of evil, justifies violence towards those who are perceived to threaten Muslims (Sageman 2008; CONTEST 2009). Ideology serves to provide followers with clear rules about how to live one's life, guiding and controlling behaviour (Dalgaard-Nielsen 2010; Borum 2011). The Qur'an sets out an extensive set of rules governing politics, society, economic, and individual behaviour. Islamist ideology promotes the notion that Islam must be purified by strict adherence to the Qur'an (Wiktorowicz 2005).

Application of the Qur'an in a literal and pure sense is not straight-forward in contemporary times, and a good reading of the current situation in conjunction with the Sharia (Islamic Law) is necessary (Wiktorowicz 2003). Although there is variation in beliefs and interpretations with regards to the use of violence (amongst other things), jihadists believe that it is acceptable to use violence to fight against the West (primarily the US and allies), and in attempts to establish the Caliphate state (Cozzens 2008; Connor 2005; Bhatt 2010; Torres et al. 2006; Bakker 2006; Quiggin 2009; Precht 2007; Atran 2003). For some, this indicates either a misreading of the situation, or the way in which the individuals perceive and understand the situation have altered possibly via radicalisation (Wiktorowicz 2005).

Whilst religious terrorism appears to be more violent than non-religious terrorism, it would be erroneous to assume that it is without political motivations and goals

(Juergensmeyer 2000a). Extremist Islamist ideology and terrorism is as much political as religious – more so in fact (Sageman 2008). Religion acts to frame and justify events, as well as to provide a way in which people can relate to and identify with one another irrespective of boundaries (linguistic, national, ethnic) (Richardson 2006; Wiktorowicz 2003; Precht 2007). Religion has the effect of boosting the conflict into the cosmic realm where the struggle is between good and evil (Juergensmeyer 2000b; Johnson 2009; Johnson & Reeve 2013). It is therefore associated with higher levels of commitment and internal cooperation including sacrifice from followers, and higher numbers of casualties in the event of an attack (e.g. Richardson 2006). Religion thus may be a causal factor of terrorism, but it is less so because of religious belief.

Many individuals who become terrorists know very little about the religion they believe to be acting on behalf of (e.g. Neumann 2008a). They may follow particular interpretations that are not followed by the wider group. This was indeed the case for the 7/7 bombers and the Lee Rigby killers (Leppard et al. 2013; Malik 2007). None of these individuals had much grounding or knowledge of Islam pre-radicalisation. Indeed, three of the men were converts from Christianity. What they all had in common was an attraction to Wahhabist Islamism and an interest in the teachings of al Muhajiroun.[8] Whilst religion may be good for framing events in a certain way and justifying violence, it seems to be most effective at promoting identification and bonds between followers (Atran 2006; Sosis & Alcorta 2003; Sosis 2004). The ideology of Islamism and al Muhajiroun is especially attentive to the notion of the Muslim Umma, and the issue of torn identity affecting many young Western Muslims (Connor 2005; Sageman 2008).

Whilst much credence is given to the religious belief hypothesis, others suggests that it may be the coalitional aspect of [some, particularly strict] religious *groups* that actually facilitates this move towards, and justification of, violence (Ginges & Hansen 2010; Ginges et al. 2011; Ginges et al. 2009). Collective rituals performed in small

[8] UK based transnational Islamist organisation with links to terrorism.

groups (religious and coalitional) may act to cement members together to form a tightly knit, emotionally bonded group (Ginges et al. 2009; Sageman 2004; Atran 2006; Sosis & Alcorta 2003; Sosis 2004; Orbell & Morikawa 2009). Individuals can be sure of the loyalty and commitment of others (and the display of their own loyalty and commitment) through the presentation of costly rituals (or signals). These are behaviours that incur costs on each member but that they are willing to bear on the *basis* of the strength of their commitment to the faith, and to other members of the group. This in turn fosters ingroup cohesion, and cooperation. For Atran (2003) these tightly knit, emotionally bonded groups operate under a sense of "fictive kin", which in combination with indoctrination (by way of certain religious/political perspectives) and training, result in a coalition willing to sacrifice themselves on behalf of the other members of their fictive kin brotherhood, and the larger constituents (or family) to which they claim to be acting.

Summary

Micro level explanations typically see the terrorist as abnormal in some way, which may be due to fundamental attribution error, the problem of defining the term, or even attempts to garner support for draconian counter-terrorism policies. Profiling terrorists is implausible, because their overwhelming trait is normality (Horgan 2013). The micro approach does not explain why people become involved in terrorism and, due to its emphasis of abnormality, it cannot tell us why people may support groups committing terrorism. Whilst the micro approach exceptionalises terrorists, the macro approach fails to distinguish why, on the basis of these external conditions (political, social, economic, religious), most people do *not* become terrorists, or terrorist supporters.

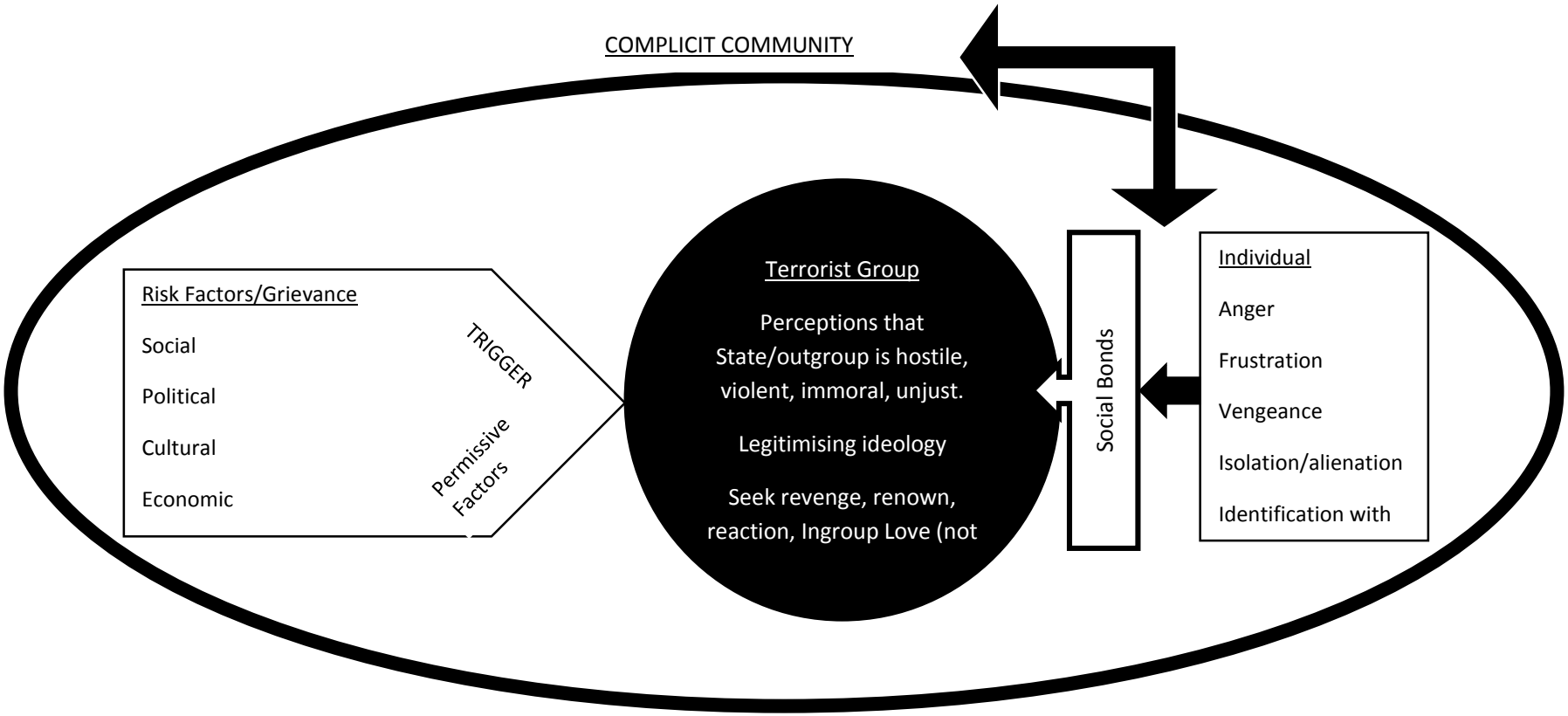
Despite the potential variety in macro features of terrorism, it seems clear that the underlying similarity is some kind of imbalance of power between one group (in most cases, the state) and another (the constituents of the terrorist group). Thus, it might be

suggested that there are certain conditions underlying terrorist grievances that are similar across groups. The content of these grievances may vary but the conditions may provide useful insight into the way in which individuals perceive grievances. The lack of any attempt to investigate grievances in this way is a limitation of these approaches which is not surprising given the largely sociological/political approach taken. Perceptions after all speak of psychology. Nevertheless, perceptions seem to link the individual to the group, and this is an important consideration for those offering psycho-sociological explanations of terrorism.

Psycho-Sociological Explanations of Terrorism

Figure 2 presents aspects of the socio-psychological explanations of terrorism developed by Crenshaw (1981), Sageman,(2008; 2004) and Richardson (2006). These explanations bring together macro level explanations, features of terrorist organisations, also offering insight into some of the psychological variables (emotions particularly) that are seemingly important in becoming involved in terrorism. Terrorism is considered a rational and strategic action used in vengeance, but also to provoke harsh reactions to express grievances, and to garner public support.

Figure 2 Integrated Theory of the Causes of Terrorism



Martha Crenshaw is a political psychologist who is very well respected in the field of terrorism studies. Her seminal paper (Crenshaw 1981) on the causes of terrorism presents a set of post-French Revolution cases of terrorism (e.g. Narodnaya Volya) to illustrate her theory. One of the strengths of Crenshaw's approach is that, although not testing hypotheses, she draws her approach from a variety of different terrorist groups, indicating some generalizability of her framework. A limitation is that she did not test her theory with these case studies (although she acknowledges this). Preconditions "set the stage for terrorism" (social, economic, political grievances experienced by a minority), and permissive factors (increased mobility, communication, and technological capabilities) influence the occurrence of 'terrorism'.

A triggering event (precipitation) precedes an act of terrorism, which can be used by a small extremist faction of a larger social movement, to justify the use of terrorism for redressing its grievances. Terrorism is considered a rational and strategic manner in which to redress grievances (Crenshaw 2000; Crenshaw 1998). The aim is to disrupt and/or discredit the government, and/or instigate harsh counter-reactions to illustrate their grievances. Individual members of this group share the perception that the state is morally corrupt, unjust, and violent, and that violence in return is legitimate and justified. The world is viewed as inherently hostile towards this isolated group, which has the effect of intensifying shared beliefs and perceptions, and commitment to the cause. Crenshaw claims that anger, frustration, and vengeance (for comrades and/or constituency) are emotions that drive the use of terrorism. She further argues that "Terrorists are not necessarily people who seek 'belonging' or personal integration through ideological commitment, but once embarked on the path of terrorism, they desperately need the group and the cause" (Crenshaw 1981, p.393).

Marc Sageman is a sociologist, psychiatrist, a former CIA operative and researcher in terrorism. He developed a database including information on groups, and over 500 members of Al Qaeda affiliated individuals (Sageman 2008). Prior to Sageman's

database, no such source existed for terrorism researchers. Data was all open source from media accounts, court trials and transcripts, notes on testimony, captured documentation, scholarly articles, internet articles, government documents, and biographies (Sageman 2004; Sageman 2008). Along with this database (which is open source to enable peer review), one of the most important findings is that individuals tend to join terrorist groups in small groups, specifying that social bonds precede entry to a terrorist group. Whilst this collection of data is perhaps unparalleled (although others have developed similar techniques, Bakker 2006), it is limited by its open-source nature, and the lack of comparison control groups – which Sageman himself acknowledges (Sageman 2004, p.69).

Sageman's (2004; 2008) analysis generally supports Crenshaw's thesis and adds to it in the following way. Sageman's major finding was that social bonds *precede* and *encourage* ideological commitment, and are the *critical* feature in becoming a 'terrorist'. Sageman also acknowledges the impact of social, economic, and political grievances, (including perceptions of Western foreign policy) as risk factors associated with 'terrorism'. He also suggests that relative deprivation, alienation, and discrimination suffered by Muslim minorities in Western countries, may be a key factor in motivating such individuals to become more involved in, and learn about, religion. Mosques provide sanctuary, as well as communal worship, and are a place where Muslims isolated from wider society, and away from family and friends (due to relocation for example) can find, and be with, similar others. This suggests that belonging to a group is important to those who become involved in Islamic extremist terrorism which contradicts Crenshaw.

Social affiliations with groups claiming to be defensive jihadist occur via friendships (kinship, and/or discipleship). These social bonds provide members with mutual emotional and social support, encouraging and intensifying beliefs and (the adoption of a new) faith (ensconced in jihadist ideology), progressing to an acceptance of this ideology. A common identity is formed, and values, norms, lifestyles and perceptions of the world, become shared interpretations *and* activities. For a group such as this to

be of any real threat, there must be some external link, and a formal acceptance, to a larger jihadist movement. Interestingly, Sageman suggests that Al Qaeda-type inspired 'terrorism' is the result of ingroup love, as opposed to outgroup hatred.

Louise Richardson's (2006) comprehensive book *What Terrorists Want* is built around media accounts, scholarly literature, and interviews, and some insights she and her colleagues gleaned from secret conferences with members of a number of ethno-nationalist terrorist groups. Richardson is a political scientist and she too builds on the work of Crenshaw (1981), suggesting that perceived social, political, and economic grievances, *and* cultural issues, are risk factors associated with the susceptibility of a given society's attraction to terrorist groups. Richardson notes that high levels of youth unemployment (and underemployment), and, low educational attainment are also associated with terrorism. All but Hussein and Adebowale, of the 7/7 bombers and Lee Rigby killers were allegedly bright and academic, and all were young. Khan was underemployed and the others were studying.

There is a complex relationship between these elements, and the actions, beliefs, and political aspirations of a comparatively small group that consists of the founders, leadership cadre, and other members of a 'terrorist' group. Such a group is dependent on a "complicit society", or enabling group, for its survival, one that is sympathetic, if not to its actions, then to its cause (Richardson, 2006: 93). The 'terrorist' group supplies a legitimising ideology that makes sense of the perceived injustices faced by the group and its constituents, legitimises violence, and can recruit, and mobilise its members to action. Like Sageman, Richardson promotes the idea that this group sees itself as altruistic defenders of Islam and Muslims worldwide. Revenge is the key emotion driving terrorism, and these groups seek renown (fame, large audiences), and reaction (to terrorism by states/governments). Individuals are radicalised by identifying with the plight of Muslims around the world; they are disaffected with the world around them and want it to change.

The definition of terrorism and who is a terrorist differs across these scholars. This is not surprising since the term itself is widely contested and debated (Schmid & Jongman 1988). Importantly, although acknowledging that any group, including states, can commit terrorism, they all specify non-state actors. This is a common approach to trying to explain why terrorism occurs, and explaining the radicalisation process. The reason often used is summarised nicely by Richardson: "if we want to have analytical clarity in understanding behaviour of terrorist groups we must understand them as sub-state actors rather than states" (2006, p.22). This analytical clarity comes at a cost however, because it narrows who can be defined as a terrorist. This also has the effect of implicitly exceptionalising terrorists if not on the basis of psychology, then on the basis of the groups they belong to (terrorist groups, rather than armed forces, for instance). This is born out in the fact that most research into terrorism and radicalisation now occurs at the level of the group, including these three scholars.

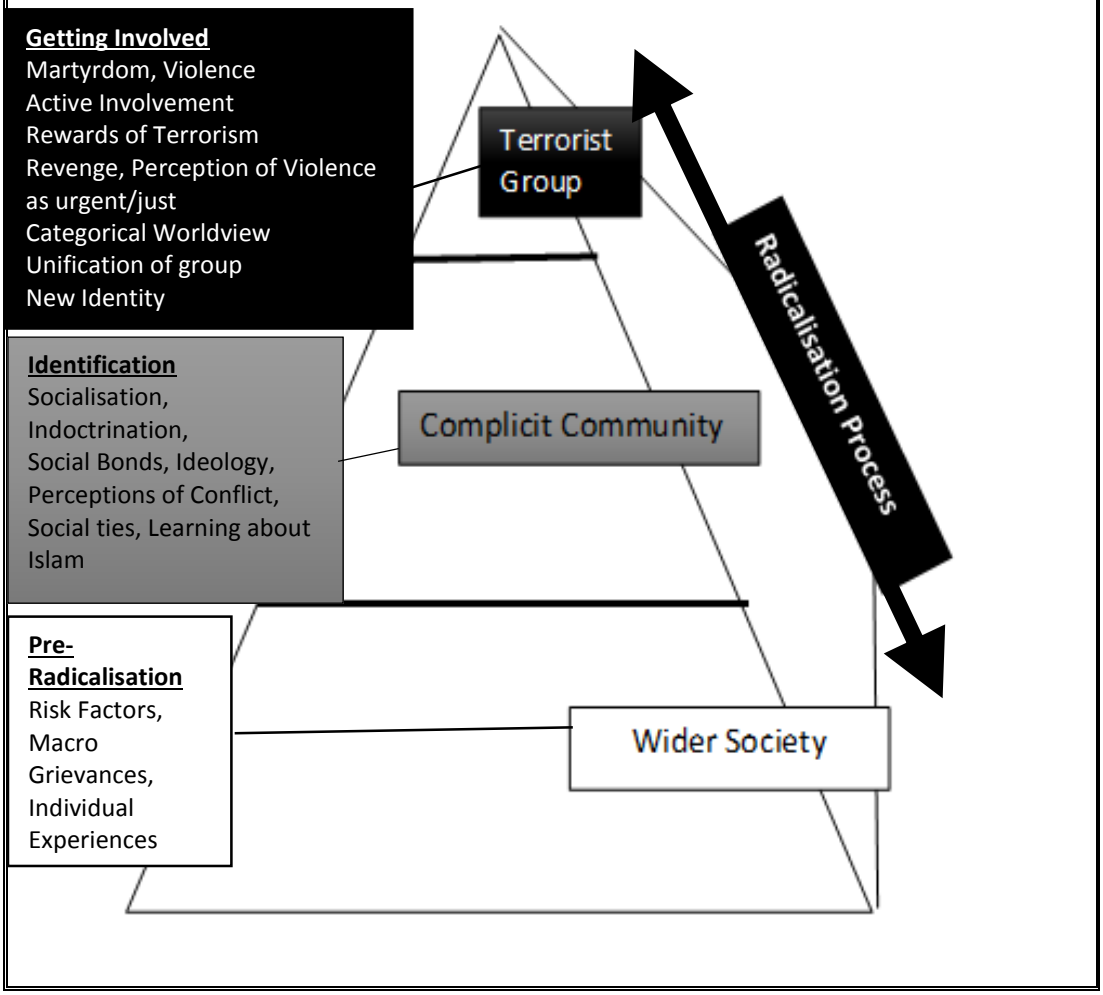
The theories offer insight into some of the core features and events that set some individuals on the path towards terrorism. One is disaffected for various reasons, joins a group of like-minded others with whom they come to identify with and perceive grievances in a similar way. Their isolation enhances their beliefs, and their ideology, in conjunction with the perception that the state is immoral, hostile, and unjust – possibly due to harsh punishment meted out to fellow comrades – prompts the drive for vengeance and violence. However, they are not able to explain why most people within a complicit community do not become terrorists, despite perhaps suffering the same inequality. Such theories struggle to explain how perceptions of events prior to becoming a member of a terrorist group might influence the progression towards or away from involvement in groups advocating and/or using terrorism. Nevertheless, unlike either micro or macro explanations of terrorism, these approaches indicate that involvement in terrorism is not a linear cause and effect phenomenon, but a process (Taylor & Horgan 2006). An important feature of that process is radicalisation.

The Radicalisation Process

Research describing and explaining radicalisation sheds light on the process of becoming engaged in terrorist attitudes, beliefs, and behaviour. Figure 3 is a more detailed representation of Face 1 of the pyramid model mentioned in Chapter 1 and provides an outline of the core features of radicalisation (Horgan 2008; Taylor & Horgan 2006; Silke 2008; Silber & Bhatt 2007; McCauley & Moskalenko 2008; Moghaddam 2005b). The radicalisation process is split into three sections in this chapter: Pre-radicalisation, Identification, and Getting Involved. These sections do not represent an ordered process, but features of radicalisation are presented in this way to provide conceptual clarity. Each section is explained in more detail. The overall process is not linear, nor is each aspect required, or experienced, in the same way for different individuals (Horgan 2008; Horgan 2009b; Precht 2007). Being radicalised does not necessarily mean that an individual will become a terrorist, although they may be actively involved in other ways that are ultimately useful or enabling for others to commit acts of terrorism (Taylor & Horgan 2006; Horgan 2008; Horgan 2012).

Before reviewing the literature on radicalisation, it is necessary to briefly discuss some features of the works presented here. As mentioned earlier in the chapter, terrorism suffers a dearth of data, and a dearth of theory (Silke 2001; Jackson et al. 2007). This has implications for the way in which research is conducted and evaluated. Most of the literature reviewed is by scholars with a background in psychology. This should not be surprising given that radicalisation is considered a largely social and psychological phenomenon (McCauley & Moskalenko 2011; Horgan 2009b).

Figure 3 Face 1: The Process of Radicalisation



John Horgan is a renowned terrorism expert and forensic psychologist, with numerous books and articles, including interviews with terrorists (e.g. Horgan 2005; Horgan 2009b; Horgan 2009a; Horgan 2012; Horgan 2013; Horgan 2008). He is one of very few individuals who have interviewed terrorists. Max Taylor is a behavioural forensic psychologist and was involved in some of the earliest research into the lives of terrorists using interviews (Taylor & Quayle 1994). He often takes a behaviourist position emphasising behaviours and affordances over attitudes, beliefs, and cognitive influences. Taylor and Horgan have produced important works on terrorism together (Taylor & Horgan 2001; Taylor & Horgan 2006).

Interviewing terrorists whilst useful, is not without limitations and caveats (Sageman 2008; Horgan 2009a). The researcher has to be wary of the level of awareness and honesty an individual claims to have. Memory is fallible, and people often see the past through the lens of the present, interpreting past motivations and behaviours with self-justification. When this is combined with ideological indoctrination and socialisation, interviewing terrorists for the purpose of insight into their own radicalisation becomes problematic even where access is enabled (Horgan n.d.; Horgan 2009a; Horgan 2012). Nevertheless, the data generated by these authors is vital to terrorism research.

Andrew Silke is a criminologist and forensic psychologist with numerous publications on terrorism and terrorist psychology (Silke 2006; e.g. Silke 1998; Silke 2008). Like other scholars of note, he is critical of the lack of rigid, scientific data collection and analysis in the field of terrorism studies (Silke 2001). Fathali Moghadddam is also a psychologist and he developed the staircase to terrorism metaphor (Moghaddam 2005b). Clark McCauley and Sophia Moskalenko are social psychologists and their paper and book present twelve proposed mechanisms of radicalisation. They specifically point out that there are numerous paths and different mechanisms involved in the process of radicalisation, and that these interact with one another. They include some well-known psychological theories in their book to explain the twelve mechanisms, which they illustrate with case study material (McCauley & Moskalenko 2011; McCauley & Moskalenko 2008).

The literature reviewed here includes articles and books that are themselves, literature reviews (e.g. Silke 2008). Most offer anecdotes from history, and terrorist groups to illustrate points (McCauley & Moskalenko 2011; Silke 2006; Moghaddam 2005b). Some offer theoretical bases via popular psychological theories (McCauley & Moskalenko 2011; Silke 2008; Taylor & Quayle 1994; Taylor & Horgan 2001; Taylor 2010; Taylor & Horgan 2006; Crenshaw 2000; Horgan 2008; Horgan 2013; Moghaddam 2005b). Many promote new research agendas in the absence of offering new data (Moghaddam 2005b; Crenshaw 1981; Taylor & Horgan 2006). Some use metaphors as frameworks in which different features of radicalisation can be organised

(Moghaddam 2005b; McCauley & Moskalenko 2008). Others use criminology literature and theory to explain the trajectory of terrorism (Taylor & Horgan 2006; LaFree et al. 2009; Silke 2003).

The issue of defining who is a terrorist is a recurrent problem. Some scholars take the view that when investigating terrorists, we should consider what makes a terrorist a terrorist is committing *acts* of terrorism (Taylor 2010). This takes us right back to the problem of defining terrorism, and somewhat implicitly suggests that those who are not terrorists may add very little to our understanding of those who are. This presumably includes those who may be radicalised, which would include those who support terrorism.

This is problematic for a number of reasons. It suggests exceptionalisation of terrorists on the basis of a behaviour that is highly subjective and politically motivated (i.e. the same behaviours can be committed by different groups but not be labelled terrorist). It narrows the scope of who can be investigated (terrorists only). It assumes that extremists and radicalised individuals are no more likely to turn to terrorism than non-extremists or non-radicalised individuals. This seems to suggest that terrorist supporters and those who may engage in behaviour just shy of terrorism (i.e. illegal but non-violent, legal but extremist, subversion) are of little use to understanding why terrorists do what they do. Yet other researchers emphasise the importance of these sets of people (supporters, and passive supporters) for *enabling* terrorism to occur (Richardson 2006; Horgan 2008; Sageman 2008). Indeed, Sageman says that "focusing exclusively on terrorists can never tell us how they are different from those who might have become terrorists but did not" (Sageman 2008, p.20). To disentangle the two as separate entities is not only limiting an already scant pool of data unnecessarily, but it also implicitly excpetionalises terrorist individuals on the basis of behaviour that is ill-defined and subjectively, and politically conceptualised.

Some scholars seem to possess an implicit assumption that terrorism is a crime, which may be useful for addressing responses to terrorism, but potentially hindering our capacity to understand *why* it occurs (Silke 2008; Taylor 2010; Taylor & Horgan 2006). This notion perhaps feeds into the problem of definition, and research conducted for the purpose of addressing particular problems for the state, which has implications for analysis. Terrorism is often considered from a rational choice perspective (Taylor 2010; Crenshaw 1981). Yet others have shown that morality over instrumentality provides the impetus for support for violence in intergroup contexts (Ginges & Atran 2011). This highlights how assumptions can colour the way in which terrorism is investigated and analysed.

Pre-Radicalisation

Pre-radicalisation is not a stage that tends to be explicitly referred to by scholars, although it is acknowledged by government agencies. It is possible that attention to pre-radicalisation by organisations like the FBI, MI5, NYPD, and the Danish Ministry of Justice is based on intentions to be able to predict and inhibit the radicalisation process (Federal Bureau Of Investigation, 2006; Precht, 2007; Silber & Bhatt, 2007; Travis, 2008). The pre-radicalisation stage is not the same across these organisations although each proposes that the individual is influenced by internal and external factors. These factors include: identity crises, personal experiences of discrimination, alienation, marginalisation, underemployment, criminal pasts, dissatisfaction and frustration with the current religious faith, and the demography of the individuals habitat – i.e. isolation and marginalisation of the community (diaspora) (Silber & Bhatt 2007; Precht 2007; Federal Bureau Of Investigation 2006; Travis 2008). Youth and sex are also two features that tend to be important, but overall, these individuals tend to be ordinary and unremarkable (Silber & Bhatt 2007). Terrorists tend to be (but not always) young (below 35 years old), and male (Silke 2008; Silber & Bhatt 2007).

The pre-radicalisation phase "describes an individual's world – his or her pedigree, lifestyle, religion, social status, neighbourhood, and education – just prior to the start of their journey down the path of radicalisation" (Silber & Bhatt 2007, p.24). But it describes many other people's worlds also and is clearly of little use as a tool to distinguish those who go on to become terrorists and those who do not. The notion of a pre-radicalisation phase – particularly in the way that is proposed by government organisations – is potentially problematic because it implies some sort of radicalisation sequence. This notion has been rejected by terrorism scholars (McCauley & Moskalenko 2011; Sageman 2008). It also implies that those individuals to whom risk factors are relevant are in the pre-radicalisation phase. This identifies (and possibly demonises) a very large population as at risk of potentially being radicalised. Although others may perhaps call this the complicit community (e.g. Richardson 2006).

Individual risk factors associated with becoming radicalised include some sort of emotional vulnerability (Horgan 2008). This may entail the desire for revenge, and anger, but may also include feelings of alienation, discrimination, isolation, and displacement. These feelings may come about due to a lack of social ties, perhaps because of immigration for schooling or work, or alienation from the mainstream society as a result of discrimination (McCauley & Moskalenko 2008; Horgan 2008; Silke 2008; Silber & Bhatt 2007).

Discrimination is particularly important because it can isolate entire communities from mainstream society, as well as have negative effects on the lives of discriminated groups. But discrimination on the basis of group membership can obviously occur at a personal level also, and a good example of this might be initial counter-terrorism efforts that engaged in profiling and targeting young Asian-looking men and black men for stop and searches (Mirza et al. 2007). The FBI suggest that individuals who are radicalising may be identified according to their choice to wear traditional Muslim attire, facial hair, and the frequency of their prayer (Federal Bureau Of Investigation 2006). Such policies are highly discriminatory and clearly associate Muslims with terrorism. Experiencing, or knowing someone who has experienced an event such as

this, including other related events, like Islamophobia, or racism, may provide a powerful grievance that is felt at both a personal and group level (Bhatt 2010; Ahmad & Evergeti 2010; Mirza et al. 2007).

The frustration aggression hypothesis, and its cousin, relative deprivation theory are often invoked to explain terrorism on the basis of inequalities and injustice to one group relative to another (e.g. Dollard et al. 1939; Gurr 1970). Involvement in terrorism is the response to political, social, and/or economic disparities that may be objective, but are more likely perceived or relative to other groups, and may also include rising expectations that are not borne out in reality. Muslims in the UK are a significant minority group but have some of the highest levels of unemployment, low educational attainment, imprisonment, low socioeconomic status, and segregation (Silke 2008; Piazza 2011). This group have also experienced increased discrimination since 9/11 including in the form of counter-terrorism policing (Mirza et al. 2007; Sheridan 2006; Kotecha 2013; Thomas 2010). However, although there are over two million Muslims in the UK who may have experienced, or witnessed others experience these inequalities, only a minority become involved in terrorism (Horgan 2008).

Another crucial factor of Islamist-inspired terrorism and radicalisation is that many second and third generation Muslims have a sense of being torn between the culture of their family, and the Western culture they have been raised in, and that they share with their peers (Sageman 2004; Sageman 2008; Richardson 2006; Silber & Bhatt 2007; Moghaddam 2005a). This is perhaps best illustrated by the impression that young British Muslims, more so than any other religious group in the UK, identify themselves primarily by their religion, which transcends national borders (Silke 2008; Hopkins 2011; Mirza et al. 2007). Interestingly, little is said about identity in the pre-radicalisation phase, despite it being relevant to experiencing and perceiving inequality as a group member, and also for experiencing *torn* identity. The notion of torn identity is acknowledged in the core literatures, and typically stems from particular individuals such as Ed Hussian who rejected extremism (e.g. Horgan 2008; Sageman 2008; Hussain 2007). Rather, terrorism research does not tend to invoke social identity until

an individual is already a member of an extremist group (e.g. Travis 2008). However, this may be due to the way in which identity and identification are conceived of. Identification for instance, can occur between the individual and the extremist cause or ideology and the Muslim Umma, and the distinction is not always clear (Silber & Bhatt 2007; Precht 2007; Silke 2008; Sageman 2004; Federal Bureau Of Investigation 2006).

Identification

Identification with ingroup others occurs on the basis of a shared representation of the ingroup identity in terms of norms, values, understandings, expectations, and behaviours (e.g. Reid & Hogg 2005; Brewer, 2001; Halloran & Kashima 2004). Importantly, these features of ingroup identity are expected to be shared and adhered to by others in the ingroup, providing a sense of coherence, trust, cooperation and well-being for group members (Reicher et al. 2008). Religion is clearly a very powerful identity with clear norms, values, rituals etc., that make it fairly clear who is an ingroup member and who is not (Yessldk et al. 2010). This is perhaps best illustrated by the primacy many young British Muslims place on their Muslim identity, relative to their other identities (national and ethnic, for example) (Mirza et al. 2007).

The latter point is important because it seems that young men, especially, suffer for this torn identity or culture, and this aspect of the lives of many British Muslims is exploited by terrorist 'recruiters', or enlisters (Sageman 2004; Atran 2003). Many of those becoming radicalised seek to relieve their sense of isolation by finding and spending time with similar others (Sageman 2004; Silber & Bhatt 2007; Silke 2008; McCauley & Moskalenko 2008). As Muslims, perhaps from abroad, the most obvious place to seek similar others is the Mosque.

Many young British Muslims, particularly those that become radicalised, seek to find out more about their religion, which they do via active social learning, which includes frequenting mosques, but also using the internet to perform research (Sageman 2004; Sageman 2008; Silber & Bhatt 2007; Mirza et al. 2007; Atran 2006). This may lead to frame-alignment where an individual aligns him/herself with the interpretation provided by the group to make sense of the world (e.g. Wiktorowicz 2003). Some have suggested that the internet enables radicalisation to occur without the stringent face-to-face interaction utilised for radicalising global jihadists, and has thus been a vital tool for the spread of extremist Islamism (Sageman 2004; Atran 2006).

The problem for many British Muslims is that they are not able to identify with Muslim elders and clerics, and this was certainly true of Khan (Sageman 2004). Often, the Koran was learned in Arabic by rote, and many young British Muslims have only limited, or no, Arabic language skills (Mirza et al. 2007; Malik 2007). These predominantly young men are seeking information and spiritual guidance but cannot find it in the Islam and culture of their families (who may be unreligious), or the elder mosque leaders, because they do not share the special features of being a westernised, young modern Muslim (Richardson 2006). This may not be the case for all young Muslims, but it is certainly an important finding in terrorism research.

Given the (Arabic) language limitations of many young British Muslims, and the many other vulnerabilities associated with the pre-radicalisation phase, many individuals may be susceptible to extremist ideology (Travis 2008; Horgan 2008; Silke 2008). These factors may lead individuals to research more about their religion, and since the goal of Al Qaeda-type groups to engage as many as possible with their ideology, their search is likely to feature extremist literature and propaganda (Silber & Bhatt 2007). Given that individuals are seeking to learn about Islam, social learning theory might be relevant for explaining involvement in terrorism (Bandura 1973). Terrorism in this case, would occur because individual terrorists observe and imitate a similarly violent model. This may explain the power that martyrs have to inspire sacrifice (Taylor & Quayle 1994). Importantly, social learning may occur through ideology, and

propaganda experienced through internet searches, radical discussion groups and forums, and literature (Sageman 2008). Nevertheless, social learning theory cannot explain why more individuals do not become involved in terrorism.

Recently, the BBC broadcast a live interview with Anjem Choudrey, a notorious Islamic extremist with ties to many of the individual's convicted of perpetrating or attempting to perpetrate terrorist attacks (BBC 2013). His interview was conducted immediately after Lee Rigby was murdered. He was able to express his extremist views freely on prime-time television on a national news programme, and this has since been complained about (Parry 2013; Halliday 2013; Evans & Dominiczak 2013). His message was ultimately that the West threatens the worldwide Umma, and because all Muslims are one, irrespective of nationality, class, race, etc., it is every Muslims' duty to defend Islam and fellow Muslims against this threat. His Pan Islamist ideology is likely to have been received by many individuals without needing to actively search for extremist ideology. Importantly he, and many like him, places on the shoulders of all Muslims, the responsibility of defending wrongs against them. Whether this triggers feelings of personal responsibility in would-be terrorists, or resonates with existing characteristics is unknown, but scholars have noted that terrorists often have a strong sense of personal responsibility (Stern 1995; Horgan 2008; Wiktorowicz 2005). This somewhat contradicts the use of social psychological theories that explain *reduced* personal responsibility in favour of group norms, in committing terrorism (e.g. Borum 2010; Moghaddam 2005b).

Choudrey, and other Islamic extremists represent the Muslim population as innocent victims in one breath, and call for their participation as soldier-like defenders in another; the Muslim ingroup is to be protected (BBC 2013). It is to be protected from what is also represented as a debased, immoral, evil outgroup. This outgroup need not be well defined, because the emphasis is rather on group boundaries that distinguish ingroup members from outgroup members, and is also directed in terms of perceptions of threat (Reicher et al. 2008). Perceptions of threat are tied to grievances, and may be realistic, or relative (material, cultural, social, way of life), and this is important

because identity is not just a way to understand oneself and others, but a way to understand the world (Reicher et al. 2008). It is through identification with the Muslim Umma – an identification that is encouraged by extremist Islamist ideology – that the perception of conflict, or war against Islam, may be developed.

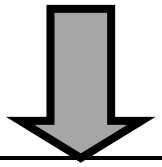
When identification with the Umma and feelings of responsibility are associated with the perception that Muslims are the victims of some threat, those who become radicalised tend to believe that violence is not only acceptable, but just and urgent, and is a moral imperative to right wrongs, to defend, and to deter future acts (Richardson 2006; Sageman 2004; Sageman 2008; Horgan 2008; Silke 2008; Cota-Mckinley et al. 2001). This aspect of radicalisation is associated with frame alignment. The ideology is attractive to the individual and resonates in some way; it makes sense to them and provides a way of understanding the world (Wiktorowicz 2003). Convergence of core principles and ideas (in this case, belonging to the Muslim Umma, which is threatened by the West, and whose goal is to establish an Islamic state) provides individuals with a way to understand the world and to identify themselves (and fellow extremists) as good Muslims, and all others clearly (Neumann 2008a). This feature of radicalisation occurs throughout the entire process, particularly during ideological indoctrination, and in the event of some kind of catalyst or trigger (Horgan 2008; Silke 2008; Sageman 2004). Socialisation into increasingly extremist groups, and indoctrination into extremist ideology *enhances* the notion that violence or terrorism is just and moral and urgent (Table 2), but it is likely that is already present to some degree prior to socialisation and indoctrination (Silke 2008; Horgan 2008; Sageman 2004; Sageman 2008; McCauley & Moskalenko 2008; Silber & Bhatt 2007). Frame alignment is not able to explain this.

Research has shown that indoctrination and socialisation may not even be necessary to enable the perception that violence is an appropriate response. Merely being triggered into thinking about death or the threat of death (mortality salience) is enough for individuals to consider violence warranted, and this is particularly so where the threat is linked to group membership (Pyszczynski et al. 2006). Not only are

individuals more likely to support more extreme acts when primed to think of death, they are also more likely to show willingness to take part in the violence. Justifying violence in response to perceived threat is indicative of revenge, which is certainly a common feature of terrorism rhetoric (Sageman 2004; Sageman 2008). Vengeance, like mortality salience, is associated with increased likelihood of supporting more extreme responses and willingness to participate in those responses, even if it means incurring some sort of cost (e.g. Cota-Mckinley et al. 2001). The perception that violence is justified and moral and that there may be some willingness to be involved is thus not unexpected in the event that an individual has been exposed to some information that deals with threats and deaths of ingroup members.

Table 2. Perceptions of Violence as Just, Moral, Urgent

Group level factors	**Micro level factors**
Socialisation/indoctrination paints violence as necessary, urgent, and just: Adebowale and Adebolajo were possibly indoctrinated through their membership with al Muhajiroun. Hussein and Tanweer were possibly socialised and indoctrinated by Khan.	Violence accepted as just and not immoral (this occurs in most cases, before socialisation and indoctrination but is enhanced by the latter): Adebolajo had participated in a protest calling for the 'right to behead those who insult Islam', and had been calling for people to wage jihad in Syria (Leppard et al. 2013; Soltis 2013).



Outcome
Violence is morally justified and urgent: Both Adebolajo and Khan intended to fight jihad abroad in Somalia and Afghanistan prior to their decision to commit acts of terrorism indicating that the perception of conflict and the necessity of violent response was present before the decision to commit terrorism.

Whether individuals necessarily need to be exposed to extremist propaganda is debateable given that the popular British media is so often full of death and misery,

and certainly depicted many disturbing and often violent aspects of the wars in Iraq and Afghanistan (Mirza et al. 2007). Nevertheless, exposure to extremist propaganda and ideology – with its often very grisly, explicit and biased portrayal of conflicts affecting Muslims across the globe – may act to enhance the perception that violence against the West is just, particularly if there is strong identification with the wider Muslim community (Sageman 2004; Sageman 2008). Merely being exposed to such images and stories, particularly for individuals who identify strongly with Muslims worldwide, may be enough to encourage the belief that there is a very real and significant threat to Islam, and Muslims more generally, and that personal participation in some form of defensive action, which may include violence, is necessary.

But violence is often promoted and justified by extremist ideology (Conner et al. 2007; Wiktorowicz 2005 for more information about Islamist ideology). Ideology serves to provide followers with clear rules about how to live one's life, guiding and controlling behaviour (Dalgaard-Nielsen 2010; Borum 2011). It also promotes depersonalisation and dehumanisation of victims, which further enhances the justification of violence (Della Porta 1992). Although it is more likely that interactions with charismatic individuals whom act as role models, and guide the enlistment of would-be terrorists, promotes this ideology, rather than sole emphasis on radical clerics, and online propaganda (Travis 2008; Horgan 2008; Sosis & Alcorta 2003; Dalgaard-Nielsen 2010; Victoroff 2009). Interest in ideology is characterised by increased involvement in different information seeking avenues that include prayer and study groups and discussions, social events, protests, and independent research, but much of it is done as a group (Wiktorowicz 2003).

Identification with the worldwide Umma is crucial in the process of radicalisation (Horgan 2008). McCauley and Moskalenko suggest "Positive identification means we feel good when the other is safe, prospering, or growing, but we feel bad when the other is in danger, failing, or diminished. Negative identification is an inverse concern for the welfare of another" (McCauley & Moskalenko 2011, p.28). In this case, positive identification occurs towards the Muslim Umma, and negative identification

with the West. But what is less well understood is how or why that identification occurs. Potential disconnect between young, mainly male Muslims who share perceptions of conflict (and possibly justifications of violence), combined with the motivation for active social learning and the seeking out of likeminded others, may lead such individuals towards more extremist ideology, and possibly towards Mosques that are run by more extremist clerics, such as Brixton mosque, and Finsbury Park Mosque in London (Sageman 2008; Silber & Bhatt 2007; Borum 2011). Even where individuals do not travel to new mosques, it is still possible to meet likeminded individuals at mosques and other social gathering points (Sageman 2004; Sageman 2008). Some young British Muslims may feel isolated, not only from the mainstream society because they are Muslim, but also from within their own community. Being highly Westernised, they cannot relate to their elders and because of their attitudes towards violent retribution and perceptions of threat and victimisation, they may form small groups of similarly minded young men (Sageman 2004).

Social ties developed through attending mosques and other gathering places (such as cafes and book stores), may lead to the formation of small groups of like minds (Federal Bureau Of Investigation 2006; Silke 2008; Wiktorowicz 2003; Sageman 2004; Bakker 2006). It is possible that those individuals who share the belief that there is a war against Islam and Muslims, and who consider that violence in defence is justified may be drawn towards one another, thereby facilitating increasing openness to extremism (Horgan 2008). In these small groups, an intense and long period of social interaction and socialisation occurs, and a common identity forms (Moghaddam 2005b; Horgan 2008). These small groups relieve the isolation and provide individuals with a safe haven where they can air their views, and share their experiences and perceptions of the world (Silke 2008; Sageman 2008; Moghaddam 2005b). As their common identity develops and aligns, so too do the norms, values, and perceptions of the group (Horgan 2008; Wiktorowicz 2003; McCauley & Moskalenko 2011).

In a phenomenon known as “extremity” or “risky shift”, individuals within small, tightly bonded groups may begin to adopt the beliefs and attitudes of the more extreme

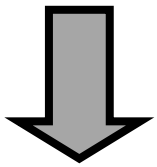
members of the group (Silke 2008; McCauley & Moskalenko 2008). This is especially likely where values are similar and leads to internalisation of the more extreme opinions and beliefs (McCauley & Moskalenko 2008). Others suggest that individuals are more likely to take risks in a group setting (Crenshaw 1986). In terms of the way in which risky shift can be seen in the radicalisation process, individuals give up those behaviours that were perhaps more associated with Western living, such as smoking, drinking, clubbing, girlfriends, gambling, and other non-halal (harem) activities, for more traditionally Islamic pursuits, including a change in dress and appearance, and use of language (Moghaddam 2005b). Silber and Bhatt suggest that this is a form of within group competition that is a potent force multiplier leading to ever more extreme views and behaviours within these small groups (Silber & Bhatt 2007). The FBI suggest that these changes in behaviour can be used as pointers to identify radicalisation in individuals (Federal Bureau Of Investigation 2006). The more extreme the group gets in terms of its shared views and beliefs, and possibly its visible codes of conduct, the more isolated from the community and wider society it becomes (Horgan 2008).

As the small group becomes more closely bound, individuals share an intense bond and identity that is also linked to identification with the Umma, although these theories fail to explain why or how that might be (Sageman 2008; Moghaddam 2005b; McCauley & Moskalenko 2008). The group may come to be ever more extreme via risky shift (Moghaddam 2005b; McCauley & Moskalenko 2008; Horgan 2009b). They may become involved in activities to better or benefit the community, despite being somewhat marginalised from it (Horgan 2008; Silke 2008; Federal Bureau Of Investigation 2006; McCauley & Moskalenko 2011). Mohammad Sidique Khan for example, became involved in the Mullah Boys which was a group that helped (or forced) young Muslims with drug problems back to sobriety (Malik 2007). The world outside has less impact on the group as it intensifies its already extreme beliefs and observations unhindered by opinions from outside (McCauley & Moskalenko 2011). They become very committed and religiously devoted, adhering to as many of the traditional tenets of (Salafi) Islam as possible (Silke 2008). They may visit Mosques very frequently for prayer and adhere to rituals strictly (Henrich 2009; Sosis & Alcorta

2003). Extremist ideology may be embraced and the Western outgroup may be blamed for all the perceived wrongs afflicting Muslims, including the prevention of building a successful (Caliphate) Islamic state. This, in turn, can lead to the legitimisation of violence and an increasing involvement in helping the cause (Table 3) (e.g. Silber & Bhatt 2007; Bakker 2006; Precht 2007). This enhances the notion that there is conflict, that it is unjust, that the enemy is the West, and that violence is the only way to defend Muslims (Silke 2008).

Table 3. Increasing Involvement in Small Groups

Attribute	Group factors	Individual factors
Identity Increasingly isolated	Khan, Tanweer and Hussein were asked to leave several Mosques because of their increasingly extremist views therefore enhancing their isolation from the wider society, and the closer local community (Craig 2005).	Hussein hardly spoke to anyone with the exception of speaking in limited Arabic to fellow Muslims (Akbar & Herbert 2005)
Ideology legitimises violence	Adebolajo had been particularly interested in asking al Muhajiroun members when violence was justified (Walker et al. 2013).	Both Khan and Adebolajo expressed feelings of responsibility for Muslims (Botelho & Cruickshank 2013; Khan 2013)



Outcome
Adebowale, Adebolajo, and Lindsay preached, and distributed extremist literature (Laville et al. 2013; Milmo & Duggan 2013; Mendick & Ensor 2013; Pilditch 2013). Adebolajo protested and had been arrested (Gladdis & Greenwood 2013; Leppard et al. 2013; Robinson 2013b). Khan and Tanweer were involved in an Islamic bookshop that allegedly distributed extremist propaganda (Bond 2013). Khan had travelled to train in Pakistan several times (Gardham 2011). Adebolajo had travelled abroad with the intention of joining al Shabab in Somalia to fight (Hamilton et al. 2013). Khan had been involved in committing fraud to raise money for the Pakistani Muhajideen (Channel4News 2007). Khan had trained in Pakistan several times and had intended to fight (and possibly had) in Afghanistan (Hamilton 2011b).

At some point, perhaps due to some triggering or catalyst event, the group will become disillusioned with strategies other than violence (Horgan 2008). Perceived injustice is

already a regular feature in the mind of the would-be terrorist, and this has played an important role in the process so far. But for the group to believe that not only is violence just and necessary and urgent, but the only method of any use, requires that disaffection with current strategies or alternative methods be present (Crenshaw 1981; McCauley & Moskalenko 2011; Taylor & Horgan 2001). This could be based on outrage and a desire for revenge and retribution triggered by some catalyst event (Sageman 2004). The wars in Iraq and Afghanistan seem to have been such triggers for the 7/7 bombers as evinced by their video messages (Horgan 2008; Sageman 2008; Silber & Bhatt 2007; Travis 2008; Khan 2013).

There is significant trust and cohesion within the group. Interdependency and love is underscored and enhanced by isolation from the mosques they now deem to be potential threats to their group as they begin to contemplate action that is illegal and violent (Silber & Bhatt 2007; Sageman 2008). The personal becomes as politicised as all other perceptions of the world, and the individuals' life purpose is no longer based on mainstream goals like careers and family, but on ideological ambitions to enhance the lot of all Muslims by helping to establish Islamic greatness and the defence of Muslims (Silber & Bhatt 2007; Borum 2011). Increased involvement in actions seen to be helping the terrorist cause may occur, and may include a variety of roles from legal and legitimate (such as peaceful protest, researching/distributing extremist literature), to questionable and subversive (such as supporting terrorist groups in other ways, possibly by housing them, or providing other logistical tools/services that is not related to the violence they will commit) (Horgan 2008; Moghaddam 2005b).

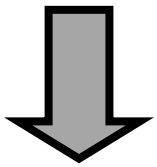
Getting Involved

Terrorism is one small and highly public feature of a much broader movement, and involvement to further the cause need not necessarily be violent (Table 4) (Crenshaw 1981; Horgan 2009b; Richardson 2006). Nevertheless, for some groups, violence is the outcome, but it must occur with the consensus of the group (Silber & Bhatt 2007;

Silke 2008). Given the process so far has been indicative of 'group think', and extremity shift, the power of small group dynamics may make this consensus reasonable to attain (McCauley & Moskalenko 2008; Moghaddam 2005a; Irving 1972).[9] Should there be a charismatic leader or spiritual sanctioner involved, the path towards violence may be even more likely (Horgan 2008; Silber & Bhatt 2007).

Table 4. Being in a Terrorist Group

Group factor
Being in a terrorist group influences process of radicalisation in a different way, with different factors: Khan was thought to have brought Tanweer, Hussein and Lindsay into his fold and was in this case, the leader. Under his guidance, Tanweer and Hussein especially, were radicalised and participated in a number of group-based activities designed to strengthen bonds and cohesion within the group, such as white water rafting, camping, paintballing (Gardham 2011; Addley 2011).



Outcome
Small group dynamics, roles including leadership, covert, isolated group. Holy Warriors: Both Khan and Adebolajo had (attempted) to fight abroad, with Khan going to Afghanistan and Adebolajo trying to go to Somalia. Covert and Illegal: Khan was being tracked because of his associations with other terrorists but was regarded peripheral and a petty fraudster rather than a real threat (Malik 2007).

Isolation from any others that do not share their beliefs becomes increasingly likely. Individuals may begin to actively engage in terrorist morality and come to believe that violence is just against a barbaric and threatening outgroup (Reicher et al. 2008). They become *dis*engaged from the morality of the mainstream, and even the local Muslim community (Moghaddam 2005a). Vengeance, retribution, and displaced aggression may motivate the group of individuals to define themselves as holy warriors responsible for defending Islam and Muslims against its oppressors (Horgan 2008;

[9] "Group think" occurs when individuals concur with the rest of a group even where their opinions or beliefs may differ so as not to interrupt the uniformity of the group (e.g. Irving 1972).

Silber & Bhatt 2007; McCauley & Moskalenko 2008; Moghaddam 2005a; Silke 2008; Richardson 2006).

Until this point, the process of radicalisation may have unfolded gradually. However, the decision to engage in action may occur relatively quickly as the group plots and prepares how and what actions it will perform (Silber & Bhatt 2007). Such actions may not be violence at home, but might involve travelling abroad for training to be a mujahedeen, fighting in Iraq, Afghanistan, or most recently, Syria (Hegghammer 2013; Hegghammer 2010; Horgan 2008; Horgan 2009b; Silke 2008; Silber & Bhatt 2007). Nevertheless, if the violence is to be directed in the West, then the terrorist group must now be covert because it aims to conduct illegal activities in its violence, and will now therefore be threatened by Western security services and police, if it has not been already (Hudson 1999; Silke 2008). The group must also have ties to an existing terrorist group or organisation (Sageman 2004; Horgan 2008).

This new, illegal and covert status will place incredible stress and strain on the group and the individuals (Hudson 1999; Silke 2008). It is possible that the threats they perceive now are not only towards Muslims, but are very realistically towards themselves in the form of being watched and hunted by the security services (Hegghammer 2010). These additional threats add to the perception that Muslims are targeted by the state. They also encourage yet deeper cooperation and tighter bonds of interdependence in members of the group. The members of the new terrorist group are not only working to defend all Muslims, but they are working to defend one another (Sageman 2004; Sageman 2008; Richardson 2006).

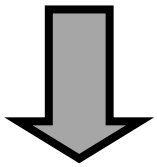
Radicalisation has been described as a "slippery slope of increasingly extreme behaviour, with increasingly extreme reasons and justifications icing the slope" (McCauley & Moskalenko 2008, p.421). These authors invoke the theory of cognitive dissonance to explain increasing involvement in the radicalisation process (e.g. Festinger 1962). Their overall suggestion is that increasing involvement, including

violence, may be partly the result of self-justification. That is, to reduce the psychological discomfort caused by inconsistencies – or dissonance – between a positive image of self, and bad less than desirable behaviour, individuals continue to behave badly in order to justify their previous bad behaviour. Dissonance might also shed light on the dehumanisation of individuals (e.g. the Stanford Prison Experiment, Zimbardo 2007). For instance, participants of Zimbardo's prison experiment, in which young men took on the roles of prisoner and guard in a basement laboratory kitted out as a prison, became increasingly more brutal towards prisoner-participants in the guard condition. This increased brutality, in the form of humiliation and punishments, was associated with dehumanisation (e.g. prisoners were forced to go only by their prisoner number). The guards justified this behaviour in different ways, but seemed to project responsibility for the behaviour, onto the prisoners, so that it was the prisoners acceptance of this behaviour that warranted this brutality; each act was justified by the last act (Zimbardo 2007; Carnahan & McFarland 2007; McCauley & Moskalenko 2011). For McCauley and Moskalenko (2008), this is the slippery slope radicalisation. Previous involvement warrants increasing involvement, and increasingly hostile acts.

So far, little has been made explicit in terms of whom the 'evil' outgroup is. This is because the enemy is a fairly ambiguous entity for Islamic extremists. What is clear is that Muslims are the innocent ingroup victims. Therefore, in some cases, the enemy might be limited to specific outgroups – Western governments for example, or the entire Western population, or even more broadly, all non-Muslims (including Muslims the extremists believe are apostate) (Sageman 2004; Sageman 2008; Richardson 2006; Bakker 2006; Silber & Bhatt 2007). Such beliefs are indicative of overly simplified categorical perspectives (Table 5). These simple dichotomies allow individuals to clearly and easily understand particular contexts in a manner that is favourable to Muslims – because they are the innocent victims of the greed and oppression of the evil enemy.

Table 5. Categorisation and Dehumanisation Enable Killing

Group factor	Individual factor
Terrorist groups provide and encourage simple categorical worldview enabling easily understood and caused grievances and easy solutions (i.e. outgroup are evil and harm ingroup, so destroy outgroup): "Do not be scared of the filthy kuffar [non-believers]. They are pigs..." (Adebolajo in Martin & Ledwith 2013).	Discrimination and other difficulties experienced by individual is blamed on the outgroup: "Radicalisation is a stick which is used to beat the Muslim community.... Words like radicalisation and fundamentalism are used by the British Government to silence Muslims.'" (Anjem Choudary in Greenhill et al. 2013)



Outcome
Perceptions and interpretations of outgroup as evil unjust responsible for all ingroup ills, and ingroup innocent, good victims. Enables hostility and aggression to outgroup in form of self-defence: "Your democratically elected governments continuously perpetuate atrocities against my people and your support of them makes you directly responsible" (Khan in his video will,Alzafiro 2013).

These beliefs lead individuals to perceive the world in terms of intergroup conflict – where the negative events that afflict Muslims are caused by an enemy intent on humiliating and subjugating them for their own selfish gains (McCauley & Moskalenko 2008). Politicised beliefs become an integral part of the individuals own identity, directing the way in which individuals perceive the world, and their place as defenders, in it. The West and non-Muslims are the threatening enemy and there is an all-out cosmic war on Islam and Muslims (Juergensmeyer 2000b). The only way to fight is with violence because violence is the only language that 'barbarians' understand (Sageman 2004; Sageman 2008; McCauley & Moskalenko 2011). Additionally, since Islamic extremists believe they are doing Allah's work, their behaviour is not only justified, but sanctioned and approved by God (Johnson & Reeve 2013; Atran 2006; Atran 2002). They are ridding the world not just of a group of

people they believe to be evil and unjust, but evil itself (Juergensmeyer 2000b). This also guarantees them success and supernatural rewards (Johnson & Reeve 2013).

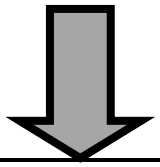
The outgroup is therefore largely dehumanised on the basis of its difference, ignorance, and barbaric non-belief (Loza 2007; Raffie 2013). Dehumanisation occurs when others are not considered in terms of human qualities, but as objects that are unworthy of moral concern (Waytz & Epley 2012). The values, and norms that constitute Western ideals as far as extremist Islamists are concerned, are based on lust; lust for material goods, for power, and utterly without morals, without God (Sageman 2008; Bakker 2006). The enemy understands only violence and are less than human because they are not Muslims (Rogers et al. 2007; Borum 2010; Capell & Sahliyeh 2007). They deserve vilification and hostility (Reicher et al. 2008). They are inferior and dangerous whereas Muslims are good and innocent victims. The good and innocent Muslims need protecting and defending against the evil and unjust enemy.

This is typical of dehumanisation and perhaps largely explains how and why terrorists and terrorist supporters justify the killing of, and their willingness to kill, civilians (Moghaddam 2005a; Della Porta 1992). The perspective of an all-out conflict that is simplified to be seen to be occurring between all Muslims and the entire West (or all non-Muslims), in combination with the dehumanisation of the entire outgroup as a whole, work to categorise and dehumanise entire groups, irrespective of their military status or not (McCauley & Moskalenko 2008). This categorisation and dehumanisation enables terrorists to psychologically distance themselves from their enemy, and override supposed mechanisms that normally inhibit the killing of other humans (Moghaddam 2005a). Importantly, the stronger the bonds are within a group, the more likely individuals within this group are to dehumanise non-member others, and harshly punish them (Waytz & Epley 2012). Arguably, the strength of the connection within terrorist groups is a possible factor in encouraging dehumanisation of the Western outgroup, and may facilitate the inclusion of civilians as legitimate targets for violence.

The motivation for participating in terrorist violence is tied to the need to right wrongs, to deter future violence, to revenge and retribution (Richardson, 2006; Sageman, 2004, 2008; Silke, 2008). But there are other motivations that are necessary to consider (Table 6). Not only do the small groups of like-minded individuals offer release from the burden of isolation and alienation, but becoming involved in violent extremist groups offers the individual a range of other positive experiences, such as excitement, danger, and a sense of worth (Silke 2008).

Table 6. Motivations and Rewards

Motivations	**Rewards**
Individual is tied to group and experiences anger, frustration, and vengeance motives. Martyrdom is celebrated: "I am directly responsible for protecting and avenging my Muslim brothers and sisters."(Khan in his video will, Khan 2013). Lindsay was in possession of lectures in which an extremist called al Faisal called for Muslims to murder Jews, Hindus and Westerners and in return for their martyrdom, they could expect a place in paradise (BBC 2006a).	Membership in terrorist groups brings danger, excitement, risk, and a sense of self-worth. It may also bring increased status, authority, respect, and even material benefits (Sageman 2004): Adebolajo and Adebowale were heralded as courageous heroes by Omar Bakri, and Anjem Choudary (Reynolds 2013; Davenport 2013). 13% of British Muslims polled as believing that the 7/7/ bombers were heroes (Populus 2006).



Outcomes	
Justification, moralisation, and inspiration for altruistic defence (self-sacrifice). "We are at war and I am a soldier" (Khan in his video will, Khan 2013). "I am a solder" (Adebolajo in Duell 2013).	Revere, fame, renown, reputation concerns/motives: Adebolajo spoke into camera phones explaining his grievances immediately after killing Rigby, his hands still covered in blood. This message has garnered a lot of media attention, as did the act itself.

Some have shown that the preference towards vengeance, and a willingness to participate in it is associated with sex and youth, males and the young being more vengeful than females (Cota-Mckinley et al. 2001). Silke suggests that this partly explains the increased likelihood of young men to be involved in terrorist groups (Silke 2008). Others argue that males may be more likely to travel the path of radicalisation because second and third generation Muslim males are more likely to be undereducated and unemployed than second and third generation Muslim females due to the threat of the latter being sent to marry a cousin in the homeland (Sageman 2008, p.69). Perhaps a more convincing (and less presumptuous) argument is that young males tend to be more prone to risk-taking and status seeking (Silke 2008; McCauley & Moskalenko 2011). Involvement in terrorism provides individuals with a way of enhancing their status (as well as an exciting, dangerous lifestyle), at least in the eyes of similar others, if not their complicit community.

The belief that an individual can achieve more in death than in life is an important feature; a reward for becoming a suicide terrorist (Horgan 2008; Toft et al. 2011). Individuals in terrorist groups may receive all sorts of other social benefits, such as increased status, respect, and authority with their immediate, probably similarly radical peers, if not the broader complicit community, although this may be debateable (Silke 2008; Horgan 2008; Taylor & Horgan 2006; McCauley & Moskalenko 2008). Some members may even benefit from the receipt of material benefits in the event of their death – that is, their families may be reimbursed, but this is typically limited to countries like Palestine (Sageman 2004).

Being considered honourable, heroic, courageous, and a martyr are all rewards that may influence the decision towards violence, particularly suicide violence (Atran, 2003, 2006; Horgan, 2008; Richardson, 2006; Silke, 2008). These rewards are important because it is not just hate and vengeance driving people to kill, but the positive 'pull' factors that are rewarded to individuals who decide to become involved (Horgan 2008). Such factors also provide impetus to maintain this particular track.

These rewards also serve to further enhance the commitment to the terrorist group as they bask in both the dangers and risks of being members of such groups, and the benefits of being considered heroic martyrs who fight for the good and innocent (Silke 2008; Richardson 2006; Reicher et al. 2008). The willingness to commit such acts of sacrifice, whether in martyrdom or non-suicide terrorism is nonetheless, still difficult to explain. McCauley and Moskalenka (2011) propose that group identification (feeling good when one's ingroup is safe and prosperous, and bad when it is not, and feeling good when the outgroup is suffering) and the human tendency towards cooperation, altruism, and punishment may explain this willingness to commit costly acts for the ingroup. Involvement in terrorism is therefore an altruistic act (Sageman 2004) that punishes an outgroup for transgressions against the ingroup. But what explains why so few are willing to incur this cost and punish the outgroup? "Presumably," these authors argue, "the extreme personal cost of radicalization to violent action is the barrier that stops many individuals who otherwise would act to punish individuals and groups perceived as oppressors" (McCauley & Moskalenko 2011, p.27).

Tip of the iceberg and the complicit community

Although it is tempting to see terrorist groups as working independently of the community that they arose in, such a view is largely erroneous. The capacity for individuals and groups to commit acts of terrorism largely rests on some kind of complicit, or at least passively supportive community (Richardson 2006; Horgan 2008; Taylor & Horgan 2006). Without recruits, funding, audiences for extremist rhetoric and ideology, and without logistical support, terrorist groups would struggle to form, to maintain coherence, to function, or be successful in their planning and execution of violence (Richardson 2006).

Importantly, an ostrich-like community – one that would rather bury its head in the sand than take note and report on activities and groups that may be intent on

participating in violence, or advocating terrorism – enables terrorism because it does nothing to help security services and police stop the groups involved. This action or inaction is difficult to define. It is not illegal and it cannot be said to be outright support of terrorism, but it certainly hinders the capacity of police and security services to stop terrorist attacks. Nor does such behaviour speak of condemnation of violence. Thus, a community can be complicit without being actively involved in helping terrorist group causes in other ways, whether legal or not (Horgan 2008).

The complicit community is therefore obviously a vital part in the process of radicalisation, and the occurrence of terrorism. It provides a terrorist group (whether a newly forming cell or an established global organisation like Al Qaeda) a population that *may* be able to identify to some extent with the grievances, and goals, even if not the methods of violence, espoused by terrorist and extremist groups. This is not to vilify the Muslim community. But it is vital that the complicit community is recognised as one that has the potential to become radicalised to an extent also, in a similar way that civilians from nations about to go to war become radicalised (McCauley & Moskalenko 2008; Reicher et al. 2008; Silke 2008). This particular aspect is often neglected by theories of radicalisation, beyond the acceptance that many individuals within such communities may share grievance with terrorist groups, and may even identify with the Umma (e.g. Moghaddam 2005a; Taylor 2010). In many respects, this neglect stems from definitional issues with regards to terrorism being an act that terrorists do, and the associated assumptions of terrorist exception in relation to non-terrorists.

Summary

People support, engage with, and participate in terrorism for a variety of reasons and there is no single path or causal factor that can predict it (Horgan 2008). Rather, there are a number of different factors associated with radicalisation that may have different levels of impact on different people at different times (McCauley & Moskalenko

2011). Risk factors include macro levels grievances, and individual vulnerabilities and experiences that may leave individuals receptive to radical ideology, although this is not necessary for radicalisation to occur. Nevertheless, risk factors may influence individuals towards like-minded others and learning about Islam where they may be exposed to extremist ideology. The small group provides relief from isolation but features of the small group, especially if becoming radicalised, are enhanced by this isolation. Frame-alignment may occur between the views of the individuals within the small group and the ideas they have been exposed to, or that they develop themselves. Isolation from outsiders increases the likelihood of risky shift, so the individuals in the small group hold increasingly extreme ideas, and unification and conformity within the group occurs leading to a categorical worldview of good versus evil. This promotes the dehumanisation of enemies, which may explain the willingness to attack civilians.

Vengeance is the primary motivation for violence in the face of some sort of moral outrage that acts as a catalyst, facilitating or enhancing the perception that violence is just, urgent and moral. Increasing involvement in terrorism may occur on a slippery slope of increasing bad behaviour to justify previous bad behaviour. The more involved in terrorism, the more they must believe that their actions so far are justified to inhibit psychological distress. Dissonance serves to justify questionable behaviour, and rewards and pull factors – possibly pertaining to status – further encourages involvement, especially in young males. The extreme cost of martyrdom (death) and involvement in terrorism (i.e. imprisonment, torture, etc.) can be considered altruistic, where individuals believe that by punishing the West (or the enemy group) for harming the Muslim Umma through terrorism, wrongs can be righted and future harm can be deterred.

The key drawbacks of these literature is that by nature of definition, terrorism and terrorists are largely exceptionalised, even though the psychological normality of terrorists is explicitly emphasised. The emphasis on group processes is useful and warranted but accentuates difference in terrorists versus non-terrorists, rather than

underlying similarities. Both definition and focus on groups also narrows the scope of who can be investigated, which feeds into the problem of lack of data on terrorists (and perhaps the overreliance on literature reviews, case studies, and open source data). Additionally, there are several important aspects of radicalisation that are underdeveloped. There is an implicit and yet underdeveloped explanation for why most people *do not* become terrorists. Although some state that "What is different about those who ended up involved in terrorism is that they came into contact with existing extremists who recognised their vulnerabilities", such an argument still fails to account for why *all* individuals who come in contact with extremists do not become terrorists (Travis 2008). The inability to explain why individuals do *not* become involved in terrorism is problematic because it is difficult to fully understand why some individuals become terrorists if we cannot also explain why most people do not.

There is an underdevelopment and lack of integration of the psychological concept of group membership and identity in the process of radicalisation, prior to involvement in terrorist groups. This underdevelopment and lack of integration is especially surprising since a core feature of the radicalisation process is identification with the Muslim Umma. Therefore, explanations of why and how identification with the Muslim Umma occurs are also lacking. This is important because it is a vital part of the radicalisation process upon which perceptions of conflict, and certain grievances hinge. A greater understanding of the identification process may increase our ability to explain perceptions of grievances and different responses that are possibly associated with radicalisation (such as the decision to wear traditional Islamic robes). Additionally, the lack of integration and underdevelopment of the psychological concept of group membership and identity, *early on in the process of radicalisation*, means that we may be missing important *shared* features of all human psychology that may shed further light on the radicalisation process. These shared, normal psychological mechanisms may be important for the way in which other features of the radicalisation process (e.g. socialisation, indoctrination) play out. This may be especially relevant and important with regards to the pre-radicalisation phase, which is largely ignored by most terrorism scholars, who focus more on situational features to explain why some go on to become radicalised, and others do not.

This thesis overcomes these issues by considering terrorism and radicalisation in broader definitional terms in an effort to reduce the impact of exceptionalisation. This has the effect of opening the scope of investigation by looking at normal psychological processes and mechanisms present in us all, which may shed light on features of terrorism and radicalisation. Because of this position, it is also able to generate data with a non-terrorist sample, which is becoming a more popular tactic (Chapter 5 and 6) (Swann, Gómez, Dovidio, et al. 2010; Ginges & Atran 2009; Ginges & Atran 2011; Ginges et al. 2011; Arce et al. 2011). This project also emphasises the individual-as-a-group-member, rather than either one or the other. That is, the importance of individuals within the group, and the importance of groups to individuals is emphasised but beyond that of the terrorist group (i.e. groups are important to all humans, not just terrorists). Normal psychological processes and mechanisms are explored here to shed light on the process of identification, perceptions of conflict and justifications for violence, and for offering explanations for why most people do not become involved in terrorism. By homing in on similarity rather than difference between terrorists and non-terrorists, some of the limitations of the terrorism literature may be overcome (although this approach has its own important limitations and caveats).

3. Social Psychological Identification and the Radicalisation Process

Introduction

The purpose of this thesis is to present psychological processes and mechanisms that may influence the radicalisation process. This chapter builds on the last by investigating psychological processes of social identity to shed light on the underdeveloped yet critical feature of terrorism and radicalisation: identification with the Muslim Umma. Social identity is a normal process that is present in us all in which group membership is important to individuals in intergroup scenarios. This chapter uses these normal psychological processes to provide much needed *theoretical* insight into: the problem of torn identities, and the overlapping process of identification with the Muslim Umma. It also proposes that the concept of 'identity fusion' is useful to begin to understand how identification with the *suffering* of the Muslim Umma might occur, particularly as an individual becomes more involved in subversion and illegal activities, and how this may act as a trigger or catalyst to violence. A secondary but no less important contribution of this overall approach is to specify alternative avenues away from (or not towards) radicalisation and terrorism. This chapter also suggests alternative theoretical explanations for why most people do not become involved in terrorism.

Social identity is periodically invoked in research and literature on terrorism, but it is not typically used as a framework to explain pre-radicalisation risk factors, and interpretations of terrorist grievances (Silke 2008; Rogers et al. 2007; Taylor 2010; Raffie 2013). Social identity is the *identification of an individual with a group membership that is important to his/her self-concept in a given intergroup situation*, and can vary in saliency (Hornsey 2008). When a social identity is triggered,

individuals will perceive more similarities between themselves and fellow ingroup members, more distinction between their ingroup and other groups, and less distinction within the outgroup (homogeneity and heterogeneity). Thus, individuals with triggered social identity perceive themselves, their fellow ingroup members, and outgroup members, in terms of their group membership, rather than as embodiments of individual idiosyncratic qualities. This provides a level of analysis that is somewhat between the individual and the group; it is the level of the individual-as-a-group-member. It is suggested here that features of social identity theory (SIT) may shed light on these three underdeveloped issues by increasing our understanding about:

Identification with the Muslim Group:

- Why certain (macro and micro) features of terrorism might lead to torn identity in potential terrorists early on in the process of radicalisation (or pre-radicalisation). This may explain why certain risk factors associated with terrorism push some individuals along the spectrum of radicalisation, and also has the potential to explain variation in extent (or not) of radicalisation. Thus, SIT may provide insight into why most people will *not* become terrorists.

Identification with the Muslim Umma:

- Associated with torn identities is the different styles of managing multiple, competing/conflicting group memberships, such as being both British and Muslim, and how this management may influence who are perceived as ingroup and outgroup members. This may be especially useful in understanding identification with the worldwide Muslim Umma. SIT typically considers *single* group memberships, but Roccas and Brewer have expanded upon this to develop the theory of social identity complexity (Roccas & Brewer 2002). This theory provides important theoretical insight into managing *multiple* group memberships, which is a crucial feature of extremist Islamist radicalisation.

Identification with the Suffering of the Muslim Umma

- Experiences of "fusion" (Swann et al. 2009) between an individual and their ingroup may also shed light on how threats towards self (as terrorists hunted

by security services, or as Muslims targeted by police on the basis of group membership), may be perceived as threats towards the wider Muslim community, and potentially vice versa. Identification with the suffering of the worldwide Umma is important to understand given that perceptions of conflict (and justification of violence) are vital for driving an individual in a terrorist group towards participating in terrorism.

Caveats

There are several limitations of this chapter that are acknowledged at the outset. SIT is one of many approaches that fall under the umbrella Social Identity Approach (Hornsey 2008). This is important because it is the original SIT that is invoked here and other approaches were developed to address particular limitations of the original (and Self-Categorisation Theory (SCT), Turner et al. 1987; e.g. Optimal Distinctiveness Theory (ODT), Brewer, M 1991). Both SCT and ODT sought to address, amongst other things, the rather underdeveloped notion of what drives people towards social identity and ingroup bias. For the original SIT, people sought to enhance their self-esteem via positive identification with ingroups. SCT promotes the self-concept argument, which is borrowed here, and ODT suggests that individuals require a particular balance of belonging to a group – or similarly with others – and distinctiveness from others, and group membership serves this purpose. There are alternative theories that could have been utilised here that may have influenced the findings in a different direction. Another important limitation for the original SIT, is that it dealt only with single group memberships (which will be explained in more detail later). In order to address the difficulties of dealing with torn identity, a theory such as social identity complexity, which builds on SIT to incorporate multiple identities, is used.

However, both social identity complexity theory and identity fusion are new approaches that are yet to produce a substantial support base rooted in empirical works.

Nevertheless, these theories offer particularly useful approaches to understanding the identification process, and empirical research is beginning in earnest, especially on identity fusion (e.g. Whitehouse 2013). Identity fusion is also able to address a real limitation for SIT, which is that the latter is not well supported cross culturally, whereas there is evidence that the former is (Yuki 2003; Whitehouse 2012). And finally, two interlinked limitations of this chapter are that certain features of SIT (specifically, social comparison is a largely psychological process in which individuals compare their ingroups with relevant outgroups) are interpreted in terms of behaviour, and these interpretations are *illustrated* rather than empirically tested, through case study anecdotes that have been drawn mostly from media sources. The first issue is a common one in studies using SIT, and the second is a common approach in terrorism research (e.g. Crenshaw 1981; Reicher et al. 2010). At this point, data on terrorist individuals is simply is not available or accessible to test these propositions empirically.

The chapter is split into three sections. The first section addresses the problem of torn identity. It first provides a basic overview of SIT (e.g. Tajfel & Turner 1979), before going on to describe the different strategies that can be pursued to deal with "negative" social identity. That is, a group membership that does not provide an individual with a positive sense of self for whatever reason. This will be applied to understanding why grievances such as relative deprivation and discrimination act as risk factors that are associated with radicalisation and involvement in terrorist groups. The different behavioural strategies associated with attempts to enhance social identity are then illustrated using examples from the 7/7 bombers, and Lee Rigby killers.

Torn identities seem incompatible particularly when the West is denigrated and hated by Western Muslims. This can partially be explained by behavioural strategies pursued to enhance social identity. It can be further understood by applying the theory of 'social identity complexity' to explain the way in which multiple group memberships, which may be competing or incompatible are perceived and engaged with. The social identity complexity theory (Roccas & Brewer 2002) will be briefly

introduced and illustrated where possible using examples from the 7/7 bombers and Lee Rigby killers.

The final section considers how identification with the plight of the Muslim Umma might be further enhanced by an individual's perceptions of "fusion" with that group. Identity fusion (Swann et al. 2012), may shed light on how individuals perceive the suffering of themselves as group members, *and* the suffering of fellow group members. The concept of fusion therefore, may enhance our understanding of the identification process, particularly with regards to the perception of conflict and that violence is urgent and just. Features of this theory will be illustrated mainly with Michael Adebolajo's experiences of capture, arrest, detainment (alleged torture), and harassment from MI5 on his attempt to travel to Somalia to join al-Shabab and perform jihad. Lastly, face 2 of the Lethal Mind-sets pyramid is briefly summarised.

Identification with the Muslim group

Social Identity Theory

SIT, or the Social Identity Approach[10], as it is sometimes referred to, is a group of theories dealing with the social psychological concept of group membership and identity (Hornsey 2008). According to SIT, individuals perceive the world on a spectrum from purely inter-*individual* interaction, to purely inter*group* interaction. A core set of experiments utilising a minimal group paradigm, originally conducted by Tajfel et al. (1971), and replicated many times since, had the effect of making group

[10] The social identity approach incorporates a number of social identity theories, most notable the Self-Categorisation Theory (SCT). SCT builds on some of the weaknesses and limitations of SIT and has a slightly different focus (Turner et al. 1987; Hornsey 2008). SCT does not feature in this thesis due to time and space constraints. Also, SIT original is most often presented in terrorism research, but only partially (with the exception perhaps of Raffie 2013). A contribution of this thesis is that it applies SIT to terrorism in a more holistic way that other scholars have attempted.

membership salient, despite arbitrariness (e.g. participants were categorised into groups by being randomly assigned to groups labelled X or Y) (e.g. Scheepers et al. 2009; Tajfel et al. 1971; Tajfel & Turner 1979). The aim of SIT was to explain how subjective and social (i.e. psychological) variables affect, or are affected by, objective determinants of social conflict (i.e. structures of society based on politics, socio-economics, and history). The theory broadly suggests that an individual perceives and interprets these objective variables according to their group membership.

The "self-concept" is an organising structure that contains information about the self, and influences attitudes, emotions, perceptions, and behaviours in a given situation (Kawakami et al. 2012; Henrich et al. 2010). Social identity is the part of self-concept that is derived from the group memberships an individual perceives themselves as belonging to (Turner et al. 1987; Tajfel & Turner 1979). Social identities are triggered in contexts in which the associated group membership is relevant: "there can be no intergroup behaviour without the relevant aspects of the social environment having been categorised in terms of whatever may be pertinent social criteria for the lines of division of people into 'us' and 'them', into ingroups and outgroups" (Tajfel et al. 1971, p.151). Importantly, social context need not be threatening to a group. As shown by the minimal group paradigm, individuals will show bias to an ingroup, even if it is arbitrary and no threat from the outgroup exists. A conference in which bakers and butchers are present would trigger in attendees either a baker or butcher social identity, depending on which group membership an individual had. Star signs, nationality, ethnicity, or gender are less likely to be triggered in contexts in which being a baker or a butcher is made relevant.

Where group memberships are salient[11], individuals internalise the beliefs, values, norms, attitudes, perceptions of the world, and behaviours believed to be expected of

[11] Saliency can be similar to triggering social identity – so that a particular group membership is called to the forefront of the self-concept in a given intergroup context (e.g. Forehand, M, Deshpande, & Reed, 2002), however, it may also indicate primacy of that group membership to an individuals' self-concept, irrespective of context (e.g. Roccas & Brewer 2002).

a typical member (Turner, 1982). Social identity is a process and it entails thinking and acting in terms of one's group. It is triggered over personal identity (the individual traits, experiences, and characteristics of the person), and thinking and acting in terms of self, in inter*group* contexts, whereas in most cases, the personal identity is triggered in inter-*individual* contexts. Because social identity is important to the positivity/negativity of the self-concept (i.e. how individuals regard themselves in a particular intergroup situation) individuals are motivated to perceive their group memberships in a positive light (Tajfel & Turner 1979; Tajfel et al. 1971; Turner et al. 1987).

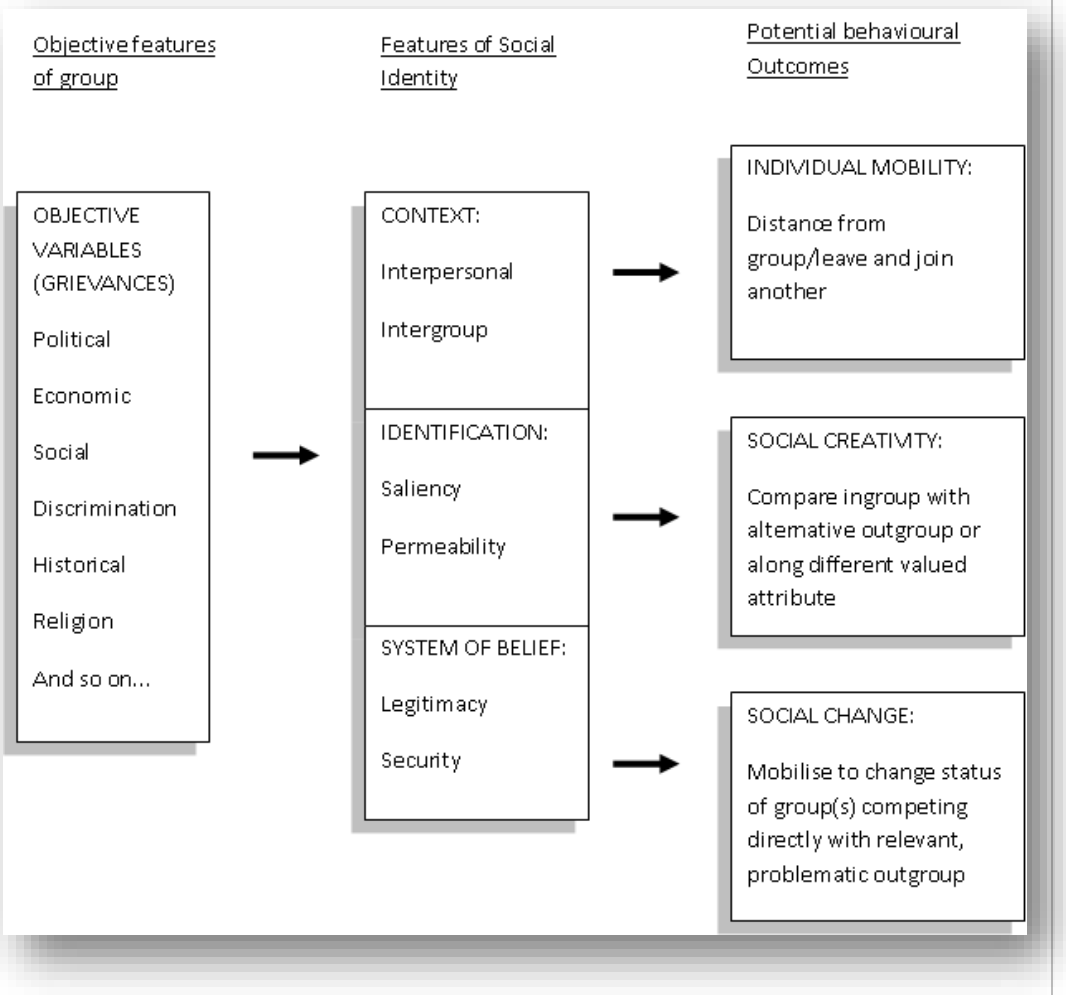
Positivity and negativity of a social group may be interpreted on the basis of a groups' power and/or status along some attribute that is important and relevant to the group in comparison to other relevant groups (Tajfel et al. 1971; Tajfel & Turner 1979; Turner et al. 1987). A key feature of SIT is intergroup comparison and ingroup bias. Ingroup bias improves the status of an individual through the positive status of the ingroup (Oldmeadow & Fiske 2010). Social identities can be perceived as positive, negative, legitimate or not, secure or not (Tajfel & Turner 1979). These features and a brief description are presented in Table 7.

Table 7 Perceptions of Social Identity

Social Identity	Explanation
Positive	If the group is dominant and high status relative to other groups on some basis (possibly objective and material, but not necessarily), then that social identity can be considered to be positive. An example might be a winning sports team.
Negative	If the group is subordinate and low status relative to other groups on some basis (possibly objective and material, but not necessarily), then that social identity can be considered negative. For example, a losing sports team.
Legitimate/illegitimate status	If the status of the group is deemed legitimate, then it is accepted, even if it does not provide positive social identity (although this may be achieved in other ways). However, if it is perceived to be illegitimate, the status may not be accepted as fair or accurate. For example, if the winning sports team is legitimately better than the losing team, then the higher status is accepted as appropriate. However, if the winning team are perceived to have cheated in order to win, then the status may be considered illegitimate.
Secure/insecure status	If the status of the group is viewed as secure, then it is not perceived to be liable to change. Low status groups would be determined to always be low status when compared with the high status group. If status is perceived to be insecure, it is subject to change, and competition may increase the status of a low status group (or decrease the status of a high status group). If the winning sports team is unlikely to ever lose (whether because of its legitimate skill, or its illegitimate capacity for cheating), its status as winning team is secure. However, if the winning team can be beaten (whether because it has some weaknesses that can be exploited, or its capacity for cheating is inhibited by a crackdown on corruption then the status is insecure and may change.

Depending on which of these attributes is relevant, different strategies may be pursued to deal with the psychological impact that these macro/objective features might have on the individuals and groups experiencing them (Figure 4). Above all, according to SIT, the individual (and groups) seek positive differentiation – that is, a *way in which to view group memberships that distinguishes the ingroup from other groups in a positive way on the basis of a valued attribute* (Hornsey 2008).

Figure 4. Core Features of Social Identity Theory: How Macro Features and Behavioural Strategies are Interpreted and Influenced by Social Identity



Social Identity Behavioural Strategies

Individual Mobility: Distancing From, or Leaving the Group[12]

Where a social identity is not salient, or positive, social mobility may be the preferred strategy. The group can be left and another group joined in order to seek positive social identity from this new group. However, group membership must be permeable

[12] Social mobility is the term used in SIT literature, but the term individual mobility has been used here so as to not confuse with the political meaning of social mobility (which is to move positions within society, i.e. become middle class despite having work class roots).

for this to occur. One cannot easily leave their racial group for example, although in most cases, one can change nationality or religious group membership. Specifically, "the individual may actually leave a negatively distinctive in-group if entrance into a higher status group is possible" (Jackson et al. 1996, p.241). It is this strategy that converts to Islam (and arguably, converts to Wahhabism within Islam) utilise in the sense that an existing identity does not fulfil their needs, and so they look to Islam for a group membership that provides a more central role in the self-concept.

Social Creativity: Diverted Comparison

Alternatively, social creativity might be pursued where the social identity is salient, secure, and possibly (but not necessarily) legitimate. Social creativity ultimately involves *social competition with other groups but in such a way that it does not entail direct conflict with a dominant, high status group* (Tajfel & Turner 1979). The competition occurs with an outgroup that is more likely to be lower status than the ingroup, which therefore leads to higher status for the ingroup, thereby enhancing positive social identity (and self-concept).

Specifically, "social creativity strategies include changing the valence of a negatively distinguished dimension to make it less disparaging to the in-group, enhancing perceptions of the in-group on dimensions other than the distinguishing dimension, or changing other elements of the comparative situation so as to favour the in-group (e.g. engaging in downward social comparisons)" (Jackson et al. 1996, p.242). The comparison between a majority outgroup with a minority ingroup is unlikely to lead to positive social identity. However, when that comparison is diverted to another outgroup, it is more likely to be positive. Minority groups cannot hope to achieve superiority against the dominant high status outgroup, but may be able to achieve superiority over other minority groups (e.g. Lalonde, 2002). Two other social creativity strategies are possible and they are discussed below.

Social Creativity: Alternative Attribution

One additional strategy is to change the attribute of comparison. A minority, or low status group can directly *compare itself with a majority group but along an alternative dimension*. This dimension must be valued by the ingroup and the outgroup to some degree. Individuals from a low status group (relative to a higher status outgroup) can increase that status by "*selectively devaluing,* or regarding as less important for their self-definition, those performance dimensions on which they or their group fare(s) poorly, and selectively valuing those dimensions on which they or their group excel(s)" (Crocker & Major 1989, p.616).

An example of this might be a minority low status religious group in social competition with a dominant high status secular group. If the low status of the religious group is due to objective socio-economic status, and this is seen as secure, and unchangeable, then an alternative social comparison between these groups might entail comparisons between the religious group as high status on a valued dimension compared to the secular group. An example of this might be morality and religiosity. In this case, whilst the ingroup might be perceived negatively in relation to the outgroup on the basis of socioeconomic status, it is perceived positively in relation to the secular outgroup on the basis of morality and religiosity.

Social Creativity: Re-attribution

The second alternative strategy entails changing *the value of a previously negative attribute into a positive one,* or re-attribution. The most often used example is the 'black is beautiful' slogan of the sixties (Hopkins 2011). The ingroup is positive because an attribute that is significant to it has been turned into a positive rather than a negative. The ingroup is perceived as positive because of this trait that is distinctive to it, whilst the outgroup might still see itself as positive for *not* having that trait.

If the secular group above saw religiousness in a negative way, then an ingroup that based its positive attribution on religiousness will not negate the status of the secular outgroup (to them), even though it enhances the status of the ingroup, from their own perspective. That is, such individuals may be "changing the valence of a negatively distinguishing dimension to make it less disparaging to the in-group" (Jackson et al. 1996, p.241). Religiousness is still a salient attribute to both groups, but it is interpreted in different ways.

Social Change: Direct Comparison

Finally, where social identity is salient, negative, and perceived to be illegitimately low status, and insecure, then the strategy for *social change* is most likely. This strategy is most related to social conflict because individual mobility is not a viable option. The perception here is typically that *in order for the individuals' fate to change, so too must the fate (status) of the group*. That is, "individuals may attempt to change the elements of the comparative situation so as to result in more favourable comparisons for the in-group" (Jackson et al. 1996, p.241). The preferred strategy is to redress the status quo so that it is more favourable to the ingroup. This could mean reducing the status of the *outgroup* in order to increase the comparative status of the ingroup. This does not necessarily mean violence, but intergroup conflict would come under this strategy. Minority group members are motivated to *enhance* the status of their groups, and individuals belonging to dominant groups are motivated to *maintain* that superior status. The only way to increase socio-economic (or other) status for oneself is to change the fate of that ingroup. In which case, they may seek to establish equality for the ingroup through action.

The 7/7 Bombers and the Lee Rigby Killers: Identification with the Muslim Group

This section applies core features of SIT to the 7/7 bombers and the killers of Lee Rigby. Although the 7/7 bombers and Lee Rigby killers became terrorists, it is suggested here that their psychological struggles were initially managed *without violence* and can therefore be illustrated via social identity behavioural strategies. The ways in which social identities were dealt with, perceived and managed by these individuals *prior* to their eventual involvement in terrorism, may shed light on how those who do *not* become involved in terrorism may also deal with, manage and perceive their group membership.

Risk factors associated with radicalisation can be thought of in terms of low status, or threats to the status of Muslims in comparison with other groups, particular the non-Muslim Western group. The outgroup does not need to be explicitly defined because like the Muslim ingroup, it is a categorisation that is largely perceived according to context. Perceptions of permeability and saliency of group memberships may influence the types of behavioural strategies pursued by those vulnerable to the lowered status of social identity. It will illustrate how the 7/7 bombers and Lee Rigby killers may have experienced and pursued different behavioural strategies as they sought to improve their self-concept through social identification with being Muslim.

Grievances threaten and influence Social Identity

Risk factors can be interpreted according to SIT. Each risk factor is an example of one group (the West) having higher status or power than the other (Muslims). Status/power of a group is akin to positive social identity, which enables a positive sense of self. Social identity is what binds an individual to his or her fellow group members. On

this basis, Muslim individuals should be motivated to enhance the status/power of the Muslim group relative to the Western outgroup (or other outgroups). As al Zawahiri said, "And he who takes a look at the position of these brothers can perceive that there is no comparison between the power of nineteen men and the power of America, and there is no proportion between the strength of nineteen men and the losses that were inflicted on America" ("Zawahiri on 9/11 and the 19 martyrs," 2008). Al Zawahiri and Al Qaeda's supporters, including those who perpetrate (or seek to perpetrate) terrorism, attempt to bring about social change using violence. By attacking America on September 11th, or the London underground on July 7th, the status quo was perceived by Islamist extremists such as al Zawahiri, to have been altered to favour Muslims because the status of the West (the US and the UK) was damaged/decreased by these actions.

But why is the perception of the status of Muslims in relation to the West so negative? Grievances are examples of negative social identity. Western foreign policy may be seen as a way to reduce or inhibit the capacity for Muslims to increase their own status in international relations with the development of a Pan-Islamic state, or Caliphate. This is a grievance popular with Al Qaeda-type groups and might be perceived to be a tactic by Western states to maintain their own higher status by inhibiting the chance for social change to take place. In his letter to America after the 9/11 attacks, bin Laden wrote: "Under your supervision, consent and orders, the governments of our countries which act as your agents, attack us on a daily basis... These governments prevent our people from establishing the Islamic Shariah, using violence and lies to do so" (bin Laden 2002).

Invasions and wars carried out in Muslim lands are a similar detriment to status because Muslims are the targets of aggression: "Your forces occupy our countries; you spread your military bases throughout them; you corrupt our lands, and you besiege our sanctities... You have starved the Muslims of Iraq, where children die every day" (bin Laden 2002). The invasion of Iraq by Allied forces was in response to the alleged threat of weapons of mass destruction. The threat posed by these WMDs

(whether they exist or not) is firstly a mark of instability of status between Iraq (which may be interpreted as 'Muslims' more generally, and appears to be the case by Islamists who identify with the Muslim Umma) and the West, and secondly, a threat to the safety and security of the West. The invasion of Iraq with the goal of neutralising the threat of Weapons of Mass Destruction therefore can be interpreted as maintaining the pre-threat status of the West.

The view that the war in Iraq was an avenue for economic gain by increasing control over resources such as oil can be considered in a similar way: "These governments steal our Ummah's wealth and sell them to you at a paltry price" (bin Laden 2002). Oil is a valuable and expensive resource, one that the [Western] world depends heavily on. Arguably it is in the best interests of these countries to maintain (or increase) their control of these resources. The argument for the Iraq war as a way to monopolise valuable resources is reasonable given the increase to, or maintenance of the status of, wealth and power enjoyed by the West, especially in relation to Muslim countries. The effect however, may promote perceptions that Muslim countries are inhibited from increasing their own status due to the actions of the West.

Discrimination, inequality, relative deprivation and the threat of cultural encroachment can be interpreted through the lens of social identity status also. Each of these factors indicates a low status relative to other groups. Lower socio-economic status, educational attainment, employment prospects, and general ghetto-siation of many Muslim communities in relation to the rest of the UK are low status indicators. The notion of low status in comparison with non-Muslim groups (in particular non-Muslim British) may be considered a viable way to think about some of the grievances that might be risk factors for radicalisation.

The concept of social identity ties an individual to the lower (or higher) status of the group they belong to. A young Muslim who is well educated, of high socio-economic status, and employed, and integrated (i.e. does not experience these grievances), may

still be party to them on the basis of being Muslim. Such an individual may still be privy to the effects of social identity, including the behavioural strategies associated with improving the status of that group membership (or pursuing social mobility). Another important factor to bear in mind is the effect that counter-terrorism policies that target Muslims may have on the Muslim social identity. Anjem Choudary claimed that "the Muslim community in this country are under pressure due to draconian laws which have tried to silence them" (Greenhill et al. 2013). Perceptions of oppression and associations with terrorism raise questions about the justness of the low status of Muslims in this case.

Pre-Radicalisation: Social Identity Behavioural Strategies

Few works on terrorism and radicalisation mention the pre-radicalisation phase, which is an important oversight because there is a great deal that can be learnt from it (Silber & Bhatt 2007; Horgan 2008). This section addresses the pre-radicalisation phase as interpreted through the lens of SIT. It suggests that *the core feature of pre-radicalisation is low saliency of one's ingroup membership, which may come about due to the perception of low status of that group*. Therefore, it explains why individuals like Adebolajo, Adebowale, and Lindsey converted to Islam and away from a presumably unsatisfactory but permeable previous group membership.

When an individual belongs to an unsatisfactory and permeable group, "the individual may actually leave a negatively distinctive in-group if entrance into a higher status group is possible" (Jackson et al. 1996, p.241). This may be the case for the three converts. Although there are other reasons (notably social ties) for conversion to Islam, it may be that their previous identities were unsatisfactory, prompting them to join another group. Where low saliency for a group membership is also associated with low permeability, an individual may struggle to actually leave the group and join a new one. However, individuals may be able to psychologically distance themselves from it. This distance may be achieved by: "decrease[ing] identification with the in-

group, decrease[ing] perceived similarity to the in-group, increase[ing] identification with an higher status out-group, increase[ing] perceived similarity to a higher status out-group, or use some combination of these strategies" (Jackson et al. 1996, p.241).

Leaving Christianity for Islam

Although there are no accurate numbers, it is thought that of the approximately 5000 conversions to Islam that occur every year in the UK, "perhaps less than a third, will actually go on to become radicals" (Robert Leiken[13] in, "Al-Qaeda's white army of terror," 2008). It is important not to demonise Muslims, or converts to Islam as more likely to be radical than not, although this number is quite significant given the size of the pool from which is arises. The converts' vulnerability to extremism has been associated with a number of traits: a lack of knowledge and social ties to 'moderate' Muslims, lack of linguistic capabilities, radicalisation in prisons, attraction to strict ideology that provide certainty, security, a desire to belong, and a desire to "prove themselves as newcomers" (Silber & Bhatt 2007; Neumann 2008a; Neumann 2008b; O'Duffy 2008; The Scotsman 2008).

However, it might also usefully be explained by individual mobility brought about by low saliency and permeability of a previous group membership: "Since permeable group boundaries render it possible, in principle, for people to gain membership of a higher status group, group members may identify less with their own group as they anticipate leaving it" (Ellemers et al. 1990, p.235). Jermaine Lindsey was a convert to Islam, as were Michael Adebolajo, Michael Adebowale. These individuals had previously belonged to families who had been strict Christians (Catholic). Given that these men were all of black African/Caribbean origin, it is possible that their experiences of *racial* discrimination may have lead them towards distancing themselves from their family origins (with the exception of Jermaine Lindsey who converted to Islam once his mother did). Omar Bakri, founder of banned extremist

[13] Director of Immigration and National Security Programme.

Islamist group Al-Muhajiroun, has been quoted as saying: "If there [was] no racism in the West there [would be] no conflict of identity. People, when they suffer in the West, it makes them think. If there [was] no discrimination or racism, I think it would be very difficult for us" (Omar Bakri in Wiktorowicz 2003, p.16). Obviously these men could not leave their racial group but they could find a new religion.

Muslim Identity at a Distance

Khan could not leave Islam despite his attempts to psychologically distance himself from it by behaving in an un-Islamic manner. "To bolster psychological distancing from the in-group, an individual may decrease the amount of time spent thinking about and interacting with in-group members, changing aspects of self to decrease physical and behavioural similarity to the in-group, and so on" (Jackson et al. 1996, p.241). These behaviours are evident in some of Khan's early conduct. For most of his youth, Khan insisted on the more westernised name 'Sid'. "He sometimes got what we call 'the Friday feeling' and would go to mosque for services, but he otherwise didn't pray much", nor did Khan talk about his religion, leaving friends unsure if he was even religious (Afzal Choudhury in Malik, 2013; Anon 2005).

Khan drank alcohol, took drugs, went to clubs and got into fights (BBC 2007b; Williams 2009). He had lots of white, non-Muslim friends, as well as Asian friends, and was always part of an in-crowd and popular, apart from a brief bout of bullying as a young boy (BBC 2007b; Malik 2007). He arguably had low saliency for his Muslim identity, but also low permeability because he could not physically *leave* the Muslim group. There seems to be "a widespread belief that the penalty for leaving Islam is death," and these beliefs seem to be "borne out of cultural ideas, which are particularly ingrained in the South Asian community relating to notions of family honour" (Maher 2008).

Even without this widespread belief (there is no available evidence to indicate what Khan or his family believed with regards to apostasy), given that Khan belonged to a Muslim family, and was born, raised, and lived in an area of Leeds (Beeston) with a community made up of predominantly Pakistani Muslims; being Muslim was not, for him, a permeable group membership. Hussein was considered a "tearaway" (drinking, doing drugs, and fighting) by the local Beeston community, and Khan "was not a good practising Muslim" (BBC 2005; Mohammad Shakil in Williams 2009). Even Tanweer, who had been thought of by the community as a 'good' Muslim was found later to have had a long term secret girlfriend (Hamilton 2011b). Each of these men had in some way, distanced themselves psychologically by *not* thinking and behaving in terms of the Muslim group membership, but in terms of his Western British group membership.

This method of alleviating a negative social identity may be sufficient for many individuals who find themselves in a similar position as Khan. Khan was certainly not an anomaly in his behaviour at this point and many other young Asian Muslims in the Beeston area alone portrayed these tendencies (Malik 2013). Although this psychological distancing seemed to work for Khan in his youth, he would go on to embrace, rather than reject, his Muslim group membership. It is suggested here that the Muslim group membership may have become increasingly salient to Khan *because* it was relatively enforced due to a *lack of permeability.* There is some empirical evidence to support the notion that "members of low status groups with impermeable boundaries identified more with their group than members of low status groups with permeable boundaries" (Ellemers et al. 1990, p.235; although Jackson et al. 1996). Because he could not leave the group, and was unsuccessful in his attempts to distance himself from the group psychologically, he sought social creativity strategies to pursue positive social identity (Jackson et al. 1996). In this case, Khan, like the other members of the London bombers cell, and both Lee Rigby killers, became members of gangs.

Khan and Tanweer both became members of the Mullah Boys gang. The Mullah Boys were a gang in Beeston consisting of a fluid number (15-20) of local Asian/Muslim youths who, at the time of Khan's early involvement in the 1990's, used drugs, got drunk, went to parties, got into fights, and even visited brothels on occasion (Malik 2013). However, they did adhere to some Muslim behaviours including eating halal foods. The Mullah Boys saw themselves as Muslims, but they rejected the Islam of their elders (Stokes 2007). This is an interesting turn of events for Khan who had until this point shown very little interest in his Muslim identity preferring instead to distance himself from it.

The Mullah Boys including Khan, eschewed the alcohol, the drugs, the partying, and the prostitutes as their interest in religion grew (Gardham 2011; Malik 2007). They were still an intimidating force, particularly for other gangs (of other ethnicities), as they: "took up the fight against drugs when the community elders threw up their hands, [they] warred with Anglo and Caribbean gangs" (Leiken 2011, p.138). Nevertheless, the Pakistani community warmly welcomed their increasing, particularly the elders of Beeston (Malik, 2007). They began praying more, attending mosque, chanting until the early hours, and talking avidly about Islam. They also began to help Muslim youth in the area that had fallen prey to the drug addiction that had swept into Beeston; "When persuasion and inspiration failed, the group used coercion. … the gang forcibly detoxified the addicts, cold turkey, over five days, and then sent them to pray" (Caldwell 2010, p.195).

The Mullah Boys formed and functioned as a response to the needs of the community for battling against moral decay (drug addiction, drug dealing, and prostitution) that seemed to threaten the Muslim youth of Beeston). The Mullah Boys *helped* their community and were respected for it, although their increasing preference for Wahhabism did cause problems also. Nevertheless, their work benefitted the

community: “It was sort of a street gang organized for social work” (Caldwell 2010, p.143). Although many of the drug dealers were Asian (with flashy cars and clothes, and loud rap music), the influx of drugs and prostitution enhanced the segregation between different ethnic groups in Beeston, making intergroup relations more tense, but increasing the solidarity within those groups (Malik 2011). There were racial tensions, territory disputes and intimidation but this was considered within the community as an example cooperation and strength: “They get together, back each other up. It makes them powerful. They control something: the streets” (Malik, 2013).

Similarly, both Michael Adebowale and Michael Adebolajo were involved in South-east London gangs in their teens, latterly as members of the Woolwich Boys (Doward 2013b). Both were involved in knife crime, theft, and drug dealing – quite the opposite of Khan in the Mullah boys (Soltis 2013; Walker et al. 2013). The gangs they were involved in (Smith-Spark & Morgan 2013) were primarily drawn from black African and Caribbean communities of the area (Doward 2013a).

The Woolwich Boys were a criminal gang of between 15-20 fluid members and they fought mostly with another primarily black African/Caribbean gang – the Lewisham Ghetto Boys (Doward 2013b). Despite the criminal activity, including using alcohol, and selling and abusing drugs, both Adebolajo and Adebowale went on to convert to Islam, joining other members of the Woolwich Boys following Wahhabi (Doward 2013b; Leppard et al. 2013). Their increasing observance of religious rituals would only begin once they became involved in al Muhajiroun (Gladdis & Greenwood 2013).

Where individual mobility does not work and saliency due to lack of permeability is maintained, individuals like Khan must seek other ways in which to experience a satisfactory Muslim identity. This occurred in a similar way for Adebowale and Adebolajo. By joining gangs that were initially oriented towards intergroup competition and conflict with other *racial* minorities, that prioritised the groups the individuals belonged to, these young men were at least partially, seeking to establish

a positive social identity. For the Mullah Boys, the issue was one of forcing drug dealers out of the community, and helping young Muslim drug addicts battle their addiction. In doing this, this small group targeted outgroups (particularly white and black gangs), and favoured Pakistani Muslims, both by helping control the threat of these gangs, and by preventing and forcibly cleansing drug habits.

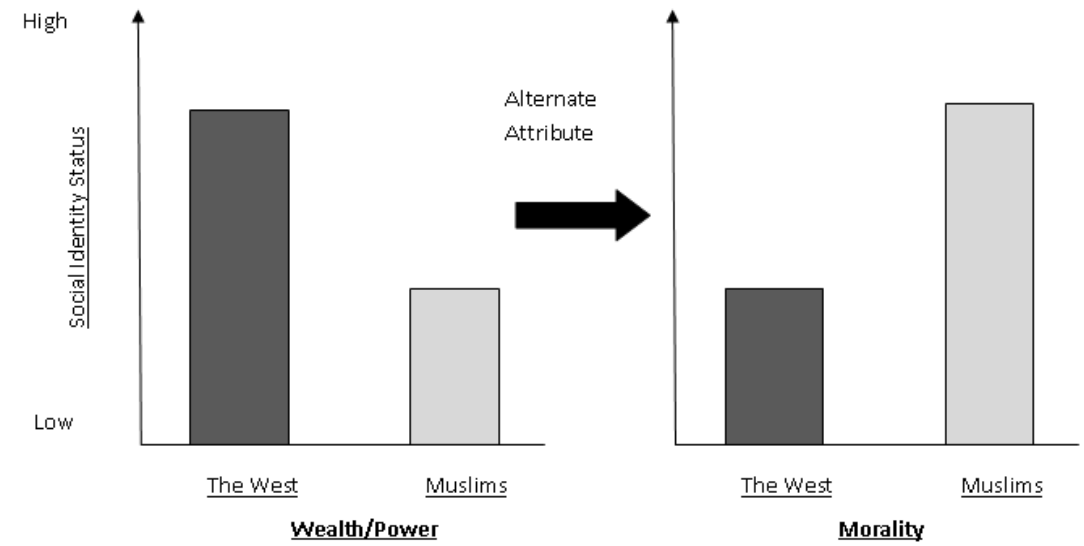
The Woolwich Boys similarly fought other gangs, but tended to pay most attention to other black African gangs. Although these gangs did not provide the same kind of social work as the Mullah Boys and were marginalised in the community, the Woolwich Boys still provided its members with a group to belong to, status, and protection. Thus, gang membership in this case can be seen as an example of social creativity in terms of comparison with an alternative outgroup (alternative to the more powerful/higher status group). These individuals can and did "compare themselves with similarly stigmatized others, whose outcomes are also relatively poor" in order to find themselves favourable status (Crocker & Major 1989, p.614). This particular comparison works on two levels: the competitions between the Mullah Boys, and the Woolwich Boys and their respective outgroups tended to be ethnic minorities, but they also tended to be other gangs (though in the case of the Mullah Boys, not always). The gangs themselves might be considered minority groups in relation to the wider society or community, which might explain why the Mullah Boys also fought with white gang members. The outgroups in this case were minority groups either due to their ethnic minority status, or because of their gang membership. Joining these gangs preceded the initial push towards extremist Islamism but was very much linked to turning towards Wahhabism.

Social Creativity: The Moral High-Horse

Khan, Tanweer, Adebolajo, and Adebowale all became interested in Wahhabism during their time in their respective gangs. They went on to learn about and follow Wahhabism. Lindsay apparently used extremist websites that glorified the 9/11 attacks

whilst still at school, although his active social learning was supplemented by enrolment on an after-school course about Islam (BBC 2005). Adebolajo and Adebowale were known to have joined al Muhajiroun to learn about Islam (Gladdis & Greenwood 2013). Khan and the Mullah Boys have been associated with al Muhajiroun, although rather than indoctrination through the preaching of extremists "such ideas percolated through a small group of friends as they talked in gyms and youth clubs" (BBC 2011; Malik 2013). Hussein, like Tanweer, was thought to have been introduced to Islamism through Khan (Addley 2011).

Figure 5 Social Creativity: Alternative Attribution



Social identity status cannot be achieved by comparing muslim wealth and power with that of the west (dark grey bar, left chart). comparisons with the secular West on an alternative attribute (i.e. morality, right chart), is more likely to enhance social identity for Muslims.

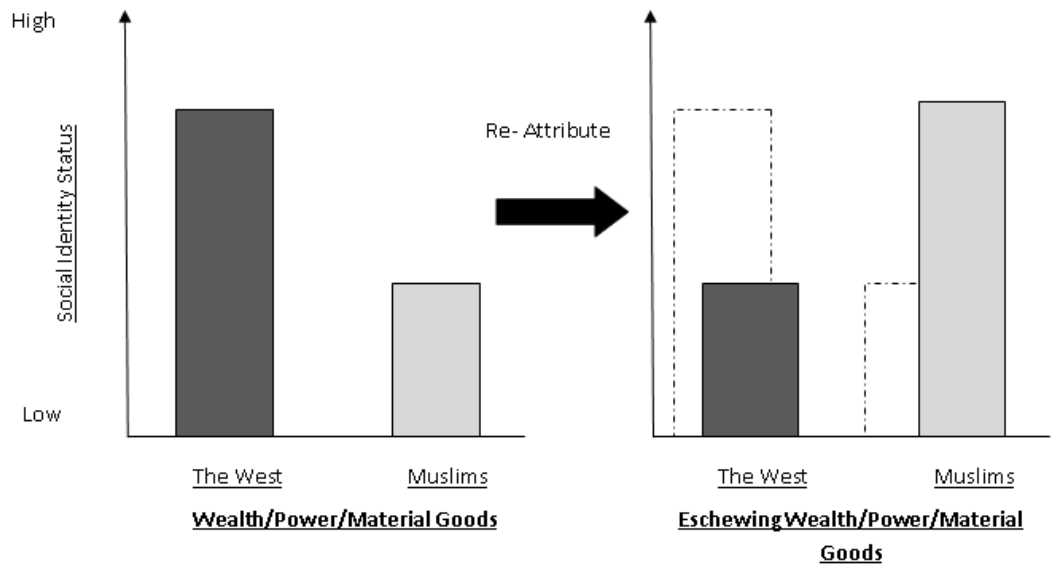
Active social learning is relevant to another social creativity strategy that moves beyond the racism of the conflicts experienced by the gangs. The increased interest in religion, Wahhabism particularly, grew from membership in these gangs. In learning more about Islam and what it means to be Muslim (i.e. refraining from intoxication,

being modest, being halal and avoiding all things harem), competition/comparison with other groups can occur on another level, beyond race. Competition can therefore occur with the higher status/power outgroup but along an alternative dimension. Comparisons with the wider outgroup along lines which the outgroup lacks – morality for example – may enhance status. The Mullah Boys began to identify more with being Muslim as a result of perceptions of negative aspects of wider society in the UK (i.e. drugs and prostitution) seemingly encroaching on Muslim youth, so that the status of Muslims along the lines of morality would be enhanced relative to the higher status of the non-Muslim British (Western) outgroup (Figure 5).

Social Creativity: Our Values Are Valuable, Yours Are Not

The reattribution of the ingroup in a positive light is yet another strategy for social creativity. By identifying as a group that is high in morality (relative to perceptions of the immoral wealth and power driven West), the Muslim ingroup can maintain higher status than the greedy, power-grabbing West. This may occur at the level of the state (UK), and worldwide. Although radicalised by this point, Khan states: "Our drive and motivation doesn't come from tangible commodities that this world has to offer" (Khan 2005). He is of course, referring to his religion and the morality, and the supernatural offerings that Islam has for him and all other 'good' Muslims. One does not need to be involved or committed to terrorism to pursue this strategy of reattribution because the preference for *less* wealth, power and material may be due to a perception of *bias* against Western values that distinguishes Muslims from this outgroup in a positive way. The elder Pakistani Beeston community discouraged their youth from aiming for high paying, and powerful jobs, preferring to emphasise faith, tradition, family, and community (Malik 2007). The perception of the outgroup as having opposing values to the ingroup provides a basis by which to differentiate an ingroup positively without resorting to violence (Figure 6).

Figure 6 Social Creativity: Reattribution



The wealth, power and material goods that enhance the status of the West relative toi Muslims (left chart), are reattributed and seen as negative features. Because Muslims eschew these asttributes, they gain status relative to the West (right chart).

Social Change: "One day Sharia[14] will be implemented in Britain"

Saliency and a lack of permeability are necessary requirements for social creativity and social change strategies to be pursued. Without them, the group can be left and a new group joined (depending on the permeability of that group), and this can be found in Adebolajo, Lindsay, and Adebowale's conversion to Islam from Christianity. Whilst social creativity strategies can provide positive social identity through positive distinction with other groups, they do not require that the status of the group can be improved or changed in relation to the more powerful outgroup. To pursue a social

[14] "[S]haria is supposed to guide, in every aspect, how practising Muslims are to live – with punishment for those who transgress" (Pendlebury 2008).

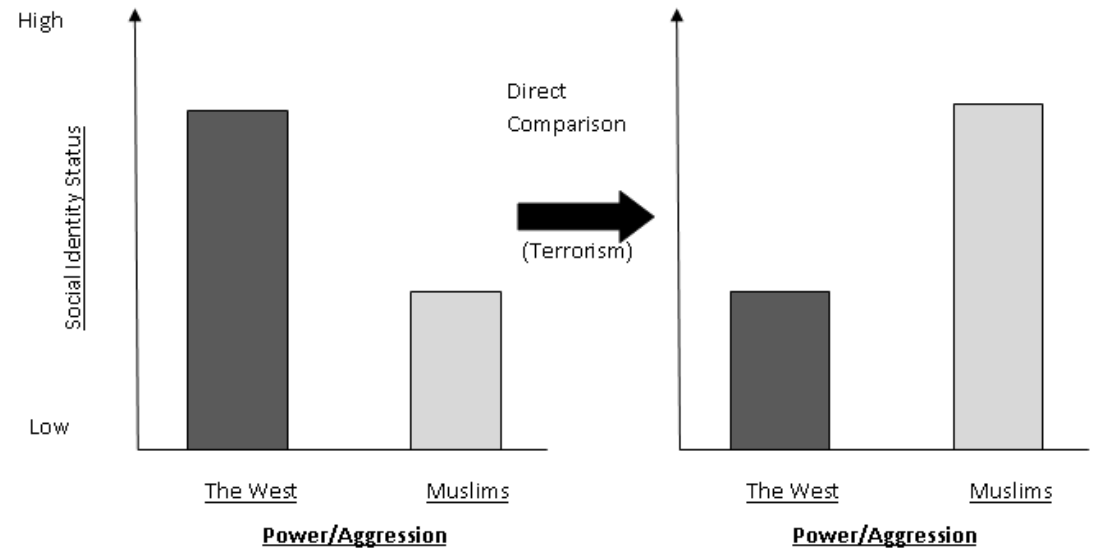
change strategy, one must perceive that the intergroup situation is unstable, and possibly that it is unjust (Ellemers et al. 1990).

This provides another set of factors that may differentiate between those who go on to engage/participate in terrorist groups and those that do not. Those who do not believe that change in the intergroup situation is possible, even if the belief is that such status is unjust (for instance, that the West will always dominate wealth and power and the Muslim group will always be a potential victim of that domination) will be unlikely to engage in strategies of social change, thereby limiting them to social creativity (or individual mobility depending on saliency and permeability of the group membership). Those who see social change as possible and just are more likely to pursue strategies of social change (Figure 7). Osama bin Laden has said: "we believe that the defeat of America is something achievable – with the permission of Allah – Glorious and Exalted is he" (bin Laden in Allouni 2012) clearly indicating that he, and those who follow him believe that social change in relation to the West is possible. In terms of social identity, he believes that the status quo between Muslims and the West (specifically the US) can be altered with action.

Strategies of social change do not necessarily lead to violence and may account for peaceful (or less violent) behaviours such as protests, and preaching. Michael Adebowale, Michael Adebolajo, and Jermaine Lindsey were often seen preaching extremism on the streets, though initially this preaching was peaceful, particularly for Adebowale (Bond 2013; Milmo & Duggan 2013). Anjem Choudary believes that social change is possible also: "One day sharia will be implemented in Britain. It's a matter of time. Whether it comes through our peaceful discussion and debate, whether it comes because the Mujahedeen will send an army one day" (Modi 2009). Lindsay, Adebowale, and Adebolajo were all involved in preaching and protests prior to their involvement in terrorism and although both Rigby killers would be arrested for violence at one of the protests they attended, these preaching's and protests were legal and largely peaceful, albeit extreme (Milmo & Duggan 2013; Bond 2013; Laville et

al. 2013; Gladdis & Greenwood 2013; Pilditch 2013; Robinson 2013a; Leppard et al. 2013; Craig 2005).

Figure 7 Terrorism as a Form of Social Change



The West is perceived as having the monopoly on power and aggression relative to Muslims (left chart), given it higher status. Terrorism is an act that redresses that power and aggression to weaken the high status of the West, and improve the status of Muslims (right chart).

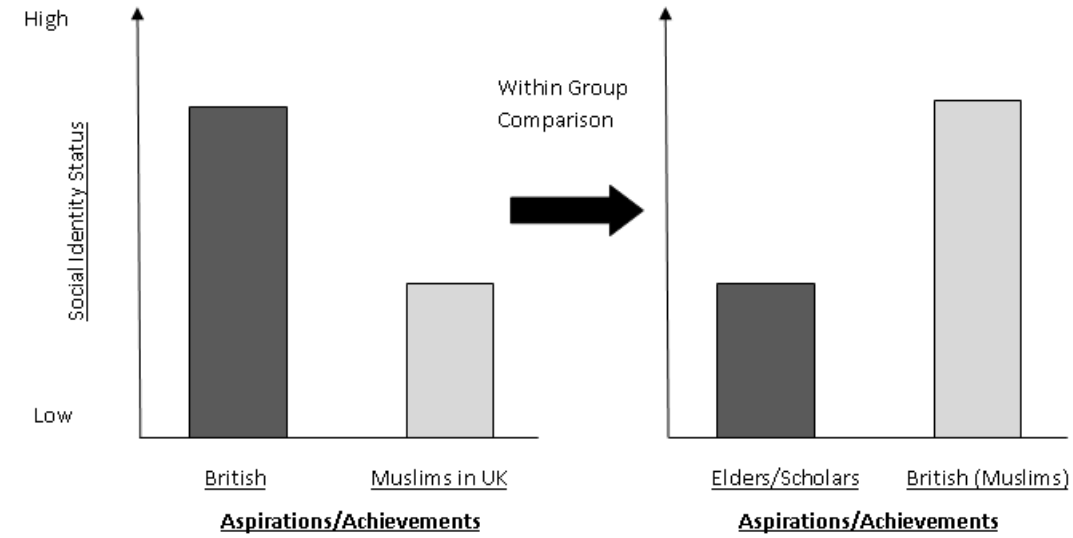
The perception of security held by Beeston elders and scholars was a particular bugbear for Khan. He had always believed very strongly that this mind-set held young Muslims from aspiring and achieving their potential. He believed that they could pull themselves out of poverty with education and motivation to have careers outside of the typical occupations encouraged by the elders and scholars: "These guys were doing good work on drugs, racial issues and education aspiration issues... [they] understood that if the Mirpuri community wanted to lever itself out of poverty, it needed to branch out from standard employment roles—taxi drivers and restaurant work." (Malik 2007). These concerns and hopes for the Muslim youth largely contradicted that of the elders who tended to encourage Muslims to be satisfied with their lot. At this point in the very early stages of radicalisation, Khan had "absorbed the wider culture" (Malik 2007). He was very much British *and* Muslim and his concerns were centred on that

group – particularly the young who he felt were being let down by the narrow, un-integrated views of the elders. This belief – that social change was possible for Muslims – was present in Khan pre-radicalisation, and he worked tirelessly with Muslim youth to spread this perception (Malik 2007; Malik 2013; Gardham 2011; Addley 2011).

At this point however, the comparison was not straightforward. The comparison was between British Muslim youth and the elders within the Muslim community, as well as non-Muslim British. Although not a behavioural strategy associated with SIT, others have suggested that individuals belonging to low status groups "may also prefer to compare themselves with ingroup rather than outgroup members to protect the self-concept or self-esteem from threatening comparisons" (Crocker & Major 1989, p.614). This seemed to be the case for Khan at this point, and was an issue he would carry with him until his death. He even lamented his disappointment in clerics and elders in his martyrdom message: "Our so-called scholars today are content with their Toyotas and semi-detached houses... By Allah these scholars will be brought to account, and if they fear the British government more than they fear Allah then they must desist in giving talks, lectures and passing fatwas, and they need to sit at home and leave the job to the real men, the true inheritors of the prophets."(Khan video will, Khan 2013).

Khan believed that the British Muslim youth *could* change their fate and increase their status relative to the wider British group, but most specifically, relative to the older generations who were content with their lot, who arguably did not perceive that social change was possible. Khan's concern was directed towards elements of the Pakistani/Muslim ingroup. Whilst the elders seem to prefer social strategies of re-attribution, diverted comparison and alternative attribution, Khan seems to prefer comparison within the group (elder Muslims vs. Muslim youth) (Figure 8). That is, he appears to be identifying as much with the British non-Muslim group, as much as the Muslim group. But he distinguishes the Muslim youth from the elders/scholars of his community, possibly because of the Western/British culture on one hand, and the tribal/traditional Islam on the other.

Figure 8 Social Change Within The Group



Comparing Muslims in the UK to non-Muslims in the UK on the basis of aspirations and achievements may result in negative social identity (left chart). Comparisons between British Muslims and the traditional Muslim elders on this basis improve the status of the the former (right chart).

Social Identity Theory as a Psychological Process Influencing Support/Involvement in Terrorism

The process of social identity provides a useful lens through which to understand the identification process, particularly in relation to pre-radicalisation. Social identity links the individual (who may have initially had limited or no interest in Islam) to the Muslim group and begins to explain the identification process. The risk factors associated with involvement in terrorism in the pre-radicalisation phase, and the grievances terrorists typically espouse might be interpreted as perceptions/experiences of negative social identity. Different behavioural strategies used to enhance negative social identity might influence an individual's progression towards (or not, or away from) radicalisation and terrorism. Terrorism might be considered as a *violent* strategy for social change that attempts to influence the status quo of the Muslim and Western groups by reducing the status of the latter.

Individual experiences of discrimination, relative-deprivation, inequality, etc. are examples of low social status relative to other groups, especially the majority group (white, non-Muslim). At a macro level, the Muslim social identity might be experienced as negative relative to the West on the basis of perceptions of Western foreign policy, including the invasion in Iraq and Afghanistan, resource encroachment and exploitation, and inhibition of the formation of a Pan-Islamic state. Intergroup context varies according to the micro or macro level, and is influenced by the level of identification with the Muslim Umma.

Joining the Muslim group, as a convert may be an example of social mobility where group boundaries are permeable which might begin to address why Adebowale, Adebolajo, and Lindsay became Muslim despite having been Christian. The lack of permeability in the Muslim group for Khan (and Hussain and Tanweer to an extent) may explain some early behaviours that can be interpreted as ways to psychologically distance from a negative social identity. Membership in (initially) racist gangs is an example of diverted comparison, which is a social creativity strategy designed to enhance social identity by competing with other low status groups.

Increased interest and following of religion (Wahhabism) came about through membership in these gangs, and is suggested to have influenced the ways that other social creativity strategies were pursued. This includes comparisons along different dimensions (such as morality rather than wealth), and reattribution of values (such as wealth and power being eschewed in favour of the superior value of morality). Finally, the perception that social change *can* occur, because the status of the competing groups is unstable, is an important criterion that may highlight a difference between those who do not become radicalised, and those who are more vulnerable to it.

Strategies for social change need not be violent and can include legal, subversive, and illegal action in order to redress the status quo of competing groups directly. Such

behaviours were exhibited by each individual to some degree prior to finally engaging with violence. Crucially, terrorism can be considered as a strategy to affect social change, and interpreted as such also: "So America left, dragging belied the tails of humiliation, defeat and loss" (bin Laden on terrorist acts abroad in Allouni 2012). Importantly, the perception that social change can occur was present in Khan *prior* to his radicalisation but was limited in scope to a specific group (i.e. not the Umma): the Muslim youth of Beeston. Although he would go on to identify with the Muslim Umma, in the earlier stages of his radicalisation, Khan did not identify with the Muslims of his community, beyond the troubled British Muslim youth. The way that Khan, and many others who go on to support and participate in terrorism, managed these torn identities is addressed next.

Identification with the Muslim Umma

This section looks at how individuals like Khan, the 7/7 bombers, and the Lee Rigby killers, may have managed their often conflicting and torn identities. One of the core limitations of radicalisation theories reviewed in Chapter 2 is their emphasis on identification with the worldwide Muslim community, but the lack of attention actually paid to explaining how it occurs. Yet, it is a key feature that distinguishes those who become radicalised from those that do not, according to these theories. It is not simply a matter of "identifying" with the worldwide Muslim community in some form and to some extent. It is also a matter of explaining how people manage torn identities (multiple social identities and group memberships), which is particularly important given the centrality that they have as risk factors associated with radicalisation. The importance of this is even further enhanced because Islamist groups exploit torn identity to radicalise and recruit to the cause. Part of the confusion about why these young men become filled with hate is that they are British and Western and have many ties to the very things they claim to loathe. How multiple group memberships might be managed, and the way in which those group memberships are managed may enhance our understanding of this element of the radicalisation process.

Unlike original SIT, which sees individuals choosing, whether consciously or not, one group identity (i.e. in the case of Khan pre-radicalisation, distancing himself from his Muslim identity by rejecting the norms, attitudes, behaviours etc. associated with it, in preference to Western norms, attitudes behaviours), social identity complexity considers how Khan might be dealing with *both* his Western, and Muslim identity at the same time. Rather than pitting one identity against another, Roccas and Brewer's approach looks at how multiple, possibly conflicting, identities might be managed. The theory of social identity complexity therefore provides a useful account of how individuals might deal with torn identity.

Social Identity Complexity: Managing multiple memberships

Most research from the social identity perspective and other group processes investigations tends to be limited to investigating single, rather than multiple identities. There is little research on how memberships to numerous different groups is affected by levels of identification with particular groups, and general intergroup attitudes (Brewer & Pierce 2005; Roccas & Brewer 2002). This is clearly important for radicalisation and terrorism, since a particular feature that seems to influence movement towards radicalisation is a sense of torn identity that can only be experienced if one is a member of multiple groups that are seemingly incompatible. The way in which an individual is able to perceive and internalise their multiple social identities may influence the way in which they perceive outgroup members. Roccas and Brewer (2002) developed a novel theory of social identity complexity that includes four different management styles an individual might use to internally represent multiple group memberships. These are: intersection, dominance, compartmentalisation, and merger. The theory of social identity complexity therefore offers an alternative lens through which to view the processes of identification that Khan and others may have experienced during their radicalisation.

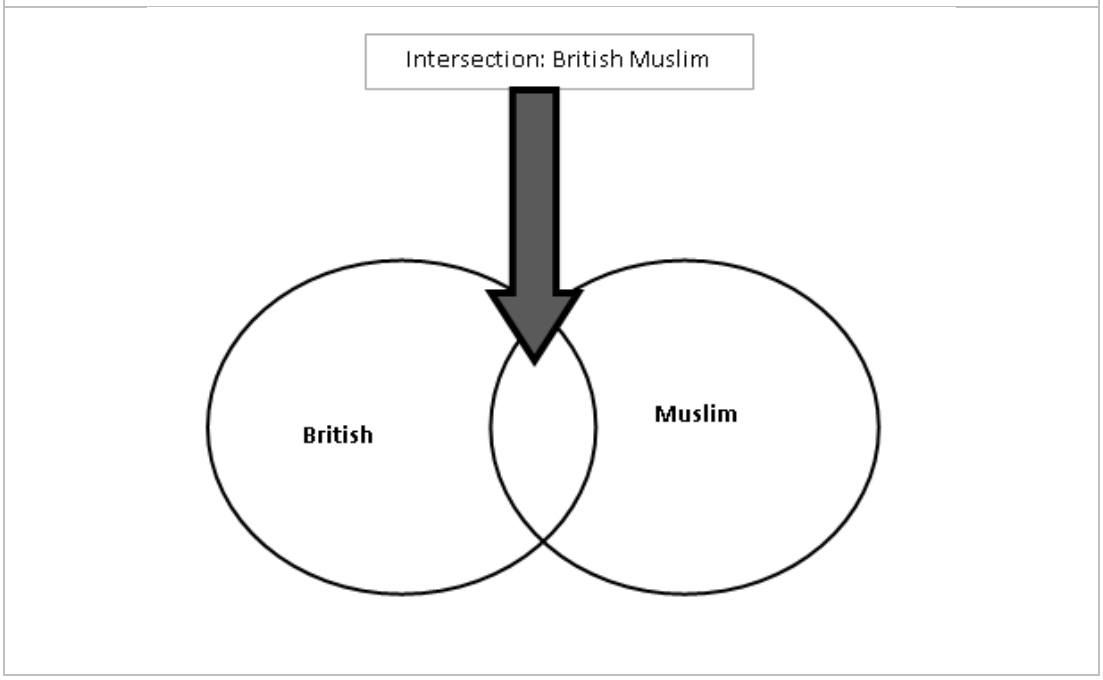
These different management styles are associated with increasing complexity. That is, intersection is least cognitively complex, and merger is most cognitively complex. These *different identity structures may partly explain some of the variation in radicalisation and identification* because some people will be more inclusive in their multiple group memberships (that is, incorporate more group memberships as ingroup) than others. The capacity for complexity (for inclusion of multiple group memberships) may have implications for how outgroups are perceived. This theoretical approach is relatively new and has not yet been subject to many empirical tests (Verkuyten & Martinovic 2012; Miller et al. 2009; Gresky et al. 2005). Nevertheless, the theoretical insights offered are useful for understanding the way in which torn identities might be managed at different stages of the radicalisation process, including perhaps explaining why some individuals do not become radicalised. This section will first briefly review the four management styles before illustrating these styles with real life examples drawn from the lives of the 7/7 bombers and Lee Rigby killers.

Intersection: Two or more salient identities converge to make one unique, highly distinct group membership

Some group memberships become, or are, more important to some individuals, in some contexts, than others. At the intersection of more than one group membership, there is one primary identity that is formed where multiple group memberships converge to create one highly distinct group (Roccas & Brewer 2002). In this way, "an individual can achieve simultaneous recognition of more than one social identity and yet maintain a single ingroup representation" (Roccas & Brewer 2002, p.90). For an individual whose intersected identity might be based on both their British identity, and the Muslim identity, the primary group membership is that of British Muslim. Such an individual may be less likely to identify with the worldwide Umma, because in this case, the intersection specifies Britishness as an integral identity that cannot be fulfilled because many of the Muslim Umma will not satisfy the criteria of being British, even though they do fulfil the criteria of being Muslim. In this case, however,

such an individual would not see non-Muslim British as the ingroup either because this would not satisfy the criteria of being Muslim. Nevertheless, such an individual would identify more with British than Japanese others, because being British is still an important feature of the intersected identity. Intersection therefore indicates distinctiveness from non-Muslim British people, and a lack of inclusiveness to all Muslims who are not British (Figure 9). Boundaries between who is ingroup or outgroup are very clear and easily identifiable.

Figure 9 Identification at Intersection: British Muslims

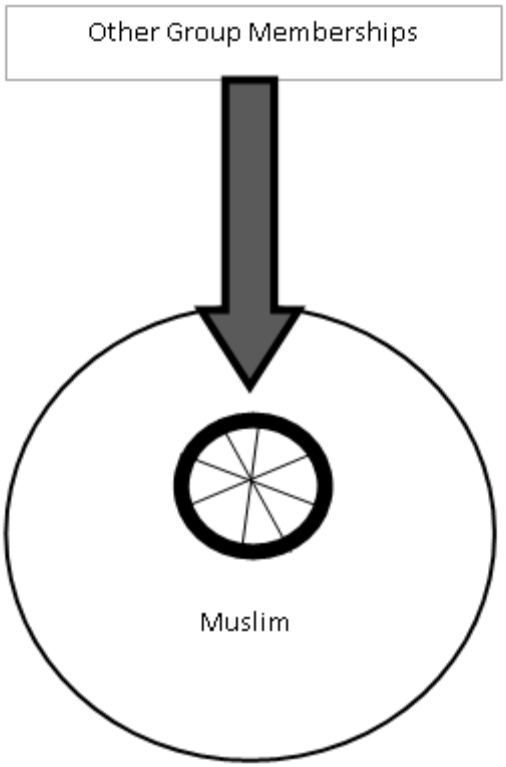


Dominance: One Primary Identity (other identities are subordinate and considered in terms of intragroup differences)

A primary group membership (or identity) may be adopted when there are multiple groups, but which compete or are incompatible: "the ingroup is defined as those who share membership in this primary ingroup category" (Roccas & Brewer 2002, p.90). Being Muslim can be a potent primary identity which is the umbrella to other 'lesser' group memberships (e.g. Verkuyten & Martinovic 2012). Fellow ingroup members are all those who are Muslim, indicating a potential for identification with the

worldwide Umma (Figure 10). If the primary identity were British, then identification with the Umma would be highly unlikely. This is possibly a prominent strategy for those who go on to become radicalised when dealing with multiple, or incompatible/competing group memberships. Outgroups are those who are not members of the dominant ingroup, even though other social identities may be shared.

Figure 10. Identification at Dominance: All Muslims

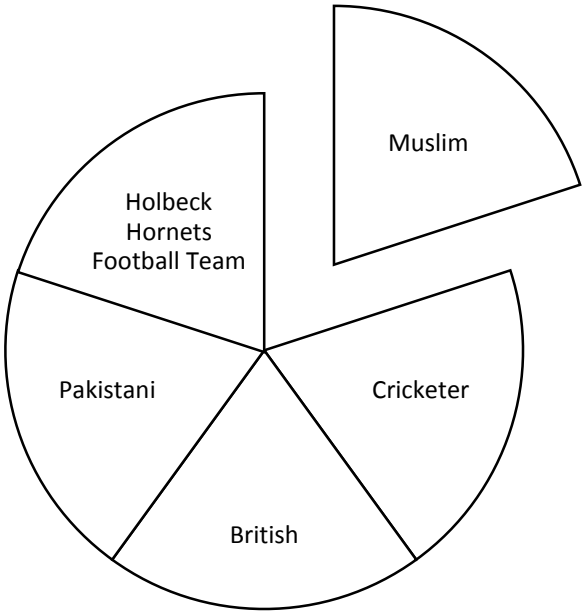


Compartmentalisation: Social identities are context specific

Context is highly influential in the process of social identity (Tajfel et al. 1971; Turner et al. 1987; Brewer 1991). Compartmentalisation occurs because: "social identities are context specific or situation specific" (Roccas & Brewer 2002, p.90). Context decides who is an ingroup or outgroup member. Being a Muslim might only be relevant in particular contexts, thus identifying with Muslims may only occur at

specific times. Figure 11 illustrates that in contexts in which being Muslim is relevant, the Muslim social identity is triggered, whereas if the context refers to ethnicity or football teams, then being Pakistani, or being a member of the Holbeck Hornets[15] football team is triggered. However, when issues that affect Muslims primarily are experienced (or exposed), identification with Muslims worldwide may still occur, and thus, compartmentalisation may still be relevant to the radicalisation process. Outgroups are also defined by context in relation to which ingroup membership is triggered by an event.

Figure 11. Compartmentalised Identification: Being Muslim is Context Specific



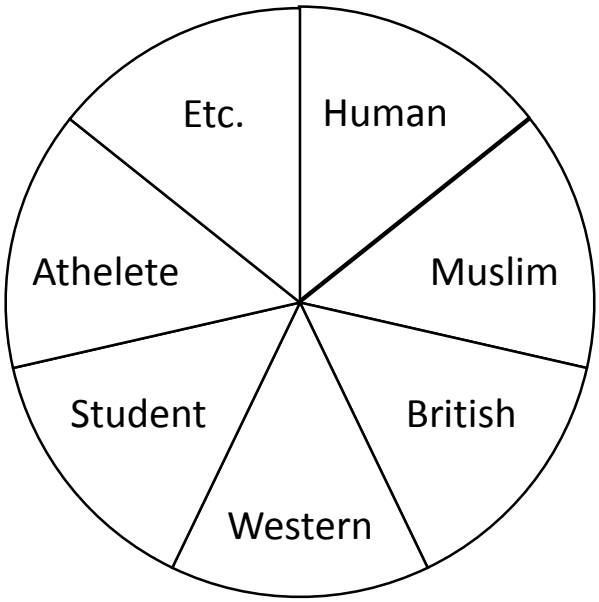
Merger: The sum of social identity parts

This structure incorporates all important group memberships and is the most complex of all management systems. Those classed as ingroup members in this system come from many different groups: "social identity is the sum of one's combined group identifications" (Roccas & Brewer 2002, p.91). Potential ingroup members are

[15] Hasib Hussain was a team member of the Holbeck Hornets (Reshef 2005).

increased, but outgroups are decreased because so many different groups now constitute the ingroup. Muslims might be ingroup members, but so too might Brits, vegetarians, Sagittarius's, Harry Potter fans, etc. It is unlikely that those who can manage their multiple identities with the merger strategy will become radicalised because the ingroup is too large (Figure 12). Individuals who merge their multiple group memberships are *less* likely to become radicalised, because they are less likely to be able to easily identify and distinguish themselves from any outgroup member (or vice versa). Such individuals are more likely to see themselves simply as humans, rather than some more narrowly defined group (Roccas & Brewer 2002).

Figure 12. Merger Identification: Inclusive Identification



The 7/7 Bombers and the Lee Rigby Killers: Identification with the Muslim Umma

This section illustrates the different ways in the 7/7 bombers and Lee Rigby killers have managed multiple group memberships, or torn identities. Although the theoretical insights from Brewer and Roccas (2002) theory are applied to individuals

who went on to commit acts of terrorism, the same management styles may also shed light on why people do not become radicalised. Each management style will be addressed and illustrated utilising information about the 7/7 bombers, or Lee Rigby killers in turn. A final section will discuss potential factors that might influence the preference (or capacity) for particular management styles, which may provide yet more features useful to understanding variation in the radicalisation process.

Intersection Identification: Tribal Muslims and British Muslims

The intersect style is the simplest way of managing multiple identities and the focus of the ingroup is very narrow. Boundaries are very clear. These boundaries for Khan and many other Muslim youth are problematic when they do not include them, such as the tribal Pakistani Muslim identity intersection that is seemingly favoured by the Beeston elders. In this case, the traditions and languages that hark back to small areas of Pakistan are emphasised, are problematic for second and third generation Muslims who have very little knowledge or access to them and in fact have more association with Western/British traditions and languages. Intersection in this case has the effect of expelling individuals who do *not* fit the mould properly and might account for the torn sense of identity that is so prevalent in Muslim youth in the UK.

Khan had indicated his own intersection identity in his insistence that the Muslim youth of Beeston – the second and third generations born and bred in the UK could change their social and economic standing relative to the elders who arguably did not perceive that social change was possible. Whilst the elders seem to prefer social strategies of re-attribution, diverted comparison and alternative attribution, Khan seemed, at this early stage, to prefer comparison *within* the group (elder Muslims vs. Muslim youth). He appears to be identifying as much with the British non-Muslim group, as much as the Muslim group, and favouring the British Muslim group (in this case, the youth of Beeston) particularly. This might explain some of his frustration towards the elders and scholars: he did not always see them as part of his ingroup

(British/Western Muslim), but part of an outgroup (tribal Pakistani Muslim) to which he had only limited and unsatisfactory access. But despite having "absorbed the wider culture", there was never a good fit into the wider British community either (Malik 2007). Although he would go on to identify with the worldwide Umma and commit the ultimate act of terrorism on its behalf, he had, at this earlier stage indicated the same kind of intersect management style that excluded him (and many other second/third generation Muslim youth) from the Islam of his community.

Torn identity experienced by Khan, and many of the second/third generation Western Muslims that are targeted by extremist Islamist rhetoric can be related to an intersection management of multiple identities. Tribal Islam was not inclusive enough for the British Muslim youth, creating a schism, which in combination with the lower status of the Muslim group (in relation to the wider British group) may have influenced Khan's early distancing from the Muslim group. His social mobility having been hindered by the impermeable nature of the (Pakistani) Muslim group, he then indicated intersection himself when the Mullah Boys became more 'Muslim' (following religion and signals), yet rejecting the tribal Islam of the elders in favour of Wahhabism. He, and the Mullah Boys at this time had been British Muslims and their actions benefitted the British Muslim youth of Beeston (i.e. forceful drug cleansing, youth clubs, activities) (Malik 2011). The increasing importance of Wahhabism and the eventual emphasis on the Muslim Umma further distanced the Mullah Boys from their elders.

Dominance: Identification with the Umma

For Khan and Wahhabism more generally, the traditional tribal Pakistani approach to marriage was un-Islamic (Malik 2013). Indeed, "Islamism's most important tenet is that Muslims should not be divided by race or nationalism (that all Muslims are one" (Malik 2007). Khan went on to marry for love and not to his cousin as his family had wanted, which increased the isolation between himself and his family, who moved away from Beeston, mistakenly hoping that he would follow suit, and leave his new

wife, and Wahhabism behind (Malik 2007).[16] There is perhaps, an important distinction that can be made between the ways that the elders perceive being Muslim and the way that young people like Khan perceive the Muslim group. For the elders, the cohesion of the group rests on tradition as well as religion. It is at the intersection of these groups that these individuals perceive the ingroup (and therefore relevant outgroups). Islamists, like Khan however, perceive the ingroup solely according to being Muslim and this is how individuals identify with the worldwide Muslim Umma. They have a *dominant* rather than intersect management style. It is this dominance of the Muslim group membership that enables individuals to identify with Muslims around the world and therefore become more sensitive to the threats towards Muslim countries and Muslims generally (Figure 10). The other group memberships that may have played a part in the intersection management style – such as being British or from Pakistan – now become features of individual difference within the wider Muslim ingroup, rather than specific group memberships themselves (e.g. Roccas & Brewer 2002).

It is the dominance management style – where being Muslim is the primary and central group – that may explain an important aspect of identification the Umma. This way of managing multiple group memberships provides a clear ingroup that becomes homogenised *despite* the within group differences. These within group differences, as has already been shown, are very important, and quite possibly vital to the progression of identifying with the Umma. As Omar Bakri pointed out, without racism, groups like Al-Qaeda would have struggled to find support in the West (Omar Bakri in Wiktorowicz 2003). What he did not mention was that it is actually also exclusion from *within* the Muslim ingroup that drives young Western Muslims towards a method of identification that allows them to become part of an inclusive Muslim group that does not reject them because of their race or nationality.

[16] The loss of familial ties is a familiar feature of radicalisation (e.g. Horgan 2013; Horgan 2008; Crenshaw 1981; Silke 2008). The distance between Lindsay and his Muslim convert mother was physical (she lived in the US whilst he was in the UK), and the distance between Adebolajo and his family, and Adebowale and his family, was perhaps more psychological and emotional due to the conversion away from Christianity and to Islam (Smith-Spark & Morgan 2013; Booth 2013; Mendick & Ensor 2013; Audrey et al. 2005).

The centrality of the Muslim identity for the 7/7 bombers is illustrated particularly effectively by Tanweer's apparent surprise and disappointment that British Muslims appear apathetic towards the grievances espoused by extremists, especially with regards to Western foreign policy.

> *"Oh Muslims of Britain. You day in day out on your TV sets, watch and hear about the oppression of the Muslims, from the east to the west. But yet you turn a blind eye, and carry on with your lives as if you never heard anything. Or as if it does not concern you. What is the matter with you that you have turned your back on the religion that Allah has chosen for you?"*
>
> (Tanweer 2012).

The dominance of the Muslim group membership for Tanweer and Khan, and presumably the remaining two members, seems to enable identification with Muslims across the globe – "from East to West" as Tanweer puts it, irrespective of the many dividing factors, such as race, nationality, language, or perhaps even faction of Islam followed. The capacity to identify with all Muslims, irrespective of other potenitally dividing group memberships enables the perception of the worldwide Muslim Umma as cohesive. Importantly, such a management style provides a very simplistic division between who is part of the ingroup (Muslims), and who is not (non-Muslims). When that group membership is religious, the notion of cosmic war comes into play powerfully: "Those who believe, fight in the cause of Allah, and those who disbelieve fight in the cause of Shaitan" (Tanweer 2012; Juergensmeyer 2000a). Thus, the preference and capacity to manage multiple identities as per the dominance style is vital to identification with the Umma, and as a consequence, identification of a wide but ambigioulsy defined outgroup.

Contextual Identification: Being Muslim According to Time/Place

Compartmentalisation may play a part in the radicalisation process prior to one claiming a dominant Muslim identity (it may also be relevant to 'de-radicalisation', e.g. Horgan 2009). Compartmentalisation occurs when an individual has several important social identities that are triggered by context. A young British Muslim like Tanweer, or Hussain could be British and Muslim, Pakistani, and he could be keen mid-fielder for the local football team, or a cricketer, at any one time providing that the context called for it.

It is possible that during the radicalisation process, compartmentalisation of these many and somewhat incompatible group memberships means that different contexts provide the relevant setting for different group memberships. For instance, despite his plans to blow himself up, the night before the bombings Tanweer "was playing cricket with his friends until quite late in the evening" (DailyTelegraph 2005). Both Hussain and Tanweer played team sports during their radicalisation, particularly early on, and these teams often including different ethnicities, and non-Muslims (Faramarzi 2005; Reshef 2005; Akbar & Herbert 2005). Adebowale, who despite having become sullen and unresponsive towards non-Muslim neighbours, had animatedly talked with a non-Muslim neighbour (but fellow football support) about football just a couple of days prior to the attack on Lee Rigby (Moore-Bridger et al. 2013).

Even though he had become more extreme in his views to the extent of having travelled to Pakistan for 'terrorist training', Khan still spoke out against the 9/11 attacks whilst mentoring at the school (BBC 2007b). Hasib Hussein's family were shocked when they learned of his involvement (and still deny it): "He didn't start acting differently. Hasib was just the same as he had always been" (The Mirror 2006). Tanweer perhaps took his compartmentalisation further. He was thought of as a very good Muslim, was proud to be British, yet he had been involved in racist gangs, charged by police, and it turns out, had a secret girlfriend (Craig 2005; Williams 2009; Hamilton 2011a).

Contexts that trigger the Muslim identity, such as media coverage of the war on terror, and other grisly images of Muslims being harmed by various conflicts, might trigger the same kind of hostility as Tanweer presented in his martyrdom video. Compartmentalisation may explain why many people who express these same ideas in certain situations (such as when the Muslim group is made salient, or contextually triggered) do not go on to be involved in terrorism, but may support or advocate it is some situations (i.e. Populus 2006). Yet, this management style may also explain why so many individuals who *do* go on to become involved in terrorism are able to apparently live as they always have – as individuals with multiple somewhat incompatible, group memberships.

The way individuals structure multiple identities provides them with a good idea of who the ingroup is (particularly if it is simple), and who the outgroup is (on the basis of who is not a part of the ingroup). With this way of understanding who we/they are, the process of social identity presented in the previous section of the chapter can be played out. That is, in perceiving himself a part of the Muslim Umma (dominant structure), Khan and the other terrorists can also perceive macro level grievances as negative status. Thus, identification with the Muslim Umma through dominance leads to individuals more likely perceiving as status threats/low status, events that are negative for unknown individuals and groups in other countries, just because they too are also Muslim. The scope of comparison/competition in strategies to improve social identity is both increased to include all Muslims, and reduced to include all non-Muslims as outgroups, irrespective of the diversity in both sets of groups.

When Management Styles of Group Memberships Clash

Management styles are variable in their cognitive complexity. This may be influenced and mediated by context, and individual differences, particularly in terms of cognitive resources, motivations, and emotions (Roccas & Brewer 2002; Brewer & Pierce 2005).

A general need for closure and intolerance to ambiguity and uncertainty is likely to influence an individual towards *less* complex structures that either ignore or exclude incompatible group memberships in order to maintain clear and definitive group boundaries. Stress and anxiety (arguably emotions present when an individual believes their ingroup to be threatened), renders cognitive resources diminished, which may lead to the ingroup becoming dominant because it is perceived to be threatened, and clearly defined in terms of ingroup-outgroup boundaries as there are less resources available to the individual to manage other social identities (e.g. Roccas & Brewer, 2002; Brewer & Pierce, 2005).

Experiences of discriminatory counter-terrorism policies (i.e. which may include being seen as a potential terrorist by non-Muslims), and witnessing the suffering of many Muslim civilians in the war on terror through media outlets or propaganda, may reduce the cognitive capacity for complexity in management styles. Individuals with a preference towards more complex social identity management styles pre-9/11 and 7/7, may be increasingly inclined towards *less* cognitive complexity as a result of reactions to the attacks by policy-makers, and the general public. In the Beeston community; "People feel they have been under siege and unjustifiably pointed the finger at" (Aushad Chaudhry in, BBC 2006b). This decreasing complexity might be due to: increasing societal tensions, and the stress and anxiety of witnessing injustice, oppression, and death to Muslims through propaganda and news programs. Personal experiences of trauma related to group membership (such as being targeted in counter-terrorism policies because of being 'Muslim-looking') might also decrease the capacity for more complex management styles thereby facilitating indirectly, identification with the Muslim Umma.

Social Identity Complexity and Identification with the Muslim Umma

The dominance strategy facilitates identification with the Muslim Umma in the manner promoted by Al-Qaeda-type groups. The intersection strategy is important because it

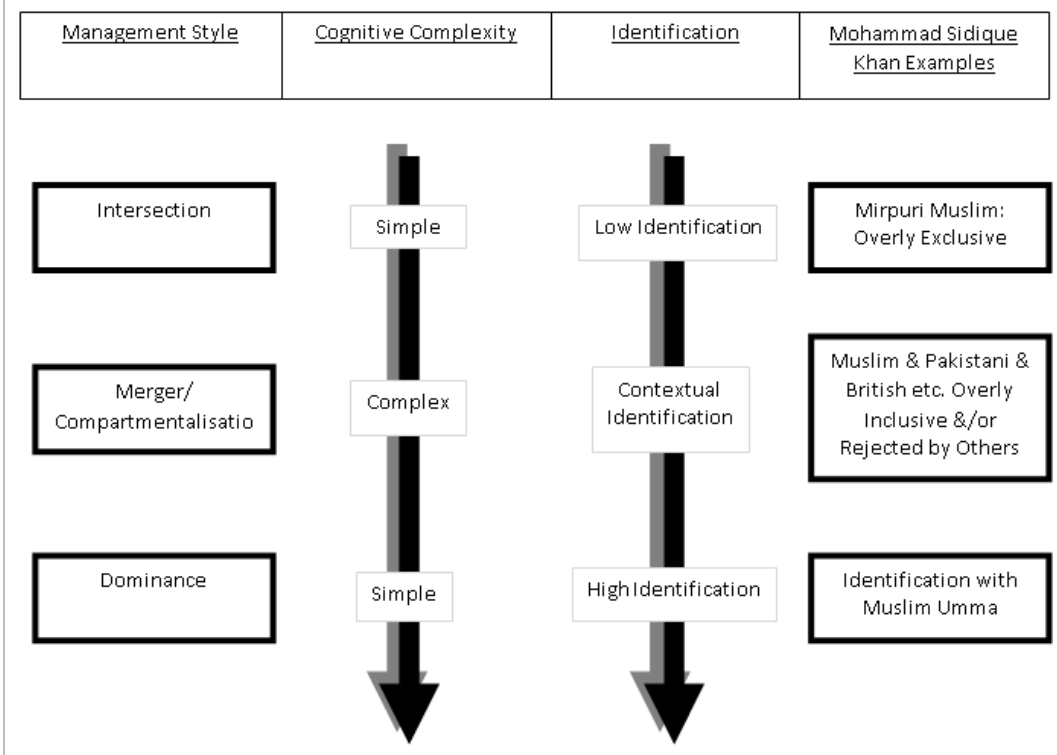
may begin to explain *why/how* torn identities may come about in the first place (e.g. elder Muslims identifying with traditional/tribal Islam with cultural roots that excludes Western Muslims). Intersection, compartmentalisation, and merger strategies may also provide some insight into the way different management styles might *not* promote sole identification with Umma, which may in turn prevent radicalisation because that fundamental identification with one group to the exclusion of all others, is missing. However, given that context is always relevant and fluid, it is unlikely that the use of these strategies will prevent identification with the Umma, or radicalisation at some other point in time.

The oversimplified, overly exclusive intersected identity of the elders in the UK, and the incompatibility that many young British Muslims experience with this highly exclusive group may push them towards compartmentalisation, or even merger strategies (Figure 13). This may explain why many young British Muslims pursue individual mobility strategies that see them adopt more Western influences (including drinking alcohol, taking drugs, going to nightclubs etc.) (Malik 2013; Mirza et al. 2007). They move away from the overly simple and exclusive intersection management style to compartmentalisation, which allows them to embody different group memberships according to different contexts.

The merger style may be appealing where the ingroup consists of many different ingroups and is therefore highly inclusive. However, experiences of racism, and other group-based distinctions (which by their very nature, are excluding) have the potential to encourage identification *away* from similarly exclusive groups, and towards dominance of a particular group, which in the form of Islam, has the effect of smoothing over these otherwise differentiating differences (Figure 13). Merger or compartmentalised management styles may offer relief from overly exclusive intersection identities, but may not solve the problem of identification. Hussain Butt for instance, noted in an interview: "When I went to Pakistan, I was rejected. And when I came back to Britain, I never felt like I fitted in to the wider white British

community. And you've got to remember that a lot of our parents didn't want us to fit into the British community" (Malik 2007). Similarly, according to Omar Bakri, "Adebolajo had been particularly impressed that Islam was brotherhood between all races "whites, black and Arabs" (Botelho & Cruickshank 2013). The point is that in searching for inclusivity (acceptance into a less tightly defined group), Khan and others are inevitably confronted with exclusivity (on the basis of their other group memberships, i.e. race, religion, nationality). Attempts to redress torn identity caused by intersection, may not be successful if others exclude them. This may be why the idea of the Muslim Umma as promoted by Al Qaeda type groups, is so appealing to such individuals.

Figure 13. Cognitive Complexity, Identification, and Radicalisation



The dominance management style allows young Muslim men like Khan to think of themselves, and other Muslims as a whole and reasonably homogenous ingroup, rather than the heterogeneous and sprawling group that it really is (as evinced by his earlier struggles to feel as though he actually fit the model of being Muslim according to his family and elders). Dominance is more complex because it is *more* inclusive. Therefore, identification with the Muslim Umma is also *more* complex than identification with two overlapping groups (i.e. British or tribal Muslim).

For Islamists who seek to broaden the Muslim ingroup by demolishing the boundaries established by tradition, race, and nationality, the intersect approach is too simplistic, and too restrictive. These individuals seek *more* complexity in the way they perceive their ingroup in the early stages of identification with the Umma, not less, despite the associate propensity towards oversimplified categorical worldviews of the evil West and the innocent Muslims (e.g. Moghaddam 2005b; Horgan 2008; McCauley & Moskalenko 2008). This oversimplified categorical worldview can only occur once the ingroup and outgroups are more clearly identifiable and definable.

Different ways of managing multiple social identities may account for some of the variation in identification seen in those who become involved in terrorism, at both early and latter stages of the radicalisation process. Those who are capable (or have a preference) towards merger structures will be unlikely to engage in identification with only one group, irrespective of how large and diverse it is, although they may identify with the suffering of Muslims (e.g. by being believers of God, or because 'we are all human'). However, the difference between an individual who identifies with all Muslims as part of a merger structure, and an individual who identifies with all Muslims as part of a dominance structure, is that for the latter, the outgroup is well defined in the sense that people are either Muslim or they are not, whereas for the former, the boundaries between 'us' and 'not us' are highly blurred. Nevertheless, there may be certain stressors associated with being Muslim in the West, particularly in the post-9/11 and 7/7 era that may inhibit the capacity for cognitive complexity thereby influencing the way in which torn identities are managed.

Identification with the Suffering of the Muslim Umma through Identity Fusion

An important feature in involvement in terrorism is some kind of catalyst that triggers this move. Perceived brutality and injustice to members of the Muslim Umma are the main triggers to violence and include Western foreign policy (Silke 2008; Precht 2007; Wiktorowicz 2003). As Silke notes, violence and injustice need not be experienced personally (or through friends and family), but can motivate individuals towards violence vicariously, via exposure to propaganda (Silke 2008). It is suggested here that social identity links individuals to the Muslim group, and that identification with the Muslim group via saliency, a lack of permeability, the dominance of that group membership, and *the perception that change is possible* enhances the capacity of individuals to not only identify with the Muslim Umma vicariously, but consider involvement in some kind of activism. Although perceptions of insecurity of status quo are required for the social change strategy to be pursued, social change need not lead to terrorism, as evinced by the different behavioural strategies utilised by the terrorists themselves, which included fundraising, recruitment and radicalisation of others, preaching and protesting, and training and (attempts to) fight abroad.

Given the variable routes in the social identity process (where perceptions of saliency, permeability, and security of social identities differ across individuals), and the different ways to manage multiple group memberships (with the dominance management style providing individuals with the greatest capacity for identifying with the Muslim Umma), it might be that these different routes explain why most people do not turn to *violence*, perhaps despite being exposed to, or perceiving injustice. However, given that this chapter has managed to provide examples gleaned from the lives of terrorists for each of these features, there are likely to be other features of terrorist's lives that might be associated with the progression towards violence. For instance, "travel for training or combat also provides a catalyst within the

radicalisation process" (Cilluffo et al. 2010, p.30). Group bonding and local training camps such as activities like paintballing, and white water rafting may also act as vetting opportunities and events to enhance the commitment of members of the group (Precht 2007). The final section of this chapter proposes that an additional level of identification is required to explain why these individuals would eventually go on to perform acts of terrorism: identification with the *suffering* of the Umma.

Identity Fusion

This section proposes that the social-evolutionary psychological theory of identity fusion may shed some light on this phenomenon (Swann et al. 2012). Identity fusion occurs when an individual experiences the boundary between self and ingroup-other as blurred, leading to the group becoming perceived as "functionally equivalent with the personal self" (Swann et al. 2009, p.995). Fusion to a group can occur at a local level (within a small group of closely bonded others, such as kin, or a small team of soldiers, or a terrorist cell), and at an extended level (nations, races, religions) (Gómez, Morales, et al. 2011). SIT however, suggests that identification with any social group occurs on a sliding scale in which group membership becomes the primary identity, with the personal identity taking a back seat, in intergroup relations (Turner et al. 1987). Whilst it is difficult to truly tease apart this so-called "extended fusion" (where fusion occurs for individuals to a wider, not personally known group, such as a nation, or a religion) from a salient social identity, the concept of identity fusion explains the notion of saliency to a better degree than does the self-esteem, or self-concept hypothesis proposed by social identity theorists (Reeve & Johnson 2013).

The concept of identity fusion is a new idea in psychology that is gaining traction with large scale projects directed by leading academics in the field (Whitehouse 2012). Although the theory is somewhat controversial, it is an important and much needed addition to SIT that may offer new insights which could be especially relevant and exciting for shedding light on the identification process which is crucial to our capacity

to understand involvement in terrorism (Whitehouse 2013). According to identity fusion theory, individuals organise their personal agency on the basis of an important group and thoughts and behaviours are typically geared towards the group, rather than the self (Swann et al. 2012). This is because whilst they internalise the qualities, values, and norms, of the group, they also retain and utilise their own personal qualities and values (Swann, Gómez, Huici, et al. 2010). It is this type of identification that Swann et al. believe is responsible for the advocacy and participation in behaviours that benefit the group, including those that carry high personal costs, such as suicide terrorism, and other types of costly altruistic acts (Swann, Gómez, Dovidio, et al. 2010).

Importantly, Swann et al. suggest that because of the influence of personal agency, the expression of behaviour can be highly variable across individuals and groups (Gómez, Morales, et al. 2011). Although Swann et al. (2010) make a more general theoretical claim, most specifically with regards to extreme pro-group behaviour, it is has been suggested elsewhere that fusion may offer useful insight into understanding how terrorist groups might bond through shared suffering (Reeve 2014). This section builds on the concept of identity fusion by considering how it might occur between an individual and the Muslim Umma, and how particular factors of the lives of would-be terrorists might influence the perception and projection of Muslim suffering.

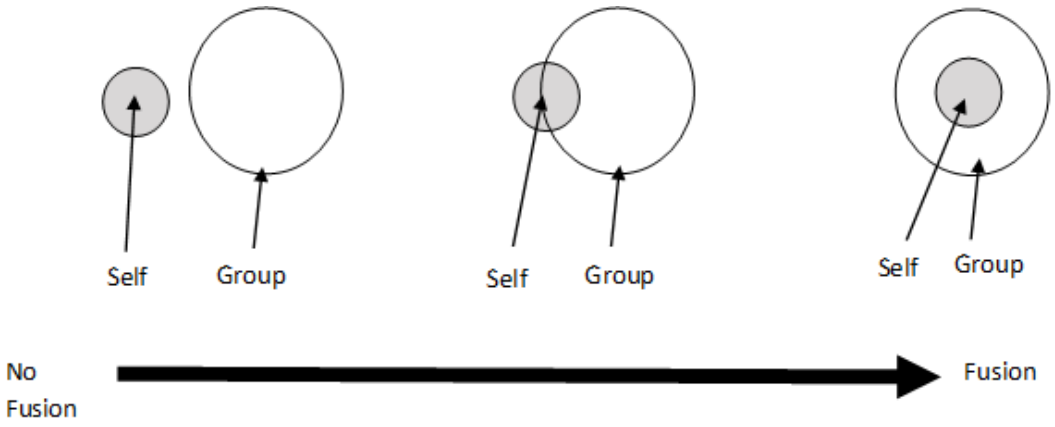
The mechanism of identity fusion may have evolved as a means of enabling cooperation and altruism within a group that would have initially been made up of tightly bonded kin, and non-kin members whose survival and fitness was intricately interlinked (Swann et al. 2009). Over time, these groups would have developed mechanisms to ensure the continuation of this cooperation (including signalling, norms, etc.) (e.g. Henrich 2009; Gintis et al. 2001; Sosis 2004; Sosis & Alcorta 2003). Thus, fusion could continue to occur at a local level, and/or an extended level, but would be mediated by context. A particular tribe might fight on behalf of a wider ingroup because they are fused not only to their local tribe, but also to their wider tribal-band. Such alliances are common in, for example, the Yąnomamö (Chagnon

1968; Chagnon 1983). The remainder of this chapter will briefly overview how fusion might form for these individuals, and the way it might influence perceptions of context, and behavioural responses to intergroup threat, before going on to apply each of these features to the lives of Khan and Adebolajo.

A Visceral Sense of Oneness with the Group

Identity fusion is best described as "a visceral sense of oneness with others in one's group... For the fused individual, the boundary between the personal and social self is porous – activation of one's sense of personal self also serves to activate feelings about the social self" (Whitehouse 2013, p.282). Group membership is in this case perceived in terms of "a family consisting of members who all share a common bond... it may engender a powerful sense of connectedness wherein fused persons come to believe that they and other group members are functionally equivalent... it may foster the perception of reciprocal strength: Just as they believe that they will do anything for other group members, so, too, do they believe that other group members will do the same" (Gómez, Brooks, et al. 2011, p.920). For those who are fused with their ingroups, the self and the group completely overlap (Figure 14). This shared essence and oneness leads fused individuals to *not* distinguish between self and group identities when either is threatened; both are experienced synonymously (Swann, Gómez, Dovidio, et al. 2010, p.1176). Highly salient experiences that are experienced by a set of group members therefore drive the perception of fusion between self and other.

Figure 14 Modified Identity Fusion measure



There are certain characteristics that fused individuals likely possess which are important to predicting extreme pro-group behaviour, such as terrorism. For example, "a sense of moral agency", motivation "to see that justice for the in-group is achieved", and also a strong desire to be personally responsible for implementing that justice (Swann, Gómez, Dovidio, et al. 2010, p.1180). It is this sense of moral agency that for fused individuals is translated into action that leads them to self-sacrifice for the ingroup, and aggress against outgroups (Swann, Gómez, Dovidio, et al. 2010, p.1182).

Conditions that Enable Fusion

Experiences such as shared trauma, which includes enduring ritual suffering, or being under physical threat of death, such as in war, can be especially 'fusing.' "Dysphoric" rituals (that create discomfort or suffering) are: "The forces shaping one's own uniquely personal experiences [that] are felt to be shared by a special cohort of others, causing group members who have undergone these rituals to 'fuse'" (Whitehouse 2013, p.824). Rituals are relevant to fusion because they often induce particularly high arousal states (e.g. pain, ecstasy, trances eliciting different physiological states inducing emotional valence to particular situations), and can occur in modern as well as indigenous societies (Sosis & Alcorta 2003; Atran & Norenzayan 2005; Atran

2002). Dysphoria can be experienced through hardships (including painful rituals), and especially from intense training and the traumatic experience of threat to life and limb during war which are especially powerful features that facilitate fusion in combative (i.e. guerrilla groups, gangs, terrorist training and foreign fighting), and military units (Whitehouse 2013, p.289). Rituals also provide honest information about the individuals' commitment, motivations, and emotional states, thereby communicating that commitment, and promoting coordination and stability within the group (Henrich 2009).

Fused individuals "are so deeply immersed in the group that, for them, being excluded from the group is no more tenable than being excluded from themselves.... they possess a strong sense of personal agency that is organized around their group membership" (Gómez, Morales, et al. 2011, p.1583). This is relevant and important with respect to the torn identities experienced from both within the Muslim group (i.e. exclusion from/rejection of tribal/traditional Islam), and from the Western outgroup (i.e. racial/religious discrimination/segregation). Ostracism from an outgroup is likely to be experienced as prejudice (such as when an individual is rejected from a group on the basis of race, or religion should those groups be salient and fused for an individual). However, this perception will be experienced whether or not the rejection is based on personal or group-based characteristics because a fused individual does not differentiate between the two.

Personal experiences of prejudice are projected onto the wider ingroup enabling a sense of shared suffering to occur (Whitehouse 2013, p.286). Such prejudices may be experienced similarly and vicariously through the experiences of fellow group members. Prejudice and other group-membership-based experiences are then interpreted through the lens of that particular group membership (Reeve & Johnson, 2013). Ostracism from within the ingroup will lead to non-fused individuals distancing themselves from that group, but will not deter fused persons from maintaining and supporting that membership (Gómez, Morales, et al. 2011)

Implications of Identity Fusion

The fused individuals' personal motivations and individual agency are inherently wrapped up with the group (Swann, Gómez, Dovidio, et al. 2010, p.1177). This occurs whether or not he/she experiences ostracism. Reponses to ostracism are likely to include increased advocating and willingness to act in extreme pro-group ways, including self-sacrifice and outgroup hostility, the latter of which is more likely to occur when ostracism hails from the outgroup (Gómez, Morales, et al. 2011). When ostracism hails from within the ingroup, fused individuals may attempt to regain certainty about their position within the ingroup which may also be achieved by advocating and expressing willingness to perform extreme pro-group behaviour, including self-sacrifice, and hostility towards outgroups, in addition to enhanced adherence to fundamentalist religious norms or beliefs (Schaafsma & Williams 2012; Gómez, Morales, et al. 2011).

There are several types of behaviours that can be predicted by identity fusion that would not be expected from a non-fused individual even if they identify with the group in the conventional SIT sense. Fusion increases commitment and loyalty to the group, particularly if it is under attack (or status is under threat). Threats to the self or to the group are experienced synonymously for fused individuals. Thus they are more likely to feel that others suffer the way they do, and that they suffer the way other members of the ingroup do. Fused individuals will advocate, endorse and be willing to engage in acts that benefit the ingroup, even if such acts are extreme and detrimental to other groups, or their own personal selves are at risk. Self-sacrifice and outgroup directed hostility are most likely advocated if the ingroup is threatened by a particular set of outgroup actors (i.e. those who represent a threat to the ingroup).

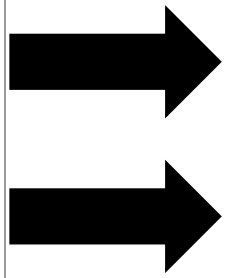
Fusion Fighters: The Suffering Self Suffers for the Group

Figure 15 presents the key features of identity fusion that can be usefully applied to terrorism. Terrorists often display a sense of personal responsibility (Horgan 2008; McCauley & Moskalenko 2011). The combination of this personal agency and fusion to a group (that occurs where rituals, and experiences of trauma work to bind individuals) leads to individual personal agency being wrapped up in the goals and aspirations of the group in the event of experiences such as ostracism and threat. It is suggested here that fusion may begin to account for the way in which terrorists often lead highly politicised lives, typically placing the group's goals and aspirations before their own personal goals and aspirations (e.g. McCauley & Moskalenko 2008).

The remainder of this chapter will illustrate how identity fusion might be found in the lives of the 7/7 bombers, and Lee Rigby killers, with specific focus on Khan and Adebolajo. These individuals typically portrayed personal responsibility and justice seeking prior to their radicalisation, and engaged in fusion-facilitating behaviours during their radicalisation. Also during their radicalisation, particularly in the early stages, these individuals experienced ostracism. Their behaviour became increasingly pro-group, and would go on to include costly-to-self actions, and outgroup hostility (mostly with regards to criminal activity and travelling abroad to fight). These latter experiences, it is argued here, in combination with fusion, may have enabled identification with the Umma to occur on the basis of suffering, as the individual became more personally at risk as a result of their behavioural choice.

Figure 15 Fusion and Terrorism

Features of Fusion		**Fusion**	**Events**
Individual	Personal Agency Personal Responsibility Justice-seeking	Porous Self/Group Boundaries	Ostracism by the Outgroup Ostracism by the Ingroup Threat to Self/Group
Group	Rituals Training Suffering*		



Expected Behavioural Outcomes	**Real Life Examples (Khan and Adebolajo)**
Personal goals and aspirations become one with the Groups' goals and aspirations.	The personal becomes politicised.
Loyalty, commitment to the ingroup Endure, advocate, willingness to perpetrate: Extreme pro-group behaviour Self-sacrifice Outgroup hostility	Robes, Rituals, chanting, prayers, Fundraising/ charity, Preaching/protests, Calling for jihad in Iraq, Afghanistan, Syria, etc. Personal goal to perform jihad abroad Train/fight abroad/terrorism*

* There may be a feedback loop between the extreme pro-group behavioural outcome of training/fighting and/or committing acts of terrorism, and suffering as a group which facilitates fusion in the first place. Shared suffering can facilitate fusion (all other features accounted for) which can lead to extreme pro-group behaviour which may include self-sacrifice and outgroup hostility. If such behaviours are associated with criminal activity, or violence, the individual may perceive themselves (probably rightly, if they intent to commit an act of terrorism) to be at increased threat of suffering (i.e. arrest, imprisonment, death, torture), which may enhance the perception of threat to the group.

Enabling Fusion: Training and Fighting

Although not initially fused, Khan and Adebolajo would go on to identify very strongly with the Muslim group. The increased saliency of identification with the Muslim group may have been partly due to attempts to a) experience the Muslim group in a positive way despite perceiving low status relative to other groups, and b) remedy torn identities by way of promoting the Muslim group membership as dominant.[17] Along the way, these individuals exhibited involvement in some behaviours associated with achieving fusion with a group. Specifically, each individual attended Mosque often, and prayed very frequently (Williams 2009; Gardham 2011; Dailymail 2005; Craig 2005; Simpson & Hamilton 2013). Although not necessarily dysphoric, prayer and ritual can serve to bond individuals (Whitehouse 2013; Sosis 2004). Adebolajo was said to have engaged in Islamic chanting which may have had an influence on arousal states (e.g. Sosis & Alcorta 2003; Milmo & Duggan 2013; Pilditch 2013; Simpson & Hamilton 2013). Khan and Tanweer went to Pakistan and Afghanistan to train and fight, and Adebolajo had sought to join al Shabab and fight in Somalia (BBC 2005; Gardham 2011; Hamilton et al. 2013).

Many individuals who become involved in terrorist attacks in the West, have travelled to fight abroad, or have at least attempted to (Hegghammer 2010; Hegghammer 2013). The decision to fight abroad presumably entails identification with the Muslim group, which is likely to be influenced by the embracing of violent extremist Islamist ideology and may be preceded or associated with jihadist training (Hegghammer 2010). Training is important whether it occurs in the West or abroad, and is often considered a catalyst that facilitates and enhances group bondedness, group loyalty, commitment to the group, whilst also increasing alienation from society (Precht 2007; Cilluffo et al. 2010). Training abroad has a similar effect, and includes religious teachings, reinforcement of ideology, some paramilitary training, and perhaps but not always bomb making and counter-surveillance tuition (Precht 2007; Hegghammer 2010; Cilluffo et al. 2010). It also facilitates fusion with a local group. An individual

[17] With no small helping by pan-Islamist ideology.

becomes fused to the small group he trains/fights with, similar to the way an army unit trains and fights (Whitehouse 2013).

Participation in actual battle may enhance the military prowess of an individual. But through fusion, it may lead an individual who experiences such hardships and suffering as being existentially at risk, to project perceptions of that threat onto the worldwide Umma, in a way that is tangible and life-threateningly real (Malik 2014; Evans et al. 2014; Gorman et al. 2013; Hegghammer 2010; MI5 n.d.; Swann, Gómez, Huici, et al. 2010). His own personal existential threat is one with the existential threat to the Muslim group, because of his fusion to it. For instance, a YouTube video published by Rayat al Tawheed features a young British man speaking of "the bullets and the war crafts flying above our heads, and the mortars getting thrown at us, and the tanks coming towards us" (Bakr 2014). If there are no boundaries between the fused individual and other members of his group, the threat he feels is the threat he believes them to be at risk of also. It is perhaps in combination with the improved fighting skills, reinforced ideology, and enhanced connections to jihadist networks, that identity fusion may influence an individuals' perceptions of a war against Islam/Muslims if they return home.

Individuals who become fused to a group often have a strong sense of personal agency and responsibility towards their group. In Khan's martyrdom video he expresses this when he says: "just as I am directly responsible for protecting and avenging my Muslim brothers and sisters…" (Khan 2013). Even prior to his radicalisation however, he was considered a pillar in his community and had positions of responsibility in his role as youth mentor, and was generally looked up to in his local community as a "father figure" (Addley 2011; Gardham 2011; Malik 2007). Similarly, friends considered Hussain as "someone [to be] looked up to. He was a gentle giant" (Dailymail 2005). Even as a youth, Adebolajo "wanted something to stick up for – for example, if there was a fight in school, he would be in there trying to stick up for the little guy" (Owens & Sharp 2013, p.8). As a Muslim, "He was dedicated to Islam and wanted to put himself at its service and defend it," (Botelho & Cruickshank 2013).

This personal agency, responsibility, and justice seeking is an important individual feature of those who become fused to a group and as a consequence, personal goals become entwined with the goals of the group. This aspect of identity fusion may shed light on *why* terrorist individuals seem to lead increasingly politicised lives (e.g. McCauley & Moskalenko 2008). For instance, Khan was observed by a guide on one of the excursions arranged for the youth group:

> *"Every opportunity to bring Islam into a conversation would be manipulated, anything at all. We were sat in a cave, for instance, it was very cold and dark, and he used that as an opportunity to explain to me how the light of Islam could come into my life, and it was constant, it was just a constant barrage of these kinds of things."*
> (Mark Hargrieves in BBC, 2011).

Perhaps an even more telling example of this highly politicised-self, (or personal agency wrapped in the group) is in his video to his daughter. He tells her: "I wish I could have been part of your life… [but I'm] doing what I'm doing for the sake of Islam" (Khan 2013). His intent to give up his own life, despite having a promising career, a home, and a loving family, whom he clearly loved in return, came first, even though he was obviously upset at the prospect of leaving his life. This is perhaps the best example of an individual who is highly politicised and puts what he sees to be in the wider groups' best interest, before that of his own, or his family. The concept of identity fusion may go some way to explaining how/why this might be.

The Suffering Group

Muslim suffering in conflict zones is emphasised by Pan-Islamists, who blame the West for this suffering, and also use it to enhance a sense of oneness within the Muslim community worldwide (Neumann 2008a). The suffering that a Western Muslim might endure in his home country because of his group membership, provides the link between his personal group-based-experiences, and the suffering of Muslims in Iraq,

Afghanistan, Somalia, and Syria. In Tanweer's martyrdom video, al-Zawahiri tells Muslims: "the Crusader West in its entirety is hostile to you… and the reason is that you are Muslim" (Al-Zawahiri in Tanweer 2012). Suffering Muslims in areas of conflict and in the West are always referred to as: "our brothers/sisters/mothers/children" as if they were blood relations", thereby promoting a sense of familial bondedness (Hegghammer 2010, p.74; Gómez, Brooks, et al. 2011). Indeed, Tanweer himself painted a picture of kinship between all Muslims: "You [the West] will never experience peace, until our children in Palestine, mothers and sisters in Kashmir, our brothers in Afghanistan and Iraq, feel peace" (Tanweer 2012).

Pan-Islamist ideology propagated by Al-Qaeda type groups is well placed to exploit the ostracism associated with being an ethnic minority and/or Muslim (outgroup ostracism) in the UK, and being a Muslim who is westernised (ingroup ostracism). Ostracism can be understood in terms of torn identities. For instance, every member of the 7/7 bombers, and both Adebowale and Adebolajo had experienced some kind of prejudice and racism prior to becoming radicalised. However, at these earlier stages, these individuals were all (with the exception of Tanweer) attempting individual mobility because of a lack of saliency, also indicating a lack of fusion at this time. Both Khan and Hussain were Westernised and rejected Islam and its rules, preferring instead to take drugs, drink alcohol etc. Lindsay, Adebowale, and Adebolajo had all experienced racism before becoming Muslim, and afterwards seemed preoccupied with it. Lindsay was allegedly: "always going on about racism. He thought all white people were trash and said he was going to get them all on drugs to kill them off" (Bradley 2005). In an interview with Omar Bakri in discussion about early meetings with Adebolajo, he said "Adebolajo had been particularly impressed that Islam was a brotherhood between all races 'whites, back and Arab' (Botelho & Cruickshank 2013).

Ostracism for the remaining 7/7 bombers seems to be more complicated because it came from both inside and outside of the Muslim group. For instance, despite being more Westernised, Khan and Hussain were unlikely to be fully accepted as part of the

Western group because of their race and familial origin. Additionally, their family, friends, and community would still perceive them to be Muslim, whether they were 'good' Muslims or not. In a way, saliency for the Muslim group is enforced by ostracism from the outgroup *and* the ingroup. Yet, ostracism from the ingroup – in the form of prejudice towards their being Westernised and rejecting tribal Islam seems to have influenced Khan at least, towards a specific type of Islam that was inclusive of the very features of himself that seemed to be rejected by both the ostracising outgroup *and* the ostracising ingroup (specifically, Islamism promotes a dominant Muslim identity management style).

The Suffering Self: Identity Fusion and Catalysts for Violence

There are certain behavioural outcomes that might be expected from a fused individual. Typically, extreme behaviours that benefit the ingroup, and include enduring some personal cost, and possibly some outgroup hostility, depending on context. Pro-group behaviours (that is not so extreme as to include violence) exhibited by the 7/7 bombers, and Lee Rigby killers include preaching and protesting (which was mainly performed by the converts, Lindsay, Adebowale, and Adebolajo) (Bond 2013; Milmo & Duggan 2013; Gladdis & Greenwood 2013; Leppard et al. 2013; Robinson 2013b; Martin & Ledwith 2013). The 7/7 bombers (minus Lindsay) were also involved in an Islamic charity bookshop (which may have been distributing extremist propaganda), and Khan had also been actively involved in fraud in his attempts to raise money for the Pakistani Mujahidin (Gardham 2011; Craig 2005; Channel 4 News 2007). Although a criminal activity, this again might be seen in terms of extreme pro-group behaviour given that Khan risked being arrested and imprisoned with this behaviour, yet he intended to help the Pakistani Mujahidin nonetheless, presumably because he believed it would help the Muslim Umma. In his days with the Mullah boys, Khan helped young Muslims in the grip of addiction, and with the Mullah Boys represented a real threat to other gangs, including drug dealers in Beeston. This is an example of extreme pro-group behaviour because these individuals

would have been personally at risk, and they risked that safety (both with police, with drug addled youths, and with gangsters) to help members of the ingroup.

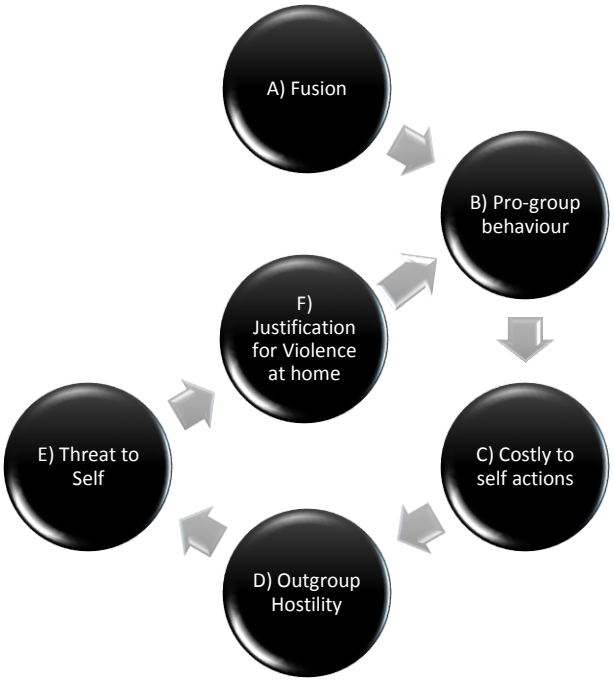
The decision to travel to train, and fight abroad might also be considered a pro-group behavioural outcome. Khan's final journey to Pakistan had been to wage jihad in Afghanistan and he did not seem to think he would return to his family. Despite the likely cost (he believed he would not see his daughter grow up), he chose to go to war in Afghanistan (defending the ingroup from the outgroup). There may be some kind of feedback loop that stems from initial *identification* and *fusion* with the extended group (Muslim Umma), and the *consequences* of particular pro-group actions, which may increase identification with the *suffering* of the ingroup (Figure 16). For instance, initial fusion increases pro-group behaviour, which may include costly-to-self behaviours and outgroup hostility. Khan's increasing involvement in crime to aid the Pakistani Mujahidin (fraud), and his decision to travel to Afghanistan to commit jihad, put him in a position of increasing risk personally. He was being observed by MI5 due to his ties with other terrorists (i.e. Omar Kyam) during his time as a "petty fraudster" (Malik 2007). And he had been warned of the likely implications of surveillance due to his travels to Pakistan:

> *"Every time you come back, you are going to make yourself hotter because you're a youth travelling into Pakistan and out of Pakistan and they watch for that. So when you come back, and when you link up with some brothers, here, they become hot as well. And when you meet brothers involved in financing it makes them hot"*
>
> (Channel 4 News 2007).

Similarly, Adebolajo had been arrested for assaulting a police officer during a protest (Leppard et al. 2013). He claims that his imprisonment for this was unjust and he realised then that protesting was a useless endeavour (White 2013). Indeed, Adebolajo had been known to police and security services for approximately ten years prior to the attack on Lee Rigby (Gladdis & Greenwood 2013). Both Khan's, and Adebolajo's increasingly extreme pro-group behaviour would lead to their attempts to travel abroad

to wage jihad. Whilst Khan was allegedly successful in this intention (Pakistan, Afghanistan), Adebolajo, failed in this endeavour when he was captured, arrested and detained by Kenyan policy before he could reach Somalia and make contact with al Shabab (Glover et al. 2013; Hamilton et al. 2013). During this time, he claims to have been threatened, and tortured and that MI5 was complicit in this (Bond 2013; Quinn 2013). On his return to the UK, Adebolajo and his family were allegedly harassed by MI5 who wanted him to turn infiltrator and informant. According to his brother, Adebolajo's personality changed quite drastically after this experience (Glover et al. 2013).

Figure 16 Fusion facilitates identification with the suffering of the Muslim Umma



These kinds of experiences – that occur both as a consequence of behaviours related to fusion to the extended group, also work to enhance identification with the suffering of the Muslim Umma through *personal experiences of threat* (Figure 16). Each element of Figure 16 (labelled A-F) represents an aspect of identity fusion as it is conceived of here as a way of facilitating identification with the suffering of the Muslim Umma. These individuals pursue behaviours that they consider to be

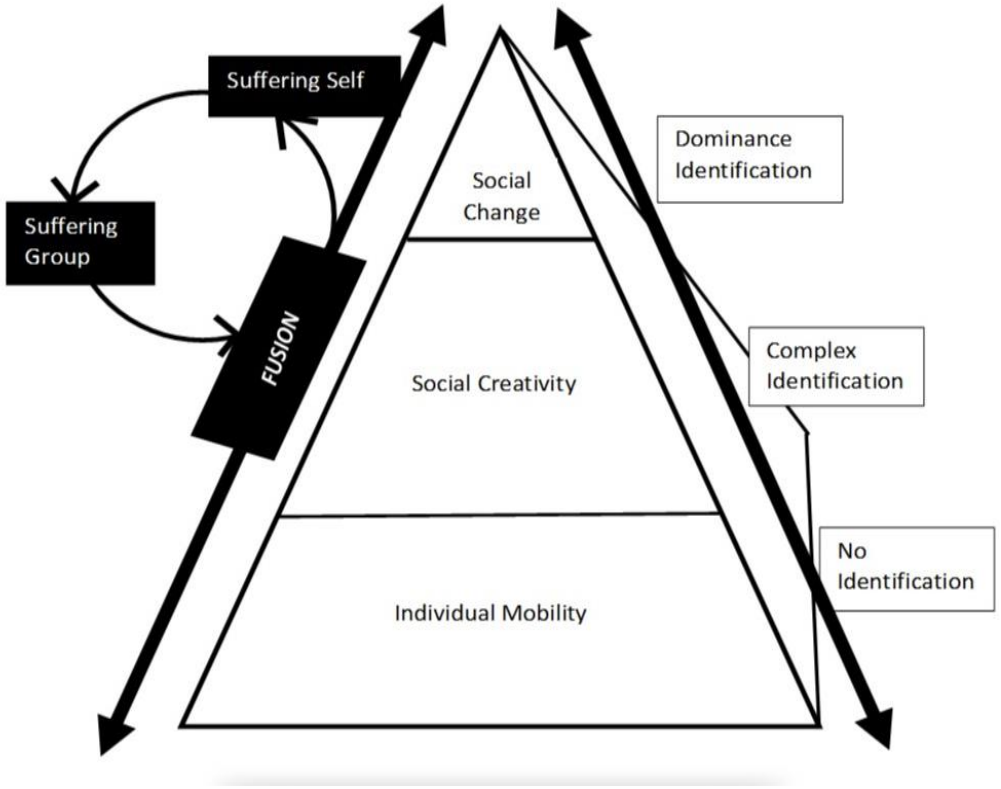
beneficial to the Muslim group on the basis of fusion to that group, and perceptions of threat (Figure 16B). Where those behaviours also incur an individual cost (Figure 16C), most likely by way of outgroup hostility (Figure 16D) (specifically, perceived mistreatment by police/security services, and training/fighting abroad), or even the decision to commit illegal and/or violent acts, threats to self are apparent (Figure 16E). These features of fusion and the experiences of individuals who become increasingly involved in such pro-group, self-sacrificing, and hostile (to outgroup) behaviours, may increase the likelihood that violence or terrorism at home is justified by enhancing the perception that there is an existential threat towards Muslims (Figure 16F) (e.g. Reeve 2014).

The concept of identity fusion may therefore, begin to shed light on the decision to commit terrorism in the West by providing a lens through which to understand how an individual may identify personally with the suffering of the Muslim Umma. This personal-group-based suffering may enhance the perception that there is a very real, urgent and existential threat towards Muslims because of the porous boundaries that fusion to a group facilitates in an individual. Both Khan and Adebolajo had chosen to fight abroad indicating that, at this time, both saw justification for waging jihad in countries in which conflict already existed. It may be that the experiences they had abroad acted as triggers or catalysts for the perception that violence is just, necessary and urgent. With fusion, threats to personal selves are perceived synonymously as threats towards the wider ingroup (Swann, Gómez, Dovidio, et al. 2010). If Khan and Adebolajo perceived themselves to be existentially at risk (because of experienced fighting abroad, or consequences of being arrested, detained and harassed by security services at home), and they experiences identity fusion, it may be that these threats were perceived and experienced synonymously, as threats to the group also. Their own individual suffering (despite being the result of their decision to behave in ways illegal and/or violent) provided them with identification with the perceived suffering of the worldwide Umma, via fusion.

Lethal Mind-set Model: Identification and Radicalisation from a Social Identity Perspective

Figure 17 depicts the 'Identification Pyramid', which is a more detailed representation of Face 2 of the pyramid model proposed in Chapter 1. The body of the pyramid belongs to features of SIT, particularly the strategies for social comparison, although the conditions that trigger pursuing these strategies are relevant and present at every level. Social change, although not necessarily violent (or even discriminatory) in nature occurs at the top of the pyramid. This is not reflective of any assumption or statement made in SIT about the likelihood of social change occurring relative to other strategies, but is placed here in the context of terrorism, which is also placed at the top of the radicalisation pyramid. This aspect also includes non-violent actions associated with terrorism, such as protesting. The process of social identity occurs not just at the pre-radicalisation stage, but also throughout the entire process of radicalisation. It occurs when an individual perceives themselves to be British, or Muslim, or British Muslim, as a Wahhibi Mullah Boy, and finally, as a member of the Muslim Umma. The more salient a group is for an individual, the more prominent is its place is the self-concept.

Figure 17 The Process of Identification in Radicalisation from a Social Identity Perspective



The left side of the pyramid shows identification with the Muslim Umma in terms of management of identities. The way in which individuals manage multiple group membership (i.e. whether they promote their Muslim group membership as primary) then has implications for how and what conditions trigger perceptions of negative or threatened Muslim identity. When the Muslim identity is primary and dominant, threats to the Muslim identity experienced by Muslims around the globe may also trigger perceptions of negative/threatened social identity. How an individual manages their identities influences what conditions are perceived as threatening/negative/positive to the ingroup, and therefore influences how social strategies are pursued, including whether terrorist violence towards non-Muslims is acceptable.

The right side of the pyramid depicts the way that identity fusion may influence the process of radicalisation. At the base of the pyramid, no fusion is predicted. This is in line with the lack of identification and individual mobility aspects of the pyramid. These individuals are unlikely to even identify with the Muslim Umma, let alone support or participate in terrorism. The black box with 'fusion' in text represents the conditions that enable fusion to occur. Although these are difficult to trace in the real life examples presented here, religious ritual, training and fighting are very likely to be important fusion enables.

The more personal cost one is willing to invest in pro-group behaviours that may or may not have a detrimental effect on other groups, the more personal risk that individual will experience. This is especially relevant to terrorism as the decision to become more involved in terrorism, whether that involvement is violent or not, puts that individual at risk of being arrested or at least surveilled. The decision to train and/or fight abroad is an even more extreme example of this. An individual may die or be seriously injured, arrested, detained, and/or tortured, in either of these events. Therefore, there may be a feedback loop between fused individuals and their decision to behave in ways that puts them at personal risk, and their experiences of oneness with their fused group that may lead to the perception that the threat they personally experience, is also a threat to the suffering ingroup. It is this personal experience and identification with the *suffering* of the Muslim Umma that may lead to participation in terrorism where the outgroup is clearly identified (rightly or wrongly) as the cause of that suffering. It may be this that extends the final push towards perceptions of conflict and the urgency and justness of a violent response that drives individuals towards committing terrorism.

This chapter has made a case for social identity processes as useful and insightful for understanding the progression from relative indifference towards the Muslim group, and torn identity, to identification with the Muslim Umma, and importantly, identification with the *suffering* of the Muslim Umma. It also sheds light on how and why perceptions of conflict (and justifications for violence) occur via threats to social

identity status, and perceptions threat to self-group (which may well be justified depending on an individual's level of involvement in terrorism) occur. These are important features of radicalisation that are relatively underdeveloped in terrorism literature. However, social identity struggles to adequately explain why groups are so important in the first place. The self-esteem, and self-concept hypotheses cannot explain the very high costs individuals are willing to endure on behalf of the group. Indeed, the motivation for affecting social change is to improve one's *own* social identity status by improving that of the groups'. In this case, social identity cannot explain those who act for social change but will never benefit from it (should it occur), meaning that it struggles to explain (suicide) terrorist behaviour. The theory of identity fusion goes some way to remedy this by emphasising the interdependency of the individual and the group. Further, identity fusion usefully discusses the evolved tendency towards groupishness. To address these limitations, Chapter 4 looks to the evolved psychological mechanism of parochial altruism.

4. Parochial Altruism

> *When two tribes of primeval man, living in the same country, came into competition, if (other circumstances being equal) the one tribe included a great number of courageous, sympathetic and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would succeed better and conquer the other.*
>
> (Darwin 1873, p.156)

Introduction

The goal of this thesis is to shed light on what mechanisms and processes might be involved in radicalisation and terrorism with insights from social and evolutionary psychology. Social identity is useful for addressing particular features of modern group membership (e.g. torn identity, and identification), but fails to adequately explain *why* groups are so important that people are willing to fight and even die for them. Explaining this level of sacrifice on behalf of a group is vital to understand why people participate in terrorism. By rooting intergroup interactions, including conflicts such as terrorism, in our evolutionary past, we can think about what features of human cognition, present in us all, may be important factors in support and involvement in conflict. Understanding the way in which such features may interact with the environment today (i.e. social context), may help shed light on the way that group membership (and social identity) interact with features of the radicalisation process, including terrorist grievances. This is the goal of the current chapter.

The overall argument is that terrorism is a response to the perception of evolutionarily relevant threats to the Muslim Umma. Terrorist grievances are suggested here to be types of conditions that may have triggered aggressive responses (like terrorism) in our ancestors. Such responses are not always violent but *are* always biased towards

the ingroup. This 'groupish' behaviour is argued to be an *adaptation*[18] that developed under strong selection pressures in our evolutionary past to favour ingroups and disfavour outgroups. It is further argued that the proximate mechanism of 'parochial altruism' makes us groupish today, even though it may no longer benefit the genes that give rise to these attitudes and behaviours. Terrorism, therefore, is an example of parochial altruistic behaviour that occurs in response to perceptions of threat towards the Muslim ingroup from the outgroup(s).

Parochial altruism promotes our (ancestral and current) propensity towards groupishness, or put another way, our tendency to bias and favour our ingroups, and disfavour (including aggress against) outgroups. It is a relatively under investigated concept, and the empirical section of this thesis (Chapter 5, and 6) looks at particular features of parochial altruism. Key authors suggest that "Altruism – benefitting fellow group members at a cost to oneself – and parochialism – hostility towards individuals not of one's own ethnic, racial, or other group – are common human behaviours" (Choi & Bowles 2007, p.363). Parochial altruism is triggered in a variety of intergroup contexts. Parochial altruistic responses are not necessarily aggressive. The mere presence of an outgroup may trigger parochial altruistic attitudes and behaviours. The parochial altruism mechanism explains why individuals perceive outgroups as potentially threatening to the ingroup, and display a willingness to fight and die for it. Understanding why and how parochial altruism might have developed in humans may enhance our understanding of the radicalisation process by shedding light on what conditions act as cues to trigger parochial altruism in intergroup contexts, and what behavioural outcomes are predicted in response.

[18] A core mandate of Darwinian natural selection (which will be discussed more later) is that traits that were beneficial to the survival and reproduction ('fitness') of our ancestors were passed on to future generations, explaining in part, why humans today think and behave in the way they do. This is adaptation.

Assumptions

By utilising the evolutionary approach, and parochial altruism specifically, certain assumptions are made about the nature of terrorism that may be rejected by terrorism scholars. For instance, radicalisation is not considered here to be merely an outcome of a perfect storm of personal emotions, perceptions of conflict, ideological indoctrination and socialisation, or identification with a terrorist group (e.g. Horgan 2008; Moghaddam 2005b; Silke 2008; McCauley & Moskalenko 2008; Richardson 2006; Sageman 2008). Rather, features of radicalisation rest on the *capacity* and *tendency* for individuals to a) categorise and adhere to group boundaries, and b) to favour ingroup members to the detriment of outgroups. Some terrorism scholars have questioned the importance of group membership in terrorism (Taylor 2010). Parochial altruism assumes that the individual biases the ingroup (at a cost to themselves), and also at a cost to the outgroup. In this approach, it is not logical to separate the individual from the group analytically, but nor does this mean that the group is the unit of analysis either (which is typically the way terrorism researchers investigate terrorists and terrorist groups, i.e. Sageman, 2004, 2008). The analysis here occurs at the level of the individual-as-a-group-member. Unlike social identity theory, which argues that the need for positive social-self-esteem or self-concept binds us to our groups, the evolutionary approach explains why we have a need to belong in the first place (Tajfel & Turner 1979). The ultimate explanation is that groups enhanced the survival and fitness capacities of our ancestors. Without these groups, our ancestors' chances of survival (and reproduction) were severely hampered, and so the protection of these groups was vital for the individuals within them.

Limitations and Caveats

Some limitations and caveats associated with this approach and concept should be acknowledged at the outset. This thesis considers parochial altruism as a cognitive mechanism, but like most cognitive mechanisms, particularly in evolutionary

psychology, there is no overt directly observable evidence of a parochial altruism mechanism. Rather, it is an assumption. This assumption rests on the notion that a parochial altruism mechanism (or set of mechanisms) was an adaptation that helped our ancestors to survive and prosper during a period (the Pleistocene) in which intergroup conflict was somewhat frequent and lethal (which is another assumption) (Choi & Bowles 2007).

Adaptation is a contested concept, and some believe that too much emphasis is placed on this notion rather than considering alternatives, such as that a behaviour or trait might have developed as a by-product of other adaptations, or behaviours and traits (e.g. Gould & Lewontin 1979). The argument that parochial altruism is an adaptation and not "a by-product of generic cognitive adaptations for classifying the physical world around us" is logical given the intense hostility humans express in intergroup conflict (McDonald et al. 2012, p.671). We do not tend to express somewhat fuzzy indifference or mild dislike for outgroups. As countless battles, crusades, invasions, wars, and genocides attest, the reaction is often somewhat stronger, particularly in certain conditions (which are explored later).

Nevertheless, it is important to recognise the limitations of the evolutionary approach. Our understanding and agreement of what our ancestral environment, was like, and *when* that ancestral environment occurred, is somewhat lacking (Williams 1966; Schmitt & Pilcher 2004). These issues are common criticisms to evolutionary psychology and often invoke the 'just so story' accusation, which is where theoretical propositions are not falsifiable and cannot therefore be considered scientific. Nevertheless, it is one of the strengths of the evolutionary approach, evolutionary psychology especially, that hypotheses can be developed and tested on the basis of evolutionary theory (Barkow et al. 1992). This is what this project does.

The layout of this chapter is as follows. The evolutionary approach, particularly evolutionary psychology is introduced first. Darwinian natural selection, and the on-

going debate about appropriate levels of selection (units of selection in the biological hierarchy: e.g. genes, organisms, groups, and cultures) is presented briefly next. Ancestral group living, including some mechanisms that enabled it is then considered before going on to illustrate some of these features in extremism and radicalisation. The development of the concept of parochial altruism, in terms of the way it has been modelled, defined, and investigated is presented next. Terrorism is then proposed to be an example of (extreme) parochial altruism. Conditions and cues that trigger parochial altruism and expected (parochially altruistic) responses are then described. Terrorist grievances are illustrated in terms of evolutionarily relevant threats that trigger parochial altruism. Face 3 of the Lethal Mind-sets pyramid is then briefly summarised. Next, evolutionary theory is used to explain some of the variation in sensitivity to parochial altruism, before overviewing some of the core predictions that are investigated in the remainder of the thesis.

The Evolutionary Approach

The evolutionary approach is a burgeoning integrative and multidisciplinary approach that brings together anthropology, psychology, biology, archaeology, primatology, zoology, and many more disciplines, under the umbrella of Darwinian principles, and is increasingly being utilised in social and political sciences (Burnham & Johnson 2005; Burnham & Hare 2007; Ginges & Atran 2009; Bowles & Gintis 2004a; Alford & Hibbing 2004; Smirnov et al. 2007; Ginges et al. 2011; Thayer 2008; MacDonald 2001; Barkow et al. 1992; Johnson et al. 2006). There are four basic principles of evolution through natural selection (Darwin, 1859). Resources are finite, and most species are capable of out-breeding the supply of those resources. Offspring vary in both physical and behavioural traits and these differences are inherited from parents genetically, or transmitted culturally. Offspring possessing traits that allow them to better utilise resources are more likely to survive and reproduce than those that possess less useful traits. Those with advantageous traits are more likely to survive and reproduce, thereby proliferating these traits, via genes, in the population.

The evolutionary approach does *not* promote genetic determinism. In fact, genetic *variability* and interaction *with* the environment, are core elements in the evolutionary process. Genes may be differentially expressed in different contexts and environments. Epigenetics, developmental variation, and behavioural ecology all influence the way in which traits are expressed. The evolutionary approach does *not* pit nature against nurture. Rather, it presents a picture in which nature and nurture are intimately intertwined. Within a species, there is often greatly varying genetic predispositions towards certain traits, and the extent to which those traits are expressed in particular situations/environments. This interaction of genes and adaptations with different environments also explains some of the variation in culture (Buss, 2001). This idea is central throughout this thesis as it is this genetic *variability* (in terms of both different possible alleles, and different expressions of the same genes), as well as different environments, cultures and contexts, which predict differences in thoughts, attitudes, and behaviours with regards to intergroup conflict, and therefore terrorism and radicalisation.

At the heart of evolutionary *psychology* is the notion that like other physiological traits, the contemporary human brain has evolved to solve particular survival and fitness related problems in our ancestral past. It has been proposed that the human brain is structured in terms of functional modules that have specific adaptations that helped our ancestors solve particular and recurrent ecological problems presented by the environment (Tooby & Cosmides, 1992). The ancestral environment is the environment in which specific traits were selected to evolve. This is distinct from what Tooby and Cosmides call the "Standard Social Science Model" (SSSM), which is the typical approach social scientists take when *the social* is considered independent from, and much more powerful than, the biological basis of humanity and human sociality (e.g. "Blank slate"), and where cultural differences, rather than universal similarities across human individuals, is the focus (Tooby & Cosmides, 1992). A common way to think about our ancestral environment, is to consider the lifestyle of our hunter-gatherer ancestors during the Pleistocene period from about 2 million to 10,000 years

ago, who lived primarily in the African savannah in small kinship based bands (Tooby & Cosmides 1992; Dunbar 2004). These small kin-based groups would have been linked, and sometimes allied with other bands (Richerson and Boyd, 2006).

Evolutionary psychology posits hypotheses on the basis that psychological mechanisms are rooted in evolution (Buss, 1995). A given evolved psychological mechanism proposed to solve a particular fitness problem in our evolutionary history is triggered by contexts or cues specific to that problem, and drives certain responses to help solve that problem presented by the environment (Buss, 1995). It is important to consider: a) the environment (or key factors) in which a species – in this case, our hominin ancestors – lived during its evolution, b) what the actual adaptive problem confronted by that species that required the emergence of that trait was, and c) what the evolved adaptations were and how they helped solve the problem. It is suggested here that during our evolution, resources were finite (hard to find and obtain, possibly in competition), and intergroup relations, particularly conflict, represented a selection pressure that would have promoted adaptive mechanisms such as parochial altruism which enhanced the fitness of individuals within groups, potentially to the detriment of individuals in other groups (Choi & Bowles 2007).

When considering a particular trait, or set of traits, we are also considering the specific environment in which those traits emerged, and how those traits were useful to the fitness of the species within that environment. Some traits would have been more advantageous than others. However, advantage or disadvantage is only relative to the environmental niche within which the species is situated, *and* in relation to other members of the species whose adaptations may be more or less advantageous. Those that better survive and prosper in a particular environment (than others of the same species) are more likely to pass on those successful traits to offspring via genes. The environment in which parochial altruism evolved was one in which our ancestors endured high levels of lethal intergroup conflict. Therefore, generating selection pressures for mechanisms promoting within group cooperation and altruism, and mechanisms that effectively dealt with threats from outgroups (Abbink et al. 2012;

Choi & Bowles 2007; García & van den Bergh 2011; Lehmann & Feldman 2008; Keeley 1996; Gat 2006; Alexander 1987; Kurzban et al. 2001; LeBlanc & Register 2003; Wrangham & Peterson 1997). It is via the process of natural selection that these mechanisms would have evolved.[19]

Levels of Selection

Natural selection is fundamentally competitive. Organisms compete with others of the same species for survival, resources, mates, and reproduction. Organisms best suited to taking advantage of their environment relative to less well-suited organisms, have higher fitness, and more genetic material propagated throughout a population, all things being equal. Individuals should, by this logic, be selfish. The propensity for animals to behave cooperatively or altruistically, incurring costs to their own fitness, in acts that benefit others, is puzzling. How could altruism – parochial altruism specifically – have evolved if we are all bound to selfishness? There is continuing debate in the field of evolution about which unit in the hierarchy of biological organisation natural selection works best. This brief section outlines some of the core aspects of each approach.[20]

Individual Level Selection

The basic premise of individual level selection is that natural selection occurs at the level of the individual organism, though there are different ways that the organism is construed. For Dawkins, the individual in question is the gene (Dawkins 1989). Genes compete with each other, and those that are advantageous in a particular environmental niche, confer fitness advantages onto the organism (vehicle) carrying them. This

[19] Although some suggest that mechanisms such as parochial altruism are not adaptations but by-products of other adaptations, such as human intelligence (e.g. Roscoe 2007).
[20] There is not the scope to engage in this debate here.

fitness advantage allows the genes of that organism to be propagated (replicators) in a population.

If genes are selfish, how can altruism and cooperation between 'vehicles' be explained? Cooperation or altruism that occurs between kin, that is – there is a degree of genetic relatedness – is favoured by natural selection because fitness is promoted at a genetic level (Hamilton's rule, Hamilton 1963). Despite the cost incurred by the individual co-operator, the recipient's genes, shared by the co-operator, still benefit. Whilst kin selection may be logical for animals and insects that live in kinship societies (e.g., bees and ants), it may not be appropriate to explain the level of cooperation between kin and non-kin found in humans (Okasha 2006; Nowak 2006).

Selection for cooperation and altruism between individuals may occur via reciprocity (Trivers 1971). In situations in which individuals repeatedly interact, cooperation may be selected for on the basis that a receiver may cooperate with the co-operator in kind at a later date. Cooperation is directly reciprocated. Cooperation is maintained if individuals were willing to provide it early on (tit-for-tat), and if successful interactions were repeated (win-stay, lose-shift) (Nowak & Sigmund 1993).[21]

But many human interactions occur with strangers who are unlikely to ever cooperate (e.g. charities, or helping strangers), so these encounters are asymmetric. "Indirect reciprocity" posits that reputation is important when making decisions about cooperating with others (Nowak 2006; Alexander 1987). According to this logic, helpful people are more likely to receive help from others on the basis of reputation. A reputation for cooperation can thus result in others rewarding that individual with cooperation in turn because they can be more certain of return in the future. But there are certain cognitive requirements to enable indirect reciprocity including the capacity to: remember interactions, monitor the changes within a group, use language to obtain

[21] Economic game models are often used to model how altruism and cooperation could evolve, and these are strategies.

reputation information and spread it (i.e. gossip). Selection for indirect reciprocity and language might be associated with the evolution of intelligence, morality (in humans) (Alexander 1987; Nowak 2006).

Group Selection

A big debate in evolutionary theory is the idea that natural selection can work at the level of *groups* of individuals. In a population where individual co-operators and non-cooperators are split into homogenous subdivisions, cooperative groups should outcompete non-cooperative groups (e.g. Wynne-Edwards 1962; Sober & Wilson 1998). Individuals within the co-operator group reproduce in proportion to the payoff of their cooperative behaviour. Thus, groups of co-operators would expand, and split, reducing the population of non-cooperators who do not reproduce as much or as quickly.

There are certain restrictions to this approach that make it unfavourable to many evolutionists (e.g. Maynard-Smith 1976; Maynard-Smith 1964; Dawkins 1989; Williams 1966). The rare and stringent conditions that would affect evolutionary change at a group level include: small group size, low migration rates, and extension of whole demes. Another one of many issues is that group selection theory proposes that groups can reproduce, whereas proponents of individual level selection are likely to stipulate that only individuals can reproduce.

Cultural selection

Although there are debates about whether groups can reproduce, some have argued that culture is *transmitted*. "Culture affects the success and survival of individuals and groups; as a result, some cultural variants spread and others diminish, leading to evolutionary processes that are every bit as real and important as those that shape

genetic variation" (Richerson & Boyd 2005, p.4). These authors argue that culture can influence the fitness of populations of individuals, which may then be favoured by natural selection.

Unlike genetic selection, which travels from parent to offspring (vertically), cultural selection can occur vertically, horizontally (via peers), and both (e.g. via religion, or institutions) (Atran 2002, p.204). Also unlike kin selection, cultural selection can occur very quickly, via norms and imitation (amongst other things), and offers a better way of understanding large, complex societies than kin selection and reciprocity. But just as culture can be adaptive, promoting behaviours that enhance the fitness of individuals within a certain population that follows that culture, some aspects can be maladaptive, such as witch hunts (Richerson & Boyd 2005, p.188; Boyd & Richerson 2002).

Multiple level selection

According to Traulsen and Nowak, "group selection is an important organizing principle that permeates evolutionary processes from the emergence of the first cells to eusociality and the economics of nations" (2006, p.10952). Although group selection continues to be treated with scepticism by many scholars, there is a growing trend towards *multilevel* selection which suggests that natural selection can occur at more than one level, including culturally. "The group (also known as multilevel) selection approach describes all natural selection as going on in a series of nested levels: among genes within an individual, among individuals within a group, and among groups" (Boyd 2006, p.1556; Nowak 2006). Under multilevel selection, groups can be favoured or disfavoured by natural selection (e.g. Bowles 2006; Nowak et al. 2010; Sober & Wilson 1998). Group level selection may emerge, but only as a result of individual reproduction, and population organisation (i.e. culture) (e.g. Traulsen & Nowak 2006). Importantly, individual and group interests can be aligned to do the same thing on occasion, even if they tend to pull in opposite directions at

other times, or in other domains (Arrow 2007). Parochial altruism is considered in line with multilevel selection.

Group Living

Our ancestors, like modern humans, lived in complex albeit much smaller social groups (Dunbar, 2004). The human brain evolved to solve particular problems associated with living in these social groups, particularly within-group cooperation and between group competition (e.g. Buss, 1995, 2001; Smirnov, Arrow, Kennett, & Orbell, 2007; Tooby & Cosmides, 1992; Choi and Bowles, 2007; Gat, 2009). During the Pleistocene (2 million – 10,000 years ago) increasingly large groups consisting of distant and non-kin members formed, creating selection pressures regarding living in social groups, including cooperation and cohesion with groups that may consist of kin, and non-, and distant-, kin (Alexander 1987). There are many benefits associated with increased group sizes, such as coalitional hunting, access to larger territories, capacity to gather or make more food, food sharing, communal care giving for offspring, information sharing, and protection from predators, *including other human groups* (Buss, 2005; Van Vugt & Schaller, 2008). There are some costs also, which are outweighed by the benefits of group living: increased competition within and between groups for resources (including mates), and increased risk of contagious disease and parasites (Alexander 1974).

If all humans increased group size for these benefits, then increasing sizes of other groups becomes more of a potential threat. This is partly because larger groups require more resources and territory, and are more effective in fighting for them (when internally cohesive and cooperative), and weaker (smaller groups) will lose these to bigger stronger groups (Alexander 1974; Fog 2006). Outgroups may also bring disease and parasites to which the ingroup has no immunity, potentially presenting a real threat to entire groups (Schaller & Duncan 2007). With this reasoning, it would

seem that humans were destined to be prone towards intergroup conflict, and that internal cooperation is a significant factor in that propensity (Puurtinen & Mappes 2009; Arrow 2007; Bowles 2006; Choi & Bowles 2007; Gat 2006; Keeley 1996; Smirnov et al. 2007).

Larger groups were not just threatened by expanding outgroups. A key challenge for larger groups is the maintenance of cohesion and stability. There is a critical point at which social ties can be maintained and cohesion and cooperation remain, and this is typically limited to cliques of approximately 100-200 individuals (Dunbar, 1993). Beyond this point, internal stability is threatened. However, through aggregations of these smaller cliques, larger group sizes can be maintained (Dunbar, 1992). There are thus two paradoxical pressures on group size. One is that increased group size would have been beneficial to fitness on the basis of increased access to resources, food sharing etc., and protection from the threat of increasingly large outgroups. The second is that we have the cognitive capacity to deal with limited numbers of others before the group starts to fracture. There is a balance to be struck between increasing group size to fend off encroaching and threatening outgroups, and reducing group size to maintain internal cooperation and stability.

Cognitive capacities such as theory of mind[22] and complex language, among others, helped humans to be highly cooperative with one another beyond kinship ties, imbuing within us the capacity to build and extend increasingly large coalitions and groups that included distant and non-kin members (Smith 2003). But these cognitive capacities that differentiate humans from other animals also helped our ancestors to develop behavioural traits such as norms, rituals, and punishment for norm violators, and religious belief, that utilised those capabilities, in order to encourage cooperation, and discourage free riding (Girard 1995; Henrich 2009; Gintis et al. 2001). Intragroup cooperation is not automatically achieved, and even the most egalitarian societies rely on strict norms and taboos to encourage intragroup cooperation, particularly in times

[22] The ability to infer the mental states of others, and the mental states of one's self.

of intergroup threat (Barker et al. 2012; Boehm 2001; Bowles 2006; Boyd & Richerson 1992; Puurtinen & Mappes 2009).

Norms are group-level phenomena that regulate social life, and include food sharing, cooperative hunting, and involvement in ingroup defence (Bernhard et al. 2006; Bowles 2006; Gintis et al. 2003; Puurtinen & Mappes 2009). Norms promote cooperation with others over and above self-interest and selfish behaviour, the latter which could destabilise and, ultimately, decrease the fitness of the group in relation to other groups, especially in times of intergroup conflict (Richerson & Boyd 2005; Fog 2006). They also safeguard individuals within a group during times of uncertainty, and from disease (Bowles et al. 2003; Boehm 2001; Bowles 2006; Gintis et al. 2003; Schaller & Park 2011).

Adherence to norms, and willingness to punish norm violators, can be costly signals of an individuals' understanding and commitment to the group, indicating trustworthiness as a cooperative partner or ally, which may bestow individual as well as group benefits such as respect, status, and reputation, that may have fitness advantages, particularly for warriors (e.g. Atran & Norenzayan 2005; Atran 2006; Bowles 2012; Chagnon 1968; Gintis et al. 2001; von Rueden et al. 2011). Such signals show the rest of the ingroup, and outgroups, that an individual is highly committed to the group, and will adhere to norms and punish those who do not, despite the cost (e.g. Bliege Bird & Smith 2005; Sosis & Alcorta 2003). Norms also signal who is and is not part of the group (if they differ between groups), enabling parochialism (Fincher & Thornhill 2008; Schaller & Duncan 2007). Individuals within a group conform and adhere to norms during times of intergroup threat, and strongly punish norm transgressions which may represent a threat to the ingroup (Bernhard et al. 2006; Baumgartner et al. 2012; Faulkner et al. 2004; Neuberg et al. 2011; Park et al. 2007; Schaller & Duncan 2007).

Conformity, particularly to group beneficial norms, and especially during times of threat to the group, is vital to the cohesiveness of the group, and possibly enhanced by these events (Gneezy & Fessler 2012; Boyd & Richerson 1992; Neuberg et al. 2009; Hirschberger et al. 2009; Pyszczynski et al. 2006). Punishing norm transgressors encourages and signals cooperation (Gneezy & Fessler 2012; Marlowe & Berbesque 2008; Saaksvuori et al. 2011; Boyd & Richerson 1992; Sasaki & Uchida 2013; Lehmann & Keller 2006). However, a cost is incurred by punishers as well as the punished: it is a "second-order" public good (Hackathorn 1989). Some suggest that altruistic punishment is not so altruistic after all because of the benefits to punishers (Pedersen et al. 2013). Despite this cost, individuals willingly punish norm transgressors from both inside, and especially outside of the group, particularly in interdependent or collectivist cultures, and those experiencing some form of intergroup threat (Bauer et al. 2011; Pyszczynski et al. 2006; Bowles & Gintis 2004b; Saaksvuori et al. 2011; Gneezy & Fessler 2012; Smirnov et al. 2010; Boyd & Richerson 1992; Sasaki & Uchida 2013; Bernhard et al. 2006).

Religion may have been a key development in human sociality, and some suggest that the beginnings of religion also signify the birth of hominisation – the move away from other animals and primates, towards humanity and 'being human' (Johnson & Reeve 2013; Atran & Norenzayan 2005; Henrich 2009; Wilson 2002; Roes & Raymond 2003; Sosis & Alcorta 2003; Johnson & Bering 2006; Girard 1995). Religious belief has been linked to human cooperation (e.g. Sosis & Alcorta 2003; Johnson & Bering 2006; Johnson 2005; Wilson 2002; Shariff & Norenzayan 2007; Rossano 2006; Rossano 2010). Others have suggested that religion *enhances* our capacity for ingroup cooperation and enhances our capacity to conflict with other groups (Johnson & Reeve 2013; Atran & Norenzayan 2005; Kurzban & Christner 2011; Alexander 1987). Religious belief has many apparently adaptive features. It improves mental, emotional, and physical health, provides camaraderie, and existential insight, and may also provide the capacity to improve the chances of success in intergroup conflict, particularly in relation to non-believers (Johnson & Reeve 2013; Wilson 2002). Religious belief enhances within group cooperation through ritual, beliefs, norms, taboos, and the threat/promise of supernatural punishment/rewards (Norenzayan 2013;

Schloss & Murray 2011; Shariff & Norenzayan 2007; Johnson & Bering 2006). Given that different groups are likely to have different sets of beliefs, the features that enable individuals within a group to cooperate and cohere effectively are also likely to become markers of group membership, which are not shared by outgroups (Yessldk et al. 2010).

Our ancestors developed particular processes for dealing with individuals within groups enabling cooperation and cohesion, and deterring free riding and exploitation (e.g. Smith 2003; Burnham & Johnson 2005; Johnson & Bering 2006; Johnson 2005; Cosmides & Tooby 1992). To ensure that benefits of cooperation and cohesion were restricted only to those likely to respond in kind, such as ingroup members, parochialism towards outgroups would have also been selected for (Choi & Bowles 2007). The very threat of intergroup conflict may have enabled our high levels of cooperation within the group, because a weak and uncooperative group of individuals in which all are self-interested, would have been out-competed by groups with mechanisms that favoured the suppression of within group competition (Barker et al. 2012; Bauer et al. 2011; Bowles 2006; Alexander 1987).

Radicalisation: Recognising and Adhering to Group Markers

By this logic, adherence to group norms may signal perceptions of intergroup conflict (thereby enhancing intragroup cooperation and cohesion), but may also promote adherence to group boundaries. Adherence to norms and other group markers may be a feature of the identification process (Chapter 3). During the radicalisation process, emphasis on traditional dress (Islamic robes, hijab), language, rituals and habits (such as prayer, attending mosque, participating in Ramadan, avoiding all things hareem, etc.) is noted to occur (e.g. Sageman 2004). A common complaint by Islamist extremists is the encroachment of Western culture. Adherence to group norms signals to others (ingroup and outgroup) that an individual is a *good* group member, which may bestow on them benefits (status, respect, reputation). Concern that there is an

infiltration of different (Westernised) food, hygiene, sexual relationships and practices (amongst other things) in the Muslim group may be perceived as a direct threat to it. This may be due to cultural (historical) roots of the norm (i.e. threat of disease or parasites), and/or the potentially destabilising effect that non-adherence to group norms has on 'us' and 'not-us' boundaries.

This certainly seems to be borne out in the attempts of many would-be terrorists to not only actively learn about how to be Muslim, but rigidly adhere to particular rituals (Sageman 2004). The July 7th bombers were known to be involved in frequent chanting and prayer sessions that often went on long into the night, they prayed five times a day, and visited mosques as often as possible (Gardham 2011). Most of the bombers wore Islamic robes and were strict in conforming to dietary, hygiene, and physical rituals and norms associated with Wahhabism (including the extra hand movement in prayer that differentiates it from the more traditional Islam practised by Beeston elders) (Malik 2007). Hasib Hussein, Michael Adebowale and Michael Adebolajo took this type of parochialism a step further by refusing to speak to non-Muslims, and refusing to touch money (that may have been touched by non-Muslims) with bare hands (Akbar & Herbert 2005; Paramenter 2013; Martin & Ledwith 2013).

This logic also suggests that increased attempts to coerce other ingroup members into being '*more* Muslim' might be expected (e.g. punishment of norm violators). Willingness to punish norm violators is also a feature of extremism. The 'Muslim patrol' are small groups of young Muslim men who roam areas in the UK, vandalising adverts that show women's bodies, or advertise hareem elements, such as gambling, or alcohol (Dailymail 2011a). Others have been known to intimidate Muslim women into wearing the veil (Dailymail 2011b). Patrols circle 'Muslim areas', with particular attention paid to mosques (Stone 2013; CNN 2013; Theshariaproject 2012). These groups of Muslim men patrol the streets, mainly in London, and harass members of the public.

They chase non-Muslims out of the area, particularly if they been drinking alcohol, wear immodest clothing, are homosexual, or if they get too close to the mosque. They intimidate and behave in a very threatening manner, sometimes using loud speakers to convey their message: "This is a Muslim area, you are not wanted here" (Theshariaproject 2012). Similar actions are taking place generally, including in schools (Trojan Horse Scandal BBC 2014a; BBC 2014b). A British Christian teacher was forced out of a British state-funded (Islamic) school after being harassed for not adhering to the dress code (Paton 2013). The point here is less about the intolerance of these attitudes, and more about the clear drive to signal and adhere to group markers and boundaries, and the willingness to punish norm transgressors both inside and outside of the Muslim group. Importantly, these signals occur beyond those who became involved in terrorism.

Religion offers followers a set of rules and rituals that binds them in a potentially highly cooperative group that encourages group-interest over self-interest. Indeed, Anjem Choudrey's drive towards implementing Sharia law in the UK is a good example of this parochialism. Whilst he invites non-Muslims in the UK to Islam, his aims to implement sharia law is essentially to benefit Muslims: "we are merely saying to you that there's a better way of life. You don't need to live like animals following your desires. The big industries you see today in the West are things like gambling, pornography, alcohol, drugs, you know, homosexuality" (VICE 2012). His suggestion is that Sharia will enable Muslims to successfully and beneficially live together, trade amongst themselves, resolve problems, police themselves, and provide welfare locally (RT 2011). Non-Muslim, Western attributes would be banned (music, gambling, alcohol, drugs, homosexuality etc.), and punishment towards transgressors would be Sharia also (which includes stoning adulterers, amputation of the hands of thieves, and death to anyone who tries to leave Islam). It is a highly divisive strategy and is sharply differentiates the 'good' (Muslims) from the 'bad' (non-Muslims who live like animals), but it also recognises that adherence to these radical norms would require equally radical enforcement and punishment for norm transgression.

Parochial Altruism

Human history, both contemporary and prehistoric, is littered with intergroup conflict (Gat 2006; Keeley 1996; LeBlanc & Register 2003). Intergroup conflict put significant selection pressures on our ancestors which may have led to the evolution of particular mechanisms that whilst increasing intragroup cooperation, may have also resulted in parochialism (Keeley 1996; Gat 2006; Choi & Bowles 2007; Gintis et al. 2003; Bernhard et al. 2006). In the modern [Western] world, the threat of extinction from intergroup conflict is highly unlikely, with multiculturalism and religious tolerance typically core features of society. Yet, genocide continues to occur, indicating that whilst modern Western groups are unlikely to be made extinct by intergroup conflict any time soon, there are plenty of other groups that have recently come close to annihilation including Native Americans, Armenians, Jews in Nazi occupied lands, Zulus, Rwandans, Bosnian and Chechen Muslims, to name but a few.

Psychological mechanisms and associated behavioural responses can be triggered upon perceiving relevant cues, even in the absence of danger (Schaller, Park, et al. 2003). Fear of spiders and snakes is a good example of this. People are typically more afraid of spiders and snakes than motor vehicles despite the relatively few deaths caused by spiders compared to the huge numbers deaths by car accidents (Buss, 1995). Spiders and snakes would have represented a threat to our ancestral survival and fitness, and cars were obviously only invented in the last century. Our current tendency towards fearing the former, and not the latter is indicative of the evolutionary pressures that existed in forming the mechanisms triggering the fear response to snakes and spiders, despite the inappropriateness of that fear in many parts of the modern, Western world. This discrepancy between the ancestral and current environment indicates a "*mismatch*" of evolved features of the human mind, and the features of modern society that may erroneously trigger such mechanisms (e.g. van Vugt et al. 2008). Parochial altruism may be considered in terms of mismatch since perceptions

of conditions that trigger it, and parochial altruistic responses confer no fitness advantages in today's modern world.

Nevertheless, parochialism, including withholding cooperation from non-ingroup members, despite the potential benefits that cooperation might bring the individual, would have been beneficial to our ancestors.[23] Keeping cooperation for ingroup members only means that cooperation is more likely to be reciprocated, by way of cooperation enhancing mechanisms (e.g. norms). This speaks of cultural transmission rather than genetic or group-level selection (Gelfand et al. 2012). There are studies which promote parochial altruism as a culturally evolved trait (Gelfand et al. 2012; Ginges & Atran 2011), other models suggest multilevel selection of parochial altruism that includes cultural transmission (Lehmann & Feldmann 2009; Choi & Bowles 2007).

Modelling Parochial Altruism

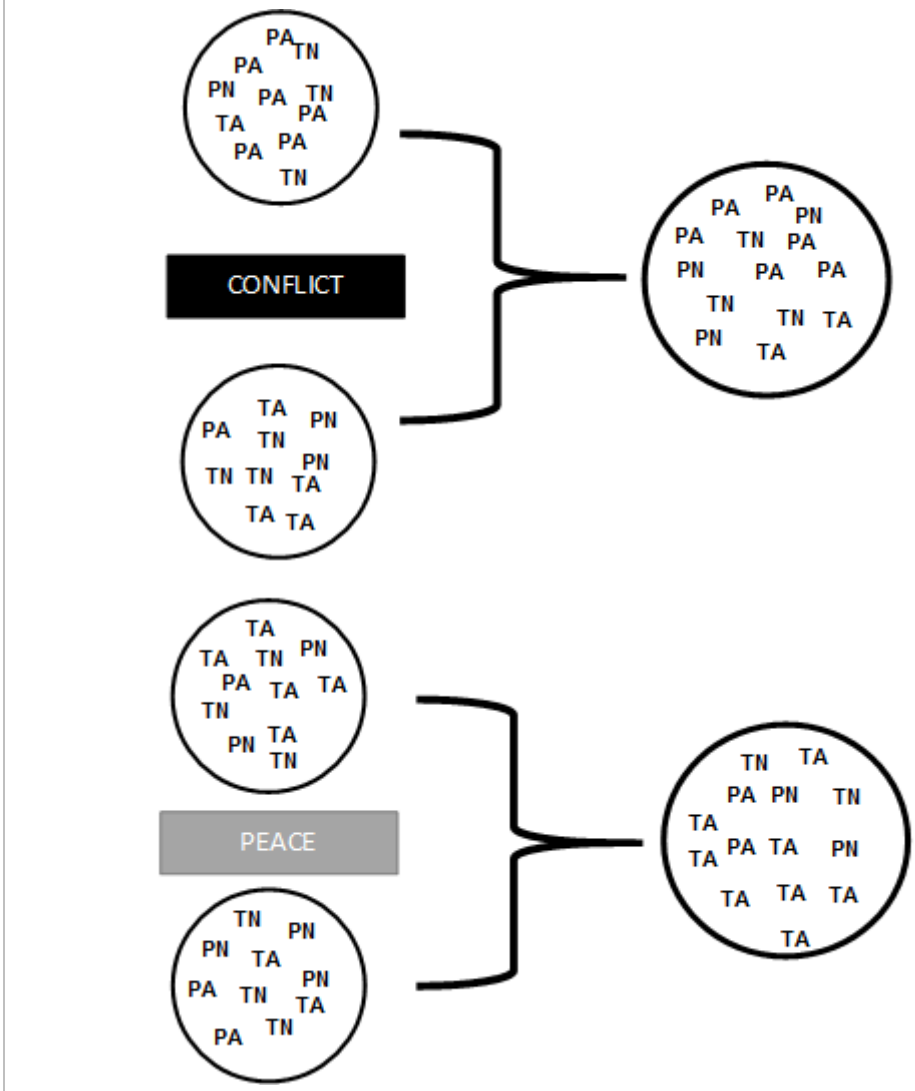
Choi and Bowles (2007) conducted a game theoretic analysis and simulation model to investigate how parochialism and altruism might be reproduced through thousands of generations in the context of intergroup conflict. Agents in this model had two alleles. These were: parochial (no exchange with outgroups) or tolerant (profitable exchange with outgroups), *and* altruistic (incurring costs to help others) or not. Alleles passed to offspring and occasional mutations were included. Parochial non-altruists are selfish and hostile individuals, whilst tolerant altruists exchange and cooperate with all. Parochial altruists incurred costs for ingroup members and behaved with hostility towards outgroups. Tolerant non-altruists benefitted from exchanges with both ingroup and outgroup members, without incurring costs from engaging themselves in cooperation.

[23] Others have suggested that parochial altruism can occur as a function of 'scapegoating' within the group to promote intragroup cohesion where self-interest over group-interest threatens stability (Reeve In Press)).

These agents were put into groups and these groups were paired. The make-up of these groups affected the way in which the story between them played out. Individual selection favours tolerant non-altruists. Parochial altruists are favoured during times of war because groups with higher numbers of these should be victorious over groups with fewer. A situation featuring many tolerant altruists in both groups means profitable trade for all. Conflict between the groups is more likely where there is an asymmetry in the number of parochialists between the groups. Evenly matched groups will be caught in a standoff. Tolerant's will not fight. Victorious groups will conquer territory and offspring born to surviving but losing groups is absorbed into the victorious group.

There are two stable outcomes: tolerant non-altruists, and parochial altruists. In either outcome, small numbers of other allele combination may survive (Figure 18). Tolerant altruist societies are peaceful. Conflict is more common with the parochial altruistic groups. Intergroup conflict need not be a frequent condition for parochial altruists to be a large representation of the group. The benefits of parochial altruism (between-group selection) compensate the costs of such behaviour at an individual level (within-group selection). Such benefits amount to obtaining or maintenance of resources, territory, and mates, which are all vital to the fitness of all individuals, and all groups of individuals. Successful surviving warriors (parochial altruists), benefit more so by increased mates, and access to mates due to enhanced status, and access to outgroup females (Lehmann & Feldmann 2009).

Figure 18 Parochial Altruism Model Example



This model was criticised for not including migration rates and group size which are important for models investigating at an individual level of selection (Lehmann & Feldmann 2009). Lehmann and Feldman produced a population-genetic model similar to Choi and Bowles, to investigate the coevolution of bravery and belligerence in

males, correcting for the migration rates and group size (2009). They suggest pressures to evolve bravery and belligerence could be driven by fitness enhancing resources – specifically mates for males and material resources for females – acquired from the losing group. These authors assume belligerence (aligned with parochialism) increases the propensity for warfare, and bravery (aligned with altruism) is associated with increased capacity to win the war. Although this model includes migration and group size, it is still limited by the assumption that war occurs because of belligerent (parochial) agents. The utility of these models is to show that parochial altruism can co-evolve in particular contexts, and that it can develop at multiple levels of selection, including cultural transmission.

Parochial altruism in individuals would have offset the costs of within group selection where groups of individuals experienced lethal bouts of intergroup conflict. Choi and Bowles do not merely assume the presence of intergroup conflict, but model how it may have coevolved alongside parochial altruism. This is both a strength and a weakness. It is a strength because the lethality of our ancestral groups is somewhat debated (Fry 2007), and this model offers a way to understand why and how it might have evolved. But it is a weakness too because conflict is driven by the number of parochialists in a given group – so it is endogenous (García & van den Bergh 2011). Nevertheless, where research does not include this endogenous element, parochialism and altruism are still shown to be most likely to have evolved together at multiple levels of selection (García & van den Bergh 2011; Abbink et al. 2012; Lehmann & Feldmann 2009).

Multilevel selection models show that parochialism can be selected for in the presence of intergroup conflict, and assortment (that is where individuals with similar traits cluster together) (García & van den Bergh 2011). However, an important finding in Choi and Bowles' model is that the number of parochial altruists in any given group does not need to be high relative to other types for the trait to be passed one, especially in contexts of conflict (Choi & Bowles 2007). This indicates that individual variation in the propensity for parochial altruism is feasible. Intergroup competition enhances

the effectiveness of within group punishment in public goods experiments (Saaksvuori et al. 2011). It improves the capacity of the ingroup to outcompete less punishing outgroups, and reduces variation within the group. This suggests that intergroup conflict provided fertile ground for the emergence of costly punishment and cooperation. Other models have supported this notion (Bowles 2009).

Defining Parochial Altruism

The definition of parochialism across studies is highly variable. Choi and Bowles' (2007) model for example, defines parochialism in terms of outgroup hostility, yet they take parochialism in their model to mean *no exchange with outgroups*. They then interpret the findings of the model as indicative of hostility and aggression towards outgroups. Although the definition of parochialism in this respect will not change the outcome of the model, it does highlight the inconsistency in the use of the term both within and between models and studies.

Lehmann and Feldman (2009) talk about belligerence and bravery in much the same way as Choi and Bowles (2007) talk about parochial altruism. Others refer to heroism (Smirnov et al. 2007; Orbell & Morikawa 2009). Where parochial altruism is the term used, there are sometimes important discrepancies in the meaning of the term – parochialism especially. Some, like Choi and Bowles refer to parochialism in terms of outgroup directed hostility and aggression (Choi & Bowles 2007; Abbink et al. 2012; De Dreu et al. 2010). Others talk about outgroup mistrust (Baumgartner et al. 2012), or withholding benefits from the outgroup by favouring the ingroup (Bernhard et al. 2006). This raises questions about whether ingroup bias and parochialism can really be disentangled, and whether outgroup hostility is different from ingroup bias as has been suggested by some (e.g. De Dreu et al. 2010; McDonald et al. 2012). This project considers the term parochial altruism in the broadest sense, from withholding benefits, to hostility. This definition can in this case, be associated with terrorism (as

extreme parochial altruism), and other features of the radicalisation process (which may include as above, examples of withholding benefits from outgroups).

Empirical Research on Parochial Altruism

Despite these definitional limitations, other studies have garnered some interesting results. There is evidence of a link between pro-social behaviour in the prisoner dilemma and higher contributions to intergroup conflict, *and* more punishment within the group towards low contributors (Abbink et al. 2012). Other studies indicate that parochial altruism is unlikely to develop in a large unstructured population, but the capacity to discriminate allows for cooperation to remain internal to the group (García & van den Bergh 2011). In a well-known, cross-cultural study using the Dictator Game, participants were members of small indigenous groups in Papua New Guiney. These groups were non-hostile and considered to be good representation of our ancestral societies (Bernhard et al. 2006). Participants punished outgroup members for norm violations more harshly than ingroup members, and ingroup members expected less punishment from ingroup punishers when they violated norms. Surveys and cross cultural surveys have also been used to investigate parochial altruism and have indicated that cultural transmission and a preference towards moral, rather than instrumental, material logic may be important features (Ginges & Atran 2009). Although these studies are limited by their use of economic games (Kagel & Roth 1997), they consistently indicate a propensity towards parochial altruism. Nevertheless, further research using different methodologies is clearly needed.

Empirical research on parochial altruism is relatively sparse but research with the hormone/neurotransmitter oxytocin seems to offer insight into the biological bases of parochial altruism (De Dreu 2012a; De Dreu et al. 2010). Oxytocin is a hormone and neurotransmitter that has been associated with empathy and parochial altruism (De Dreu et al., 2011; Churchland and Winkielman, 2012; Hurlbut, 1997). Participants receiving oxytocin were usually male (which is a limitation in these studies), and the

overall findings are that these individuals indicated more sensitivity to parochial altruism, and were more likely to portray parochially altruistic attitudinal and behavioural responses in a variety of intergroup tasks. This parochially altruistic behaviour (and attitudes) included: categorising us and them, non-cooperation (or withholding benefits) with outgroups, recognition and avoidance of disease cues, influences ally choices (more dominant aggressive males for situations of intergroup threat), and outgroup hostility and aggression (De Dreu 2012b; De Dreu 2012a; De Dreu, Greer, et al. 2012; De Dreu et al. 2010; De Dreu et al. 2011; De Dreu, Shalvi, et al. 2012; Israel et al. 2012; Kosfeld et al. 2005; Van IJzendoorn & Bakermans-Kranenburg 2012; Kavaliers & Choleris 2011; Radke & de Bruijn 2012). Interestingly, oxytocin also facilitates accurate perceptions of intergroup conflict – in males, but not females, who are better at perceiving kinship in oxytocin conditions (Fischer-Shofty et al. 2012). Oxytocin therefore, has been promoted as a driver of parochial altruism, and a cause of intergroup conflict and competition (De Dreu et al. 2010).

This research suggests that oxytocin may be a crucial element in mimesis or imitation of social behaviour (Hurlbut 1997; 2011). Interestingly, there is also evidence that oxytocin can facilitate and enhance *cooperation* between groups in intergroup cooperation contexts, therefore indicating the importance of cues and sensitivity to cues of intergroup relations (Israel et al. 2012). Trust and cooperation may be bounded by parochialism – or group membership, particularly in intergroup scenarios, which also means oxytocin is vital to the categorisation process (De Dreu 2012a). The parochial altruistic response is therefore enhanced by the presence of *perceived* threat from an outgroup. Interestingly, oxytocin does *not* seem to influence levels of outgroup hostility, which remain stable whether participants are given a placebo or oxytocin (De Dreu et al. 2011). There may be a base level of outgroup hostility, and/or its manifestation may be influenced by individual differences including perceptions of the outgroup (Hein et al. 2010; Konner 2011). Even the seemingly most non-violent tribes could be roused to violence when the situation inspires it, indicating the importance of context, and suggesting that culture and upbringing cannot solely

explain our penchant for violence although may certainly be influential in directing it (Konner 2011).

Males are often considered more belligerent (warriors), and this is why most research using oxytocin uses male subjects (van Vugt 2009; De Dreu et al. 2010; Navarrete et al. 2010; McDonald et al. 2012; van Vugt & Park 2009; van Vugt et al. 2007; van Vugt & Spisak 2008; Yuki & Yokota 2009). Research that has compared human males and females in oxytocin conditions has shown that it increases male capacity to perceive intergroup conflict, but not females, whose capacity to discern kinship is instead enhanced (Fischer-Shofty et al. 2012). The strongest evidence for human sex differences is found in aggression, with males being more aggressive than females, and some have suggested that aggression is the antithesis of nurturance, the latter of course, which is a typically more feminine trait (Konner, 1982, p.119).[24]

Aggression has been shown to be mediated by testosterone, and testosterone levels can be influenced by situation (Konner 1982). In competition, particularly intergroup competition, males will typically have raised levels of testosterone before the competition, as well as afterwards if they (or their group) win, while testosterone levels tend to be lower in the losers of competition (Oliveira et al. 2009; Booth et al. 1989). This is the so-called "Winner Effect" (e.g. Fuxjager & Marler 2009), which can even extend to vicarious competition, in which individuals identifying with a competing winning or losing group will also show similar patterns of testosterone levels by merely watching the events unfold (Bernhardt, Dabbs, Fielden, & Lutter, 1998).[25] Other studies have shown aggression, overconfidence, and a willingness to attack without provocation is a distinctly male set of traits that may be promoted by testosterone (Johnson et al., 2006). Interestingly however, the influence of

[24] Animal studies using oxytocin have tended to be about mother-infant attachment (e.g. Nelson & Panksepp 1998).

[25] However, this pattern of results has not always been found to be consistent (see Gonzalez-Bono et al., 1999; Meij et al., 2012).

testosterone in intergroup competition has also been found in females (Oliveira et al. 2009).

Although testosterone plays an important role in competition, it is not the sole explanation for sex differences in aggression. It may be tied however, to differences in male and female brain structures (Konner, 1982). Another important consideration to bear in mind is that in competition, males express not only higher levels of testosterone, but also increased levels of *intra*group cooperation (Huoviala & Rantala 2013; van Vugt et al. 2007). This suggests an important and intricate interaction between biology and context that is mediated by culture, the latter because males are typically encouraged to be warriors and females are not (Gelfand et al., 2012; Konner, 1982, 2011; McDonald et al., 2012). Success for warrior males is associated with higher fitness on the basis of increased status within the group, which may provide access to more resources, including females from within the group, as well as access to territory and resources (including outgroup females) from the conquered group (Lehmann & Feldman 2008; McDonald et al. 2012; Navarrete et al. 2010). The costs of involvement in conflict were high for ancestral males, but the payoffs for success were greater.

Terrorism is an Act of (Extreme) Parochial Altruism

Terrorism is proposed here to be an example of an act of (extreme) parochial altruism. It is highly costly to the individual, often detrimental to the outgroup in some way, and is believed to benefit the ingroup. Features of radicalisation are also parochially altruistic though to a less extreme degree (as suggested above, p152). Parochial altruism is a mechanism in us all and is likely variable across groups and individuals (e.g. Choi & Bowles 2007). It is not logical to suggest that certain groups of individuals are more parochially altruistic than others at a biological/genetic level. However, it may be that some groups (specifically combat-oriented groups) include features that promote, direct, and drive parochial altruism more than other groups.

Terrorist groups (and features of the radicalisation process such as ideology, indoctrination, socialisation, training, experiences of discrimination and group-membership-based trauma) would in this case, promote and enhance sensitivity to the parochial altruism mechanism.

Importantly, individual differences in sensitivity to parochial altruism may influence perceptions of threat to the ingroup and responses (although this is difficult to disentangle from the dynamics and culture of the group). Individual differences may be cultural or influenced by group membership (i.e. combat groups), or they may be cognitive or attitudinal (which is investigated later in the thesis), and possibly biological. In this respect, it may be that some individuals who are more sensitive to parochial altruism, are more open to the radicalisation process, and thus more likely to support, engage with, and become involved in terrorism.

To a degree, biological difference in parochial altruism has been explained by sex. This is an important contribution of oxytocin and parochial altruism research for terrorism because it goes some way to providing a biological-cultural explanation for why terrorists tend to be young and male. As was noted by McCauley and Moskalenko (2011), young males may be more likely to become involved in terrorism than older males, or females, because sexual selection drives status-seeking (which is also associated with risk-taking). Males today may be driven to gaining status and dominance (both within and between groups) because such behaviours in ancestral males increased fitness, thus propagating these traits in concurrent generations (Keeley 1996; Bowles 2006; Wrangham & Peterson 1997). Males may be more sensitive to parochial altruism than females, explaining the sex difference in terrorists, and some individuals may be more sensitive to parochial altruism than others, leaving these individuals more open to features of radicalisation. Importantly, the radicalisation process itself, and features of terrorist (and other combat-based) groups are likely to promote, drive, and direct existing parochial altruism.

Conditions, Cues, and Responses: Parochial Altruistic Behaviour

Understanding what conditions and cues might trigger parochial altruistic attitudes, and what kind of behavioural responses might be expected when the parochial altruism mechanism is triggered may help us to understand why certain grievances can move some towards supporting or even participating in terrorism. Social psychologists have shown how competition over scarce resources can drive groups to conflict (i.e. realistic conflict model, Sherif & Sherif, C. 1979). SIT suggest that imbalances of status influence intergroup relations although these balances rest on individuals perceptions and are context specific. The argument here is nicely summarised by Kurzban and Leary who suggest that: "real conflicts of reproductive resources in the past have led to a psychology that is designed to form groups, exploit members of other groups, and cope with potential exploitation at the hands of members of other groups" (Kurzban & Leary 2001; Tooby & Cosmides 1988). There are certain conditions, and cues in intergroup relations that trigger parochial altruistic responses and these responses would have improved ancestral fitness in some way. Insight into these conditions and cues, and the likely behavioural responses to them may help shed light on terrorist grievances and behavioural responses including violence, and also radicalisation more generally.

Resource Encroachment and Group size

The notion of resource competition as a causal factor in intergroup conflict is well established in social psychology (Sumner 1906; Sherif & Sherif, C. 1979). Evolutionarily, larger outgroups are likely to have represented a serious existential threat to small groups (Schaller, Park, et al. 2003). Smaller groups were more vulnerable to exploitation and annihilation (or absorption into the larger group), and

less able to successfully defend themselves and their resources from larger groups that seek to claim resources and territory (Kurzban & Leary 2001). The behavioural outcome most likely in this case is fear and avoidance (Schaller, Park, et al. 2003; Kurzban & Leary 2001). However, other features of the group may influence behaviour towards aggression and hostility (i.e. religious belief, supernatural rewards, Johnson & Reeve 2013; overconfidence, Johnson et al. 2006; identity fusion, Swann, Gómez, Dovidio, et al. 2010).

Expanding groups benefit from forcefully (aggressively) appropriating other groups' resources rather than expanding into virgin territory because the latter require more energy and resources to develop than the former (e.g. Durham 1976). The presence of any other group, particularly larger or expanding groups triggers parochial altruistic responses in the form of fear and avoidance (including a failure to reciprocate) for the protection of the ingroup, although in some cases defensive aggression might be more appropriate (i.e. when flight is not possible, Neuberg et al. 2011; Durham 1976). This is because "individuals maximize their survival and reproduction by living in social groups and participating in collective aggression when access to scarce resources is at stake" (Durham 1976, p.385).

Importantly, intergroup conflict is more likely when the benefits of group living are based on sociality, and not just access to group resources indicating the importance of group ties and bonds (Shen et al. 2014; Alexander 1974). An important related feature is that of expression of dominance and status. A group, or individuals' status (and therefore fitness) is related to the resources it has access to (including females). Symbols of social status (between groups and within) may be an additional pressure for violence even in times of plenty (Gat 2009). In fact, "competition is most intense in environments of plenty, where more competitors can play and more resources can be accumulated" (Gat 2009, p.581). Parochial altruistic responses are therefore likely to be more profound for groups that benefit individuals within them beyond mere access to resources (i.e. in terms of social benefits).

Threat of Disease

The threat of communicable disease was significant for our ancestors (Kurzban & Leary 2001; Schaller & Duncan 2007). Norms and customs to inhibit the spread of disease within a group include adherence to certain dietary, hygiene, food preparation, and sexual practices (Schaller, Park, et al. 2003; Fincher & Thornhill 2008; Schaller & Duncan 2007). Outgroups not only may have brought with them diseases and parasites to which the ingroup has no immunity, but may also follow *different* norms and customs of disease control, further threatening the safety and health of the ingroup (Diamond 1997; Schaller, Park, et al. 2003). Behavioural responses to outgroups therefore may be fear, disgust, and avoidance. Indicators of difference (i.e. race), or group markers, in conjunction with different norms and customs associated with contagion aversion are likely to trigger parochial altruistic responses in the form of fear, disgust, and avoidance, in order to maintain the ingroups (and the individuals') health and safety (Kurzban & Leary 2001).

Some suggest that the fear of disease may not just manifest in behavioural avoidance, but may also be a driver in genocide: "individuals and coalitions may aggressively seek, lethal weapons in hand, members of other groups perceived as contaminating – for example, ethnic and religious outgroups labelled as 'cockroaches' or 'vermin'" (Neuberg et al. 2011, p.1046). Indeed, some argue that "High intensity of infectious disease leads to the emergence of xenophobic and ethnocentric cultural norms" (Letendre et al. 2010, p.669). Group markers imply intergroup differences, which can be associated with disease, parasites, and different norms and customs for inhibiting the transmission of disease and parasites, which may explain fears of cultural encroachment. On one hand, if an individual does not follow the norms and customs of the ingroup, they may increase the risk of that ingroup to disease. On the other, dilution of cultural norms and practices of a group with other groups may make it more difficult to practise parochialism in the first place as group markers become blurred.

Parochial altruistic behavioural outcomes in the event of perceptions of threat of disease are disgust, fear, and possibly include aggression and hostility to destroy the 'contagion'.

Aggression and War

Intergroup conflict and warfare is a consistent feature of human sociality (Keeley 1996; Gat 2006; Choi & Bowles 2007; LeBlanc & Register 2003). "Competition over resources is a prime cause of aggression and deadly violence. The reason for this is that food, water, and, to a lesser degree, shelter against the elements are tremendous selection forces" (Gat 2009, p.573). Others suggest that conditions that are necessary for intergroup conflict to occur include intergroup hostility and imbalance of power such that one group may attack the other without taking on a huge risk to themselves (Wrangham 1999).

Threats are most readily perceived in the form of coalitional groups of males (Neuberg et al. 2011; Wrangham & Wilson 2004; Wrangham & Peterson 1997; McDonald et al. 2012). "Threats to physical safety not only elicit a negative (rather than a positive) affective response, they elicit a very specific form of negative affective response: fear… and typically encourages a very specific form of action: escape" (Neuberg et al. 2011, p.1044). Although the primary strategy in response to fear, including threat from an outgroup, may be avoidance in order to affect some distance from the attackers, there are situations in which flight may not be possible. Defence may be necessary if escape is unlikely, or if protection of others is required (Gat 2009; Neuberg et al. 2011). Indeed, these authors suggest that defensive *attacks* when a group is threatened by an outgroup can increase the relative strength of that group. "Standing for one's own might mean lessening the occurrence of conflict in the future. No less, and perhaps more, than actual fighting, conflict is about deterrence" (Gat 2009, p.575). This is especially notable in drive for vengeance which was the most common reason for conflict in pre-state societies (e.g. Chagnon 1983).

Vengeance may be sought to destroy or deter and may be directed towards enemy outgroups, or others to signal strength and thus prevent notions of potential victimhood that may encourage attack. Parochial altruistic responses are triggered in the mere presence of outgroups who may represent a threat to scarce or plenty resources. Imbalances of power (numerically or in terms of resources) are also likely to trigger parochial altruistic tendencies although the smaller group is more likely to be the victim group. Parochial altruism in the form of revenge and defensive attack is likely if any threat or harm to an ingroups members or property occurs and is an act to signal strength and deterrence to other potentially aggressive groups.

Terrorist Grievances are Evolutionarily Relevant Threat to the Muslim Umma

Terrorist grievances can be considered in terms of evolutionarily relevant threats to the Muslim Umma that would have been detrimental to the fitness of ancestral groups. Perceptions of threat from the Western outgroup to the Muslim Umma include territorial encroachment (i.e. Gaza), resource encroachment (oil, sacred sites), and cultural encroachment (spread of democracy, and Western norms and values) (Useem & Clayton 2009; Ehrlich 2001; Bakker 2006; Sageman 2008; Bergen & Footer 2008). Other significant grievances are the prevention of the establishment of a Caliphate state, wars and invasion (i.e. Iraq and Afghanistan), and the perception of a war against Islam (Bakker 2006; Harrow 2010; Reinares 2010; Atran 2004; Sageman 2008; Juergensmeyer 2000a; Post 2009; Githens-Mazer 2008). These events signify a lack of power, status and other physical capacities that enable the group to survive and prosper (i.e. control over oil, the establishment of an Islamic state). These threats do *not* affect Darwinian fitness today, but would have inhibited the fitness of ancestral groups triggering parochial altruistic responses. The capacity to perceive and respond to these threats is present in us today, even if the fitness effect is not. In such conditions, specific responses are expected (flight where possible or preferable,

defensive aggression, and/or revenge, to promote the image of strength and deterrence), but again, these responses will not translate into a fitness advantage today.

Terrorist grievances can be interpreted as evolutionarily relevant threats to the ingroup. In an open letter to America, Osama bin Laden presented his (al Qaeda's) core grievances in explanation of the 9/11 attack (bin Laden 2002). These core grievances are used here to illustrate the evolutionary relevance of perceptions of threat to the Muslim Umma by extremists and terrorists. He states "Palestine, [which] has sunk under military occupation for more than 80 years..." and "You steal our wealth and oil at paltry prices because of you international influence and military threats." This is indicative of loss of territory and valuable resources, and also highlights the disparity in military strength, wealth and power between Muslims and the non-Muslim West. This is further emphasised by his complaints that "Your forces occupy our countries; you spread your military bases throughout them; you corrupt our lands, and you besiege our sanctities."

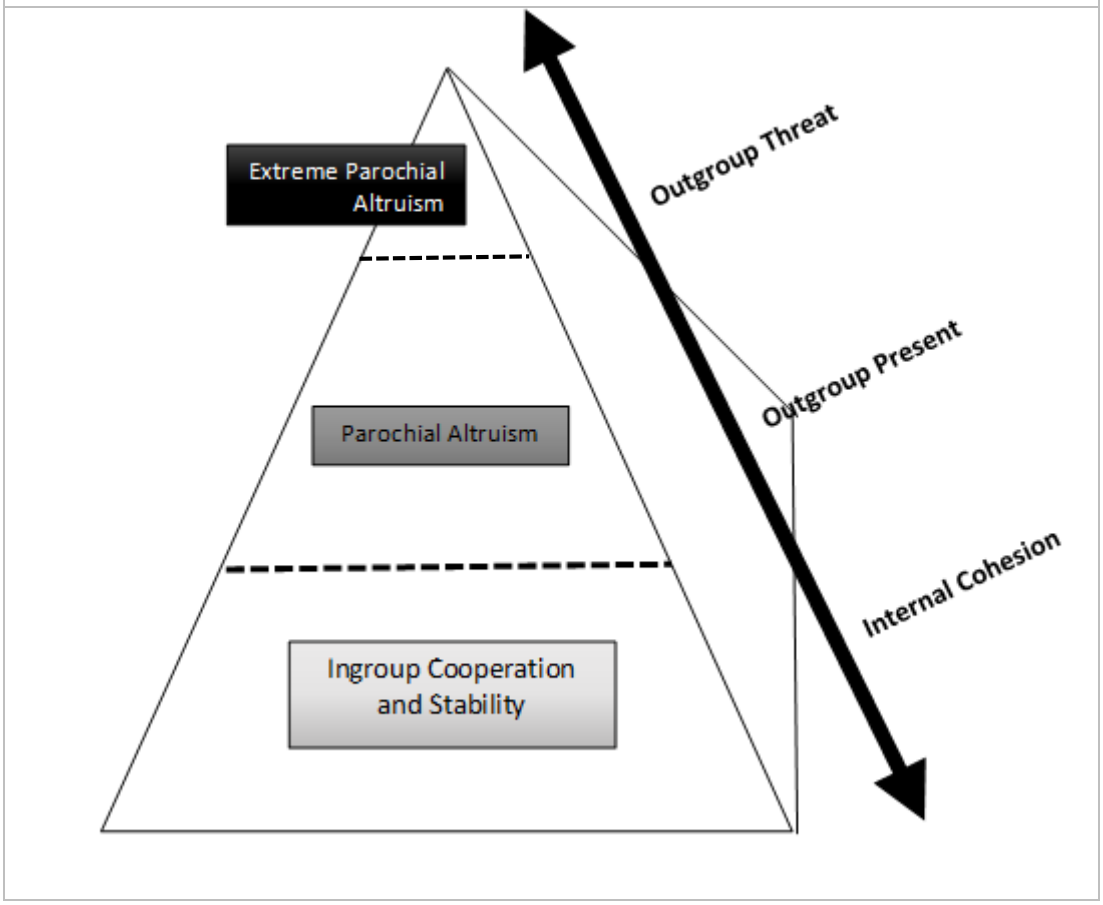
His disgust at Western (sexual) norms and practices is clear: "You are a nation that practices the trade of sex in all its forms, directly and indirectly... And because of all this, you have been described in history as a nation that spreads diseases that were unknown to man in the past. Go ahead and boast to the nations of man, that you brought them AIDS as a Satanic American Invention." Interestingly, he invites (as does Anjem Choudary 2010) non-Muslims of the West to become Muslim: "We call you to be a people of manners, principles, honour, and purity; to reject the immoral acts of fornication, homosexuality, intoxicants, gambling's, and trading with interest". This might be interpreted as a way to extend the reach of the Muslim group (by absorbing other groups, i.e. non-Muslims), and a way to ensure that Muslim norms and customs are adhered to. This perhaps ties in with a core grievance for Pan-Islamists: "These governments prevent our people from establishing the Islamic Shariah, using violence and lies to do so."

Preventing the establishment of a Caliphate state is indicative of the prevention of maintaining and especially enhancing, the prosperity of the Muslim group (i.e. by preventing the current level of exploitation of Muslims), and also by presenting a more prominent (and legitimate) role in international relations. Finally, bin Laden observes overt threats to Muslims in Palestine and beyond: "you attacked us and continue to attack us… [on Israel] years overflowing with oppression, tyranny, crimes, killing, expulsion, destruction and devastation… You attacked us in Somalia; you supported the Russian atrocities against us in Chechnya, the Indian oppression against us in Kashmir, and the Jewish aggression against us in Lebanon." In response to these grievances, parochial altruism in the form of vengeance on behalf of the ingroup is called for: "Allah, the Almighty, legislated the permission and the option to take revenge. Thus, if we are attacked, then we have the right to attack back…" In this case, Allah sanctifies and justifies vengeance. Evolutionarily, revenge is a way to show strength and deter future attacks (e.g. Neuberg et al. 2011).

Lethal Mind-sets: Parochial Altruism

Figure 19 presents the 'Parochial Altruism Pyramid', which is a more detailed representation of Face 3 of the pyramid model proposed in Chapter 1. The parochial altruism mechanism (and social identity processes) are normal psychological mechanisms (processes) that facilitate the process of radicalisation and terrorism. However, it is acknowledged that they may also be influenced, and directed by features of radicalisation (i.e. ideology).

Figure 19 Terrorism as an Act of Extreme Parochial Altruism



The base of the pyramid represents features of group living (including the importance of groups for individuals' survival and fitness). The base of the pyramid is also where evolved mechanisms that encourage cooperation, cohesion and stability within a group are placed. Within this section of the pyramid are attitudes and behaviours of bias towards the Muslim Umma that are more akin to identification (i.e. adherence to norms). The dashed line separating this section of the pyramid from the parochial altruism mechanism, represents the blurry lines between intragroup cooperation and stability, and parochialism in the form of recognition and adherence to group boundaries, and non-cooperation with outgroups. In this section, parochial altruism is not violent, but may include fear, avoidance, disgust, and non-cooperation. This aspect may shed light particular features of radicalisation. The presence of outgroups is thought to trigger parochial altruism. The threat of *harm* to ingroups from outgroups may be associated with more extreme parochial altruism (which is again a blurry distinction), which is often associated with defensive aggression and vengeance

(deterrence). Terrorism is proposed to be an act of extreme parochial altruism in response to evolutionarily relevant cues of threat to the Muslim Umma from the Western (non-Muslim) outgroup.

Presence of Outgroups and Sensitivity to Cues of Threat

Some individuals may be more sensitive to cues of threat, and therefore parochial altruistic attitudes and behaviours than others. Males are often considered more belligerent (warriors) than females and there is good evidence to support this notion (van Vugt 2009; De Dreu et al. 2010; Wrangham & Peterson 1997; Archer 2009; Wrangham & Wilson 2004; Navarrete et al. 2010). Males had the most to lose and the most to gain from intergroup conflict. They were, and still are, more likely to die in conflict, and are more willing to participate in it. Male fitness could be markedly enhanced by successful participation in conflict with other groups in terms of access to resources, and females (McDonald et al. 2012).

Research has shown that oxytocin increases male capacity to perceive intergroup conflict, but not females, whose capacity to discern kinship is instead enhanced (Fischer-Shofty et al. 2012). Males tend to possess a general social dominance orientation, and in competition, express not only higher levels of testosterone, but also increased levels of *intra*group cooperation (Huoviala & Rantala 2013; van Vugt et al. 2007; Navarrete et al. 2010). This suggests an important and intricate interaction between biology and context that is mediated by culture, the latter because males are typically encouraged to be warriors and females are not (Gelfand et al., 2012; Konner, 1982, 2011; McDonald et al., 2012). Whereas male responses to intergroup threat are likely to include aggression, anger, and hostility, females are more likely to fear and avoid outgroups, especially outgroup males who may represent a potential threat of sexual coercion or disease (Navarrete et al. 2010; Navarrete et al. 2009; Navarrete et al. 2007). Perceptions of cues triggering parochial altruism, and parochial altruistic behavioural responses may be influenced by sex.

Dispositional factors may also influence the way in which threats are perceived from the outgroup (Faulkner et al. 2004; Schaller, Park, et al. 2003). Those who are concerned with disease, or who are in contexts in which a concern about disease is primed, are more likely to fear, indicate disgust, and avoid outgroups (Faulkner et al. 2004; Huang et al. 2011; Schaller & Park 2011). Those who worry about their own safety (i.e. see the world as a dangerous place), or are primed to feel vulnerable to harm, are more likely to associate threat and harm with outgroups (Wennekers et al. 2009; Schaller, Park, et al. 2003). The behavioural outcome is likely to be fear and avoidance.

Exposure to violence indicates increased parochial altruistic attitudes, as does experience of outgroup members harming ingroup members (Voors et al. 2012; Bernhard et al. 2006). The perception of morality (over instrumentality) is associated with supporting extreme outgroup hostility (Ginges & Atran 2011). Individuals are more parochial when they experience positive emotion (e.g. joy) when witnessing outgroup others in pain (Hein et al. 2010). Individuals who indicate social dominance orientation are more likely to indicate parochial altruistic attitudes and possibly behaviours (Pratto et al. 2006; Kurzban & Leary 2001). Parochialism may also occur when individuals confuse self-interest for group-interest indicating that those who are more group-, rather than self- centric will display more parochial altruism attitudes and behaviours (Baron 2001).

Predictions of Parochial Altruism

There are a number of ways in which the concept of parochial altruism may be useful for understanding terrorism and radicalisation. Firstly, it provides an evolutionary root for the importance of groups to individuals, which is something that is largely based on notions of 'belongingness' and 'self-esteem' in terrorism literature, and SIT. On the basis of the importance of groups, it also stipulates a set of conditions and cues that

would have triggered parochial altruism in our ancestors. Parochial altruism may be triggered in humans today when faced with these cues, which might enhance our understanding of the conditions that trigger perceptions of grievances and threat to the Muslim group. It also predicts that there are certain parochial altruistic responses associated with certain cues and conditions. Therefore, it may be able to shed light on particular features of radicalisation (including increasing adherence to norms, and avoidance of non-Muslims).

Additionally, it indicates individual variation in sensitivity to parochial altruism, including a biological basis for sex differences, which may be insightful for understanding the stronger propensity for males to become involved in terrorism over females. These insights may prove useful for understanding individual variation in terrorism and radicalisation also. The notion that individual vulnerability may influence how grievances and threats are perceived and responded to in terms of parochial altruism, is important because personal vulnerability is a core risk factor associated with involvement in terrorism. Finally, terrorism can be considered an act of parochial altruism – albeit an extreme case – but not one that is particularly different from other types of intergroup conflict that have occurred throughout the ages. Terrorism would be a good example of mismatch however, where the fitness advantages of parochial altruism are misplaced in the modern world.

Whilst the concept of parochial altruism is useful for shedding light on these features of terrorism, it is a relatively under investigated concept, particularly with regards to the issues most relevant to terrorism and radicalisation. There are a number of predictions that can be made on the basis of this chapter, and these are investigated experimentally in this thesis. Firstly, parochial altruism is expected to be present (attitudinally and/or behaviourally) to some degree in *all* humans. It is also predicted to be variable across individuals, some will be more parochial than others. Certain contexts are predicted to trigger parochial altruism and these contexts may have associated parochial altruistic responses. However, parochial altruism is likely to be present in *any* intergroup context, even the mere presence of outgroups. Perceptions

of intergroup threat may be triggered particularly where there are cues indicative of resource encroachment, norm differences and threats of disease, asymmetry in group sizes, absorptions into a larger group, or annihilation. Expected behaviours include fear, avoidance, disgust, aggression and hostility towards outgroups, and bias and favouritism towards the ingroup to the detriment of self-interest. Males will be more parochially altruistic than females in intergroup contexts, whilst females will be more parochially altruistic than males in situations of kinship.

On the basis of smaller group sizes (or weaker groups), minority groups should be *more* parochially altruistic than majority groups because they would have been at greater risk of resource encroachment, absorption, and extinction from larger groups, and would have therefore benefitted from parochialism in the form of avoidance, or aggressive defence. Religious people should be more willing to engage in parochial altruistic behaviours than non-religious people. Group-centricism, rather than self-centricism will be associated with parochial altruism, and this should be especially expected where groups are important to individuals (as in religion). Vulnerability influences the way in which intergroup threats are perceived and should therefore enhance parochial altruistic responses. The next chapter presents the experimental paradigm that investigates each of these predictions in turn.

5. Investigating Parochial Altruism

Introduction

This thesis proposes that the parochial altruism mechanism is present in all humans, irrespective of membership in terrorist groups or not and may be insightful for understanding certain features of terrorism and radicalisation. This chapter details the empirical paradigm designed for investigating parochial altruism. Although perhaps triggered, enhanced, and directed by propaganda, ideology, socialisation, and indoctrination, parochial altruistic attitudes (and behaviours) are present *prior* to this level of engagement.

Gathering data on terrorists and terrorist groups is fraught with difficulty, and access to these individuals is notoriously limited (Silke 2001; Jackson et al. 2007). A key approach of this thesis is its focus on *similarities* (rather than differences) between terrorists and non-terrorists, and the emphasis of *universal* cognitive mechanisms. This project is able to do what many radicalisation and terrorism researchers do not do – utilise non-terrorist, non-extremist participants to gather for empirical data for analysis. To investigate the capacity for parochial altruism, terrorist/extremist individuals are not required for study. They may actually hinder the ability to draw out these mechanisms due to the likelihood that those same mechanisms have already been influenced by the individuals' experiences and exposure to the terrorist/extremist world. Some scholars have used members of the non-terrorist/extremist population to assess support and willingness to engage in suicide terrorism successfully (Atran 2006; Ginges & Atran 2009; Ginges et al. 2011). Others have acknowledged the utility of experimental paradigms in investigating topics like terrorism, counter-terrorism policy decisions, and other national security issues as a way substitute for a lack of available and accessible data (Arce et al. 2011).

Terrorism research suffer a dearth of first hand data collection which is unsurprising given the relative rarity of the act, and the understandable efforts of terrorists maintaining their freedom. Very few academics manage to meet with known terrorists and there are many issues – methodological and ethical – that present problems for data collection and analysis (Taylor & Horgan 2006; Taylor & Quayle 1994; Richardson 2006; Horgan 2009b). Ethically, there is a risk to safety, due to the necessary close proximity to people who are considered to be dangerous, violent criminals. Researchers are bound by law and ethics to report any information that might prove useful to preventing any potential attack, and the anonymity of sources is very much a grey area in such situations. Many more potential issues exist.[26]

Empirical challenges include the influence that ideology, propaganda, socialisation, indoctrination, and involvement in semi-clandestine, terrorist groups has on an individuals' memory, or at least perceptions or presentations of their reasoning for becoming members of a terrorist group (Horgan, 2009a). During radicalisation, exposure to ideology and socialisation, influences reconstruction of initial reasons, motivations, and attitudes, that led individuals towards increasing support and involvement (John Horgan 2012). Reasons become couched in ideology, and reframed to fit with experiences of socialisation and indoctrination (Horgan, 2009a; Taylor & Quayle, 1994). Interviews with terrorists likely include selection bias on the basis that certain individuals agree and not others. Emphasis remains very much *post*-radicalisation. Whilst this is perfectly suitable for understanding the lives of terrorists and *how* they became involved in terrorism, it may be less useful to understand *why* people become involved. We cannot assume that terrorists are telling the truth about their reasons for becoming involved, or are even cognizant of them. Studying terrorists *as* terrorists (with all the conceptual and subjective limitations this presents), to understand radicalisation may be less insightful that studying 'normal' non-terrorist individuals.

[26] Horgan's book Walking Away From Terrorism discusses his experiences meeting with various individuals belonging to and formerly members of terrorist groups (2009b). He also discusses problems with data collection and analysis in further detail in Chen et al (Horgan, 2009).

The parochial altruism mechanism should be present in us all and may be influenced by particular variables (such as sex, group size, situational context). If parochial altruism is indeed present in us all, it should be accessible to empirically investigate, without having to attempt to gain access to terrorists. There are a number of potential methods to test parochial altruistic attitudes including focus groups, and interviews, or surveys. Newspapers, biographies, autobiographies, and life histories could be scoured for instances suggestive of parochial altruistic attitudes and behaviours. The major problem with these methods is the difficulty in triggering and accessing what is a largely unconscious mechanism, a mechanism that influences attitudes and behaviours without necessarily being aware of that influence. As such, methods that access explicit – that is, conscious thoughts and attitudes – is limited by a number of other variables (including context, group membership, social desirability, to suggest but a few). Given that parochial altruism is a cognitive mechanism triggered in certain situations, it should be investigated with as little context as possible in order to access a baseline reading. A method that is context-free (in terms of group membership), and that has the capacity to access implicit parochial altruism so individuals will not be able to confound their responses according to social desirability, political correctness, or other types of self-moderation is needed.

On the basis of these criteria, parochial altruism is investigated with an experimental paradigm conducted with student participants. This chapter overviews that paradigm in detail, and the next (Chapter Seven) presents the results. There are four phases to the overall design:

1. Participants first provided demographic details and were then exposed to a situational context of either conflict or cooperation between groups (or controls). These conditions were the independent variables.
2. An implicit measure investigated parochial altruistic attitudes, measuring them at a subconscious level. These data formed one of two dependent variables.
3. A resources allocation game investigated parochial altruistic behaviour. These data formed the second dependent variable.

4. Explicit personality surveys enabled investigation for associations and correlations between parochial altruistic attitudes and behaviour.

Limitations of Experiments

Although there are notable advantages of conducting experimental research, including: the capacity to control variables and look for cause-and-effect relationships, testing theories, replication, and generating quantitative data from which to infer about the wider population, there are also some disadvantages (for a review see McDermott 2002). To control variables (which is not always possible), an artificial situation is used to investigate behaviour. This can be in a laboratory, and/or include conducting strange tasks. Experiments therefore, whilst good for internal validity, are not ecologically valid. This makes it difficult to accurately generalise from the somewhat bizarre behaviour that is often prompted by experiments, to the population. Additionally, participants of psychology experiments tend to be WEIRD (Western, Educated, Industrialised, Rich, Democratic) which again leads to questions about generalizability not only across cultures, but within also (Henrich et al. 2010). Finally, demand characteristics and ethics are important to consider. The researchers may give unintentional clues as to the purpose and predictions of the study, which could influence participants' behaviour. It is likely that the purpose and predictions of the study (amongst other features) are kept from participants until debriefing, which indicates that deceit is likely an issue in many experiments.

The chapter is presented as follows. A brief overview of the entire experimental paradigm is presented. This overview provides limited information as each element is described in detail in following sections for clarity. The second section describes the implicit measure used to investigate parochial altruistic attitudes. It explains what the measure is, including past successes and limitation before going on to explain how it was designed to investigate parochial altruism. The next section explains how situation contexts of intergroup conflict or cooperation are incorporated into the

paradigm, before detailing the resource allocation game designed to investigate parochial altruistic behaviour. Explicit personality surveys are then discussed briefly, and limitations of the paradigm are then overviewed.

Overall Empirical Design and Procedure

Using Experiments to Investigate Parochial Altruism

Parochial altruism is a relatively new concept, although many of its core features overlap with theory and research established in social psychology (e.g. social identity approach, ethnocentrism) years prior to the evolutionary approach giving it the level of influence it has today (Gintis et al. 2003; Choi & Bowles 2007; Sumner 1906; Tajfel & Turner 1979; Turner et al. 1987; Bernhard et al. 2006). As an evolutionary concept however, there is a relative dearth of empirical work, and much that has been written is theoretical and model based (although De Dreu et al. 2010 offers some interesting insight into parochial altruism and experimental methods to investigate it using oxytocin) (Chapter 4).

Parochial altruism can be behavioural and attitudinal.[27] Since parochial altruism is linked to our ancestors' capacity to survive and prosper in group scenarios it is a proximate mechanism, having a discreet influence over individuals today and in the past when its function helped to maintain or enhance the fitness of the individual (in genetic terms). Whilst humans are able to control their own behaviour and thoughts to an extent, they are nevertheless modified and/or restrained by situation (conformity, social desirability), *and* mechanisms such as parochial altruism. They should therefore

[27] The tendency to evaluate objects, entities, contexts etc. in a particular way that might be learned, and influenced by emotion, cognition. Attitudes may influence behaviour. (Turner & Giles 1981).

be present and accessible albeit indirectly. It is a concept that requires investigation at the individual level of analysis.

The difficulty in measuring what are essentially implicit, or subconscious mechanisms like parochial altruism, is part of the reason for the relative lack of empirical research investigating them. Whilst the study of parochial altruism is at a fairly early stage in development, a great deal of work, empirical and otherwise, has gone into the study of social identity, particularly from a socio-cognitive perspective (Brewer, 2001; Brewer & Gardner, 1996; Brewer, 1991; Derks, van Laar, & Ellemers, 2006; Greene, 1999; Haslam et al., 2001; Haslam, Oakes, Reynolds, & Turner, 1999; Hertel & Kerr, 2001; Hogg & van Knippenberg, 2003; Hutchison, Jetten, Christian, & Haycraft, 2006; Inzlicht & Kang, 2010; Lalonde, 2002; Tajfel, Billig, & Bundy, 1971; Tajfel & Turner, 1979; Turner et al., 1987, to name but a few). Given the intertwined nature of social identity and parochial altruism, the methodological approach used to investigate parochial altruism is greatly inspired by work within social-cognitive psychology.

Social identity has been investigated in a variety of different ways, and this variety is reflected in the way that it is conceived of, and measured (minimal group paradigm, implicit association tests, field studies, open ended interviews, surveys, and scales etc.; Haslam et al., 2001; Karpinski & Steinman, 2006; Levin, Henry, Pratto, & Sidanius, 2003; Lalonde, 2002). Such approaches tend to be highly operationalised and focus on either arbitrary group memberships (X or Y, Klee or Kandinsky), or single broad group memberships (e.g. ethnicity, race, religion, political affiliation). It may be that the process of social identity is rooted in the parochial altruism mechanism. The fundamental features of social identity theory – particularly the tendency to see oneself as an ingroup member, to show bias towards ingroups, and to seek maximal differentiation from outgroups – are argued in this thesis, to be rooted in our evolved propensity towards parochial altruism.

Social identity and parochial altruism should be evident in all individuals to an extent, irrespective of group membership or behavioural choices, and so a test of these mechanisms need not be limited to those who have, or would participate, in any form of violent extremism. It may be *more* helpful to investigate the *general population* rather than the small minority of individuals who are in all likelihood inaccessible for this type of research, although a comparison between these samples would be fascinating. Terrorism research rarely focuses on the population wider than the violent extremist, or extremist groups, much less investigating the wider population for mechanisms that play important roles in the process of radicalisation, and as such, investigations like this are rare and potentially cutting edge in the field (e.g. Arce et al. 2011; Ginges & Atran 2011; Ginges et al. 2011).

There are plenty of tools within social and evolutionary psychology that offer novel ways of investigating psychological mechanisms. Well-known experimental paradigms were considered (e.g. the Wason selection task,[28] Go/No-Go association task[29]). However, the implicit association test (IAT) was the preferred measure for reasons that are explained below (Greenwald et al. 1998; Greenwald et al. 2003; Greenwald & Sriram 2010; Cosmides 1989; Nosek & Banaji 2001; Wason & Shapiro 1971). IAT can be utilised to investigate different concepts, both within and outside of social psychology, which is discussed later in the chapter. It has been used to measure parochial altruism, although the study was perhaps better geared towards measuring standard social identity rather than parochial altruism (attributes were broadly positive or negative, and categories were ethnic/national groups) (De Dreu et al. 2011). This project differs because it specifically tests broad and generic ingroups and outgroups against explicitly parochial altruistic attributes. This emphasis on parochial altruism as a linked concept (protection and danger associations) is what

[28] The Wason selection task is a test of logical reasoning that has been implemented in various experiments investigating evolutionary traits (Cosmides 1989; Cosmides & Tooby 1992). It uses the 'if P, then Q' sequence in which participants are given a logical dilemma to solve. The Wason election task proved tricky to effectively utilise with parochial altruism and as such was rejected as a measure to investigate it.

[29] The Go/No-Go test is much like the IAT with the exception that only one category is used for association with particular attributes.

distinguishes this project from standard social identity IATs, and the IAT conducted by De Dreu et al. (2011). More details are given below.

The Implicit Association Test

Overview

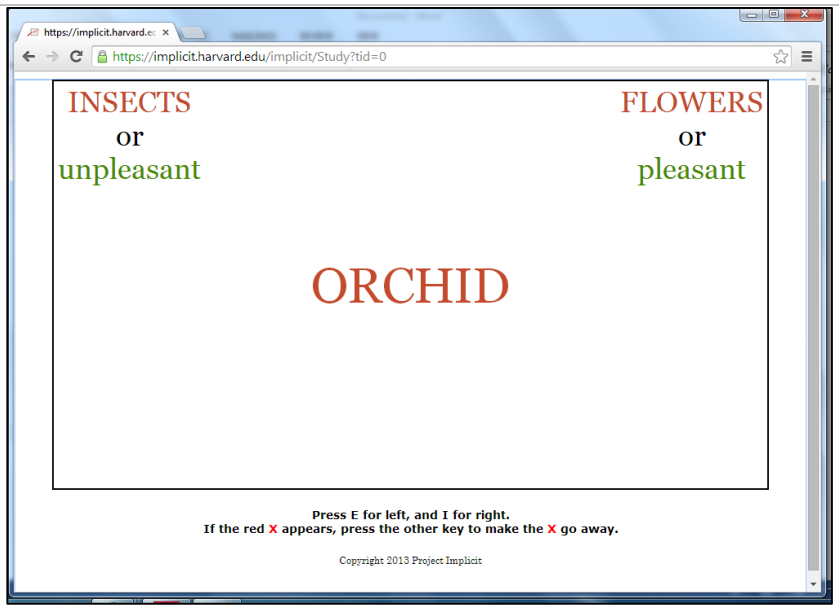
The implicit association test (IAT) is an established method originally developed to measure implicit, automatic associations, or preferences (e.g. Greenwald & Banaji 1995). IAT is considered to be one of the more effective and reliable measures of implicit phenomena (De Houwer et al. 2009). The basic premise is that it is easier for people to categorise items (and therefore perform the test more quickly and accurately) when the associations being made are consistent with their own subconscious evaluation of the category that the items belong to, or represent. "[T]he IAT procedure seeks to measure implicit attitudes by measuring their underlying automatic evaluation" (Greenwald et al. 1998, p.1464).

IAT is a computerised tool that measures relative strength of associations between concept categories and attributes. A prime and a target stimulus are experienced in quick succession by the participant, who responds to the prime and the target stimuli's with some kind of motor skill task. IAT requires participants to hit an appropriate key on the keyboard that corresponds with the position of categories on the screen ('E' represents categories on the left side of the screen and 'I' represents categories on the right side of the screen) each category. The speed and accuracy of this classification indicates the strength of the associations between the concept category and the attribute category.

People tend to associate flowers (concept) with positive words (attributes), like joy, and beautiful, and insects with negative words like ugly, and bad. When participants

are forced to categorise flowers with only negative words, or insects with positive words, they tend to take much longer to make these categorisations, and also make more errors (De Houwer 2001, p.443). Categorisation of concepts (e.g. flowers) and attributes (e.g. beautiful) that are logically compatible are likely to occur much faster with fewer erroneous responses. Compatible associations are easier and quicker to make, whereas incompatible associations require more thought and attention (Figure 20).

Figure 20 Screenshot of Flowers/Insects IAT: Combined-Category Task[30]



IAT uses 'response priming' which reduces the time it takes for a subject exposed to one stimulus item to process a similar (target) stimulus item since the prime activates specific associations which is then at least partially activated already by exposure to the first stimulus item. This is known as a positive prime (De Houwer et al. 2009; e.g. De Houwer 2001). A negative prime *increases* the time it takes to process a stimulus item, however, more effort is required to ignore automatic associations and so the time taken to categorise stimulus items correctly increases (De Houwer et al. 2009; De Houwer 2001; Greenwald et al. 2003; Schnabel 2007). In IAT, the 'positive prime' is

[30] All Flower-Insect IAT screenshots are from Project Implicit (https://implicit.harvard.edu/implicit/).

the automatic association between compatible-category combinations (e.g. flowers and pleasant), and the 'negative prime' is the not so automatic association between incompatible tasks (e.g. *insects* and pleasant, or flowers and unpleasant). Automatic associations between incompatible category combinations are overridden in order to perform the task, which requires more cognitive attention, and hence time.

Design

IAT is a computerised measure that requires participants to classify target-concepts and attribute categories both separately and combined. Target-concept categories can be of any grouping (e.g. flowers and insects, males and females, ingroups and outgroups). Target concept categories are made up of relevant associated 'items'.[31] Target-attribute categories usually represent some kind of preference or attitude (e.g. pleasant or unpleasant, good or bad). Target attribute categories are made up of relevant associated 'items'.[32] The core aspect of IAT is where participants categorise both target concepts *and* attribute categories *at the same time.* That is, categories of flowers and insects are classified at the same time as categories of pleasant and unpleasant. The key element is that one of each set of categories shares a key with the other (flower + pleasant, and insect + unpleasant).

Procedure

IAT consists of seven blocks (Figure 21). Blocks consist of trials. Trials are single classification tasks where items are categorised as belonging to one of two, or one of four, concept categories. Blocks are preceded by an instruction page describing the procedure for each block. The first two blocks are practice runs to allow participants to get used to the procedure and the items being categorised. Block one randomises

[31] If 'flowers' is a target-concept then some relevant items might be words or pictures of daisies, roses, lilies, etc.

[32] If 'Pleasant' is a target-concept then some relevant items might be words such as, 'lovely', 'cheer', 'friend', etc.

the presentation of items for each category 20 times (known as a trial, so there are 20 trials in this block), and sees participants categorising target concepts (the independent variables) using the 'E' key on the computer keyboard to represent the left hand side of the screen, or the 'I' key to represent the right hand side of the screen, depending on which side of the screen each variable is located (the location of which is randomly assigned by the programme). Reminder labels, in the form of category names appropriately positioned to the left or right, remain on the screen throughout all blocks. Each block is punctuated with an instruction page which delineates the necessary procedure for each block.

Figure 21 Schematic Representation of Flowers and Insects IAT

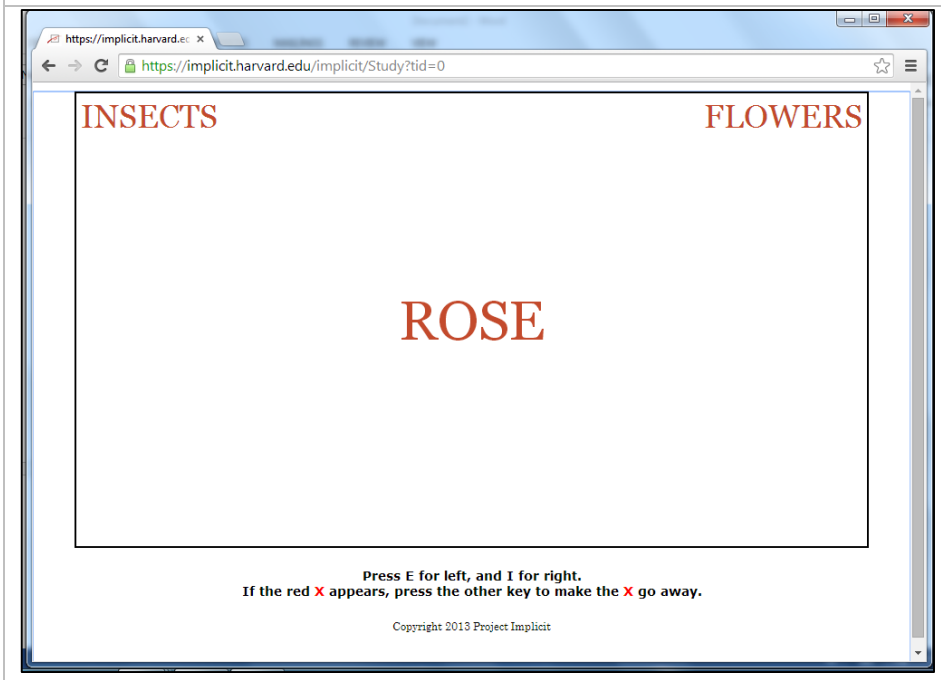
Flowers Versus Insects IAT					
Block	1	2	3 and 4	5	6 and 7
Task	Target-Concept categorised	Attribute categorised	Combined categorised	Reverse concept categorised	Reverse combined categorised
Categories	▪Flowers ▪Insects	▪Pleasant ▪Un-pleasant	▪Flowers + ▪Pleasant ▪Insects + ▪Un-pleasant	▪Flowers ▪Insects	▪Flowers + ▪Unpleasant ▪Insects + ▪Pleasant
Sample items	▪Rose ▪ Lily ▪Wasp ▪Flea	▪Nice ▪Lovely ▪Ugly ▪Poison	▪Gentle ▪Enjoy ▪Stranger ▪Attack	▪Heaven ▪Cheer ▪Centipede ▪Moth	▪Tulip ▪Vomit ▪Gnat ▪Friend

Reproduced from Project Implicit (https://implicit.harvard.edu/implicit/).

The first two blocks are practice runs to allow participants to get used to the procedure and the items being categorised. Block one randomises 20 presentation of items for each category 20 times (known as a trial, so there are 20 trials in this block). Participants categorise target-concepts using the 'E' key on the computer keyboard to represent the left hand side of the screen (items associated with insects). The 'I' key

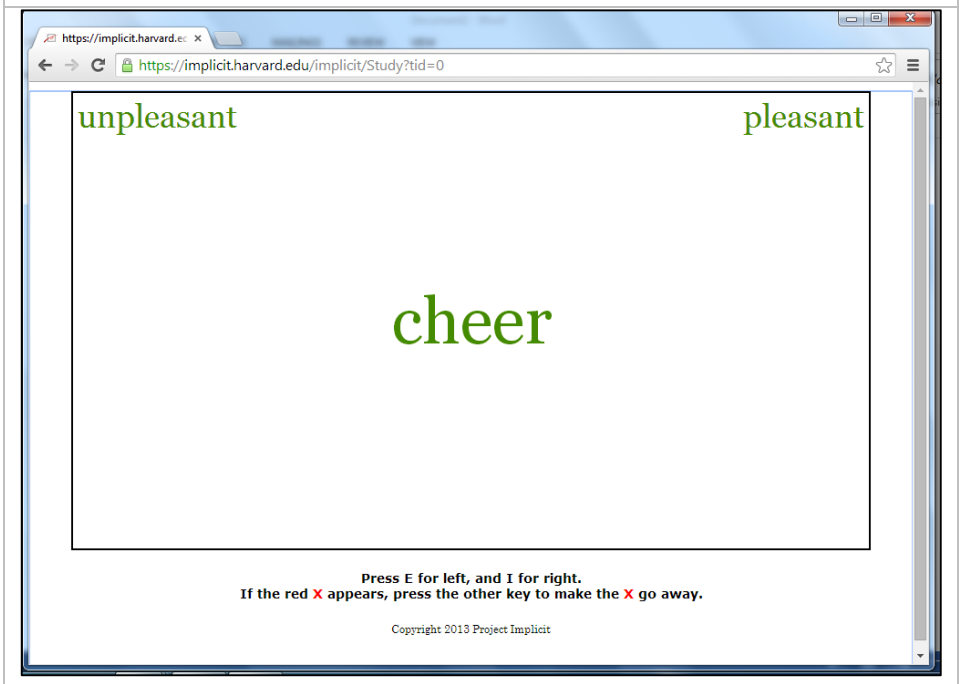
represents the right hand side of the screen (items associated with flowers) (Figure 22). The location of target-concepts is randomly assigned by the programme and switches at block five.

Figure 22 Screenshot of Flowers-Insects IAT: Block 1



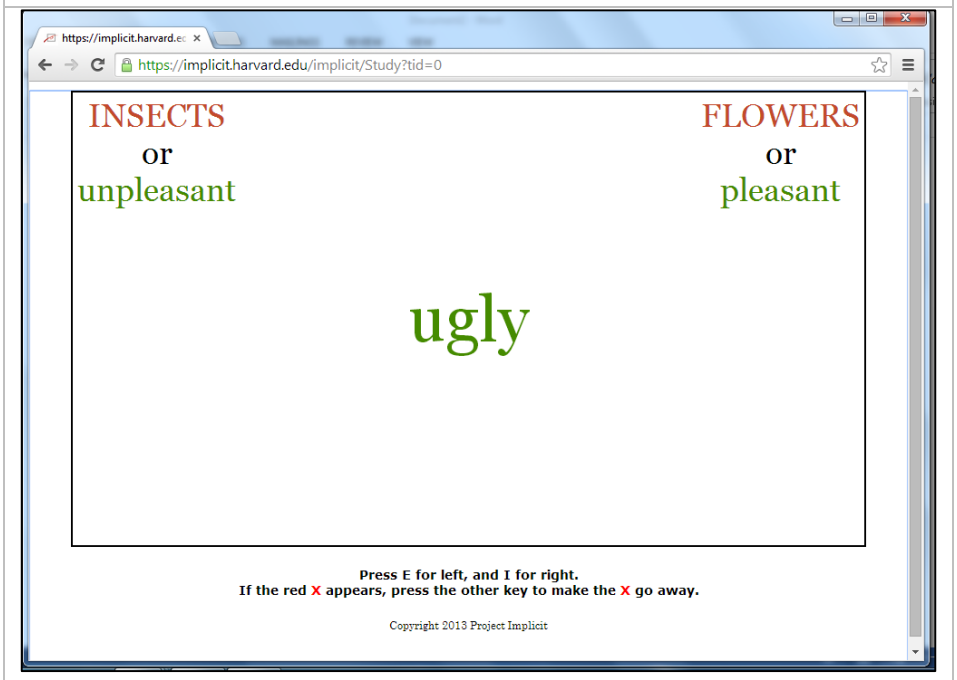
The second block requires participants to categorise attribute items (pleasant, unpleasant) in the same way, again for 20 trials. The side of the screen that the attribute categories are presented is the same throughout the entire test. It is only the target-concepts (i.e. flowers, insects) that switch (Figure 23). The location of target concepts and attribute categories is randomised by the program for each individual to limit any impact the order of presentation of combined compatible or combined incompatible categories has on performance.

Figure 23 Screenshot of Flowers-Insects IAT: Block 2



The third block presents both the target concepts *and* the attribute categories (i.e. pleasant and unpleasant) together. This is the combined category task where participants categorise all four categories (i.e. flowers and insects, and pleasant and unpleasant) together as opposed to separately as they did in blocks one and two. The third block (and the sixth) is typically regarded as a practice block, where there are 40 trials to take into account the need to 'practice' this more challenging aspect of the study. Block four is an exact repeat of block three and is considered the 'test' block (Figure 24).

Figure 24 Screenshot of Flowers-Insects IAT: Block 3&4



Block five then returns to the format of block one. Block five is also a practice run where 20 trials of the target-concepts are categorised. The difference is, however, that the position of the categories on the screen have switched sides. For example, where flowers had initially been presented on the right hand side of the screen (thus the associated key would have been 'I') in the first block onwards, block five would then switch the position of the flowers concept to the left hand side. The key that now represents the category of flowers, is the 'E' key, and insects is now represented by the 'I' key, where before it was represented by the 'E' key' (Figure 25). This is the new position of the category concepts. Attribute categories do not switch sides and remain in the same position throughout the entire IAT. Blocks six and seven are the combined category tasks utilising the new category format, each having 40 trials (Figure 26).

Figure 25 Screenshot of Flowers-Insects IAT: Block 5

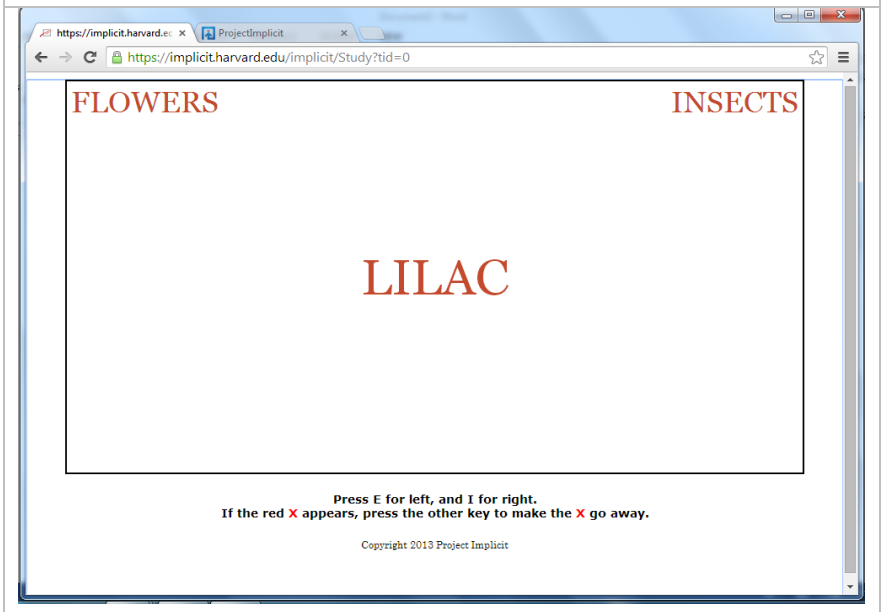
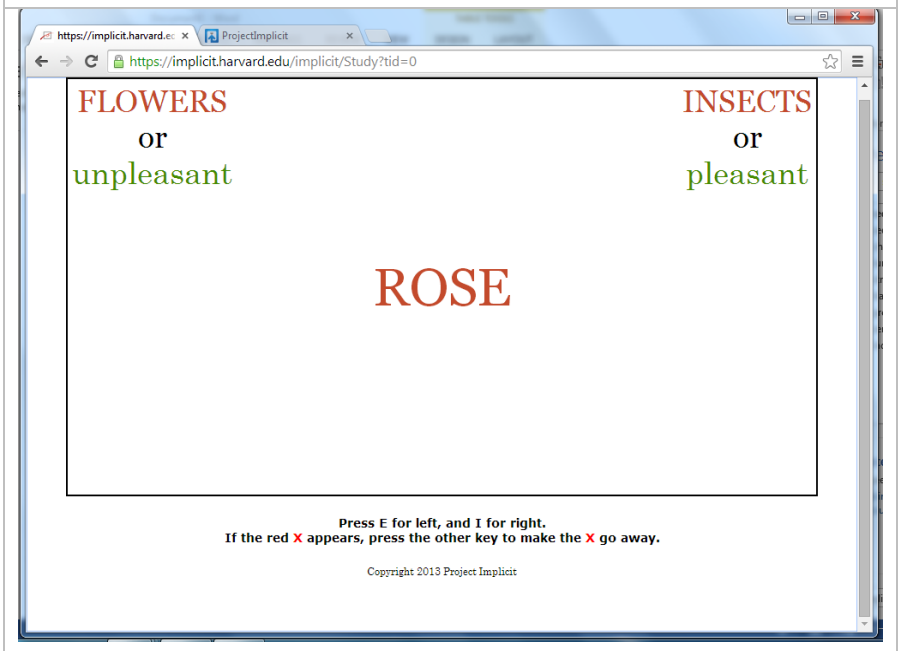


Figure 26 Screenshot of Flowers-Insects IAT: Block 6/7



IAT Successes

IAT has been successfully implemented to investigate preferences between flowers and insects, musical instruments and weapons, and to measure associations of gender

bias, age-bias, religion, race, sexual orientation, academic preferences, dietary preferences, consumer choices, voting behaviour, phobias, condom use, depression, and shyness (Greenwald & Banaji 1995; Dasgupta et al. 2000; Greenwald & Farnham 2000; Greenwald et al. 1998; Nosek et al. 2002; Schnabel 2007; Dasgupta & Greenwald 2001; Olson & Fazio 2004; Rudman et al. 1999; Karpinski & Hilton, J. 2001; Rudman et al. 2001; Asendorpf et al. 2002; Richeson & Ambady 2003; Rudman & Kilianski 2000; Swanson et al. 2001; Nosek et al. 2007; Nosek et al. 2007; Greenwald et al. 2009; Nosek et al. 2009; Teachman et al. 2008; Teachman & Woody 2003; Richeson et al. 2003; Marsh et al. 2001; Farnham et al. 1999; Brunel et al. 2004; Maison et al. 2004; Ottaway et al. 2001; Ashburn-Nardo et al. 2001).

The popularity of IAT as a measure is based on its several advantages (see Greenwald et al. 2009 for a review). It is able to produce statistically large effect sizes with relatively few participants. It is readily adapted to different kinds of constructs and has been implemented as a measure across a wide range of domains. It is a tool that can be used outside of the field of its conception – it has been used in consumer research, and cognitive psychology, political psychology, amongst others. It is able to tap into constructs/associations that may lie outside of people's conscious awareness of them (Greenwald et al. 2009; Albertson 2011; Roccato & Zogmaister 2010).

Perhaps one of the key advantages of IAT, particularly for this project, is its ability to measure individual differences (Greenwald et al. 1998). IAT has been shown to successfully predict a variety of behaviours from nonverbal behaviour (eye blinking, eye contact), impression formation, shyness, anxiety, consumer choices, and voting, which implies that it has a relatively broad utility as a measure capable of capturing individual differences of personal attitudes and beliefs (e.g. Asendorpf, Banse, & Mücke, 2002; Egloff & Schmukle, 2002; Gawronski, Geschke, & Banse, 2003; McConnell & Leibold, 2001; Richetin, Perugini, Prestwich, & O'Gorman, 2007; Roccato & Zogmaister, 2010). Whilst some explicit measures are actually better than IAT for predicting some types of behaviours (food choices for example), it is also true that explicit measures tend to perform very poorly when the topic under investigation

is sensitive to social desirability concerns (Hofmann et al. 2005; Conner et al. 2007; Karpinski et al. 2005; Greenwald et al. 2009).

IAT vastly outperforms explicit measures in predicting behaviour where there is some sort of social desirability potential. No other area has this been more apparent than the investigation of discrimination and prejudice (Greenwald et al. 2009; Olson & Fazio 2004). IATs ability to tap into subconscious associations makes it a difficult measure to deliberately fake responses to, or manage impressions of what the test is actually measuring (Greenwald et al. 1998; Greenwald & Banaji 1995; Greenwald & Nosek 2001; Lane et al. 2007). It is this capacity to tap into subconscious associations rather than the more consciously regulated that pits IAT as a method that in some cases circumvents more explicit measures, such as survey questionnaires, which do not often correlate with IAT scores.

IAT has successfully performed in several 'real-world' situations.

- Predicted voting decisions of decided and undecided voters (Arcuri et al. 2008).
- Differentiated between non-suicidal, suicide considerers, and suicide attempter adolescents (Nock & Banaji 2007).
- Differentiated non-self-harming and self-harming adolescents, and provided a reasonable prediction of self-harm beyond that predicted by typical psychiatric tools (Nock & Banaji 2007).
- Illustrated reduction in spider phobia in spider phobic people's after-exposure therapy (Teachman & Woody 2003).
- Gauged extent of panic symptoms, including agoraphobia and distress in response to a panic trigger and predicted change in panic symptoms over three month treatment period (Teachman et al. 2008; Teachman et al. 2007).
- Fewer thrombolysis recommendations were predicted, and made for black heart patients than white which was linked to implicit bias against black patients by physicians (Green et al. 2007).

- Illustrated that whilst non-paedophilic offenders associate adults with sex, paedophilic offenders have associations between children and sex (Gray et al. 2005).
- Demonstrated its potential as a tool for lie-detection in autobiographical events (Sartori et al. 2008).

Whilst some of these studies reveal rather disturbing results, it should be clear that IAT can be of great utility in a) measuring individual differences in associations (Greenwald et al. 1998); b) measuring the change in associations as participants' perceptions change (Dasgupta & Greenwald 2001); c) predicting behavioural events that explicit results fail to detect. IAT is thus a useful tool for investigating parochial altruism particularly since it is unlikely that people will necessarily be aware of such inclinations, nor would they necessarily be inclined to expressing them honestly if they were.

Limitations of IAT

Despite the popularity and success of IAT, there are some criticisms and limitations of the tool. IAT is a relative measure. It measures *relative* associations between one object and another - it does not measure one attitude towards a single object and thus taps into attitudes that are inherently comparative and rooted in the specific categories presented (Brunel et al. 2004). IAT responses may be confounded by additional factors, such as an individual's cognitive ability (Mcfarland & Crouch 2002). Alternatively, others suggest that IAT measures the difficulty of the classification task for individuals, rather than underlying attitudes (Brendl, C. et al. 2001). Some have suggested that the construct validity necessary for determining that IAT measures individual differences, rather than social and cultural level constructs is insufficient (Karpinski & Hilton, J. 2001; Olson & Fazio 2004; Rothermund & Wentura 2004). Others have questioned whether familiarity with one object over another influences IAT responses (Dasgupta et al. 2003; Olson & Fazio 2003). Another complaint is the

tendency for correlations between IAT scores and 'explicit measures' (e.g. self-reported surveys and questionnaires) to be low to non-existent (Richetin et al. 2007; Conner et al. 2007).

Parochial Altruism: The Experimental Paradigm

The current project investigated parochial altruism is two main ways. It utilised IAT to investigate parochial altruistic *attitudes*. IAT score provides the basis for these attitudes. It also utilised a novel behavioural game to investigate parochial altruistic *behaviours*. To assess the impact that intergroup scenarios such as conflict and cooperation between groups may have on parochial altruistic attitudes, participants were exposed to a pre-IAT prime. Participants played the behavioural game post-IAT completion, and responded to several explicit measures (self-report questionnaires).

Design

There are four sections to this empirical paradigm which are overviewed here (see sections 1, 2, 3, and 4 for more detail on each). Participants were first exposed to one of four possible pre-IAT primes that served to provide situational information about intergroup contexts (i.e. conflict or cooperation between groups), or control contexts (neutral non-intergroup scenario, and no pre-IAT prime conditions). They then completed three IATs: us versus them (intergroup); family versus strangers (kinship); and Christian/Jewish versus Muslims (religion: context of danger).

IATs are two level repeated-measures meaning that all participants are tested on both conditions of the independent variable. Parochial altruistic attitudes are measured against ingroup *and* outgroup (family *and* strangers, Christian/Jewish *and* Muslims) conditions. Participants then completed a behavioural allocation task before

completing a series of personality surveys. More details on each section is provided in the chapter.

The study took place in a computer laboratory in the School of Social and Political Science of Edinburgh University. It took approximately 90 minutes to complete including a short break and all briefings. The study was split into three separate sections: the briefing and introduction, pre-IAT prime, and IATs were the first section, the behavioural paradigm and break was the second, and the survey section and debriefing was the final. The first section took 30 minutes, and the remaining two took approximately 20 minutes each, with a ten minute break in between.

Participants

Participants were recruited by posters and the university recruitment website SAGE.[33] The advertisements used to recruit participants can be found in Appendix 4. One hundred and twenty-nine University of Edinburgh students participated in this study (47 males, 82 females) in return for a £10 participation fee, and the chance to win a further prize of up to £10. One hundred and nine were completing undergraduate courses, and the remaining nineteen were postgraduates. One hundred and eleven participants were white (Table 8). Table 9 shows the number of participants by religion, with most participants defining themselves Christian, atheist, agnostic, or having no religion. One hundred and nineteen participants were native English speakers, and ten were not. The majority of the participants were born and raised in Western countries, primarily the UK.

[33] https://www.employerdatabase.careers.ed.ac.uk/

Table 8. Participant Ethnicities

	White	Mixed	Asian	Chinese	Arab	Indian
Total	111	8	4	3	1	2
Male	42	1	3	0	0	1
Female	69	7	1	3	1	1

Table 9. Participant Religion

Religion	N
None	20
Christian	24
Hindu	3
Jewish	2
Muslim	2
Atheist	18
Agnostic	13
Other	2
Incomplete	52

The pre-IAT primed contexts were randomly assigned by the programme with thirty-four participants (13 male, 21 female) exposed to no prime, thirty-four (12 male, 22 female) exposed to the neutral prime, thirty-two (11 male, 21 female) exposed to the conflict prime, and twenty-nine exposed to the cooperation prime (11 male, 18 female).

Apparatus

A computer programme that was designed to showcase IAT, a pre-IAT prime, and a series of mandatory and additional personality, survey, and demographic variables was developed in conjunction with a local (non-university) IT Company.[34] It can be accessed here.[35] This programme was designed to be utilised online and was developed with Flash Player (a programme that enables video and animation capabilities).

Other apparatus included ID cards that were provided to participants upon entrance to the computer lab. These ID cards included a two digit number preceded by either the letter 'X' or 'Y'. Each participant was given three cards with the same ID number. This was to ensure that participants were always aware of their ID number and returned to the correct computer upon completing the behavioural section in another room. ID numbers were inputted into the computer by participants as a session code. These numbers served several purposes. Firstly, they were used to track the progress of participants. They were also used as a way to randomly assign participants to an arbitrary group. It was in these arbitrary 'X' or 'Y' groups that the behavioural paradigm was performed, and behavioural scores were related back to the computer-based data through these ID numbers via the session code.

The behavioural paradigm element included a game card that identified participants on the basis of their ID number. This game card consisted of ten perforated allocation tickets to be completed by participants during the behavioural session. It also provided participants with a set of written instructions on the procedure of the behavioural game.

[34] HeeHaw Digital (heehaw.co.uk)
[35] http://questionnaire-1.heehawdevelopment-2.com/

Participants were provided with pens. ID cards and Game cards can be found in Appendix 5.

The researchers were required to ensure the appropriate tickets were scored for the purposes of the experiment, and either included or discarded from the prize draw. Scissors were used for this task. A box was used to make a prize winning draw during debriefing. The tickets included in the draw were those that were not discarded on the basis of participant's allocations.

Materials

Different materials were used in different aspects of the study. Information on materials will be provided here where relevant.

Pre-IAT Primed Context

Two personality survey questions unrelated to intergroup relations were presented to participants at the very beginning of the study where core demographics were requested. These questionnaires were harm avoidance and bravery and were retrieved from the International Personality Item Pool website.[36] The results of these questionnaires were not important to the study, but their inclusion was used to manipulate participants' perceptions that their responses put them in a group with similar others. This was to provide a general and arbitrary group which the intergroup pre-IAT primes could then be based on.

[36] http://ipip.ori.org/

The pre-IAT primes were designed to have interchangeable core words (either conflictual, cooperative, or neutral words). As far as possible the conflict and cooperation words were matched for opposing meanings although this was not always possible. Images were gathered from Flickr [37] (therefore avoiding issues with copyright) and were chosen for their representation of the written text as far as possible. Images, interchangeable words and primes can be found in Appendix 6.

IAT materials

IATs consisted of 48 stimulus words: 10 protection words, 10 danger words, 6 ingroup words, 6 outgroup words, 8 kin words, and 8 non-kin words. There were 14 images used: 7 Muslim images, and 7 Christian/Jewish images. All of these items can be found in Appendix 7.

Behavioural Paradigm

The behavioural paradigm required two separate rooms away from the computer laboratory for each group to perform the task (participants were split into two groups on the basis of their ID numbers, X or Y). Refreshments (cookies and soft drinks) were provided once the behavioural paradigm was completed and participants were encouraged to socialise and have a break from the experiment, before returning to the computer lab to finish.

[37] http://www.flickr.com/

Survey and Mandatory Questions

Mandatory questions were demographic questions that were considered to be important variables (such as sex, ethnicity) and can be found in Appendix 8. Survey Questions were primarily sourced from the International Personality Item Pool (http://ipip.ori.org/) and relevant journal articles.[38]

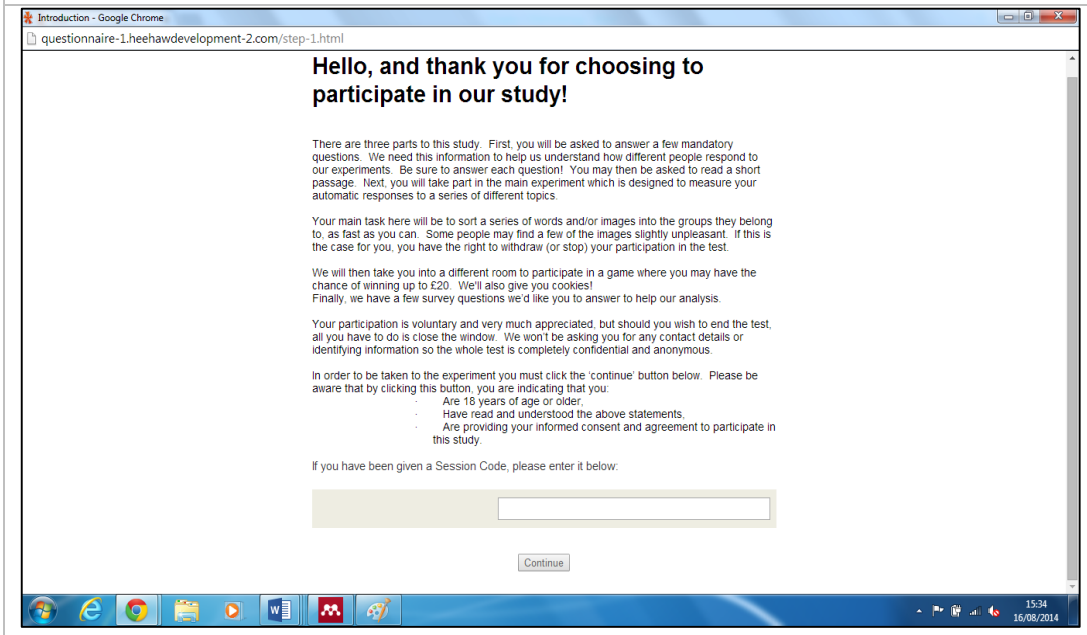
Overall Laboratory Procedure

Upon entering the computer laboratory, participants were registered (for the purposes of tracking participation and payment, although all data was anonymous), asked to take a seat at a desktop computer and enter their university log in and password. Most participants were recruited via the Sage website rather than the posters, but a few people turned up with friends on the off-chance there would be space for them.

Once all were seated and logged in, a researcher asked participants to open up an internet browser (Windows Explorer) and type in the test website address (which was written on the whiteboard at the front of the class). Participants received a briefing from the researcher and instructions from the computer display (Figure 27). The briefing explained to participants that they would be asked to complete tasks that were all explained in the program (Appendix 9), and that once they had completed the first three sets of tasks (mandatory questions, situational context prime, and IAT), they would be taken to another room for a break.

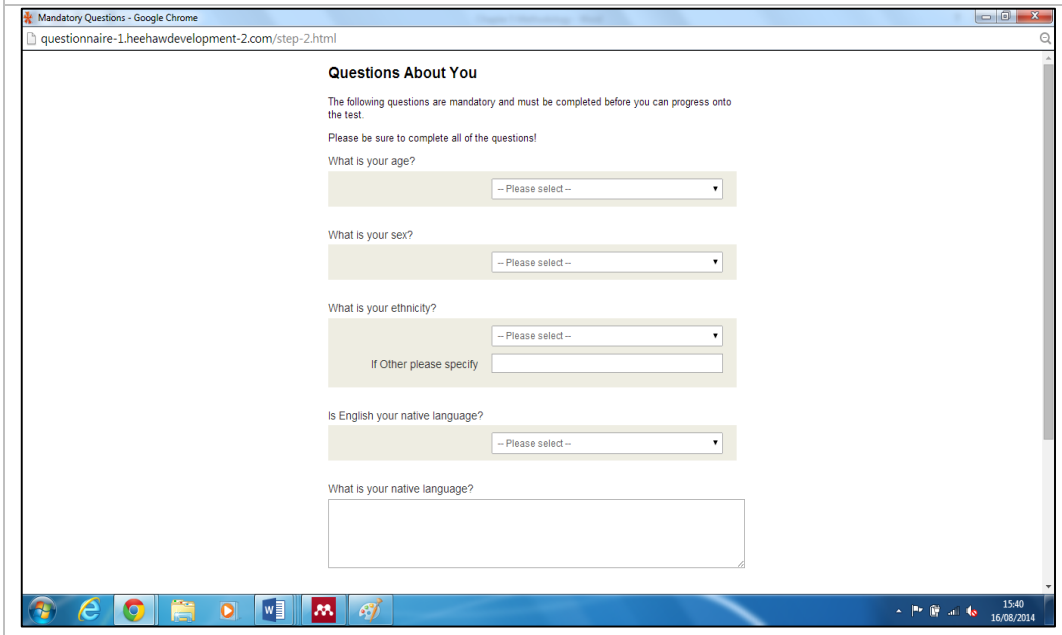
[38] Specifically, Social Dominance Orientation (Pratto et al. 1994).

Figure 27 Welcome and Briefing Page



In fact, participants were split into two groups and led to separate rooms to partake in the behavioural study, after which they enjoyed a break. They were not told any more about this aspect of the study until they participated in it. Participants were told that once they had their break they would return to the computer laboratory, locate the computer they had used for the first set (using their ID numbers as reference), and continue to complete the remainder of the survey. Participants were informed of their right to withdraw at any time, and that their input would remain anonymous. Participants were asked to raise their hands if they had any problems throughout the test. This happened only occasionally and was due to program problems when participants had used Mozilla Firefox as a browser rather than Windows Explorer. Ensuring that the program was opened with Windows Explorer rather than any other browser solved the problem.

Figure 28 Mandatory Questions



Participants first completed the mandatory demographics page that also included pre-IAT prime related survey questions (Figure 28). Once this page was fully completed (the program did not allow further progression unless all fields were complete), participants were then exposed to the situational context page (the pre-IAT prime) (Figure 29). The screen specified a later recall test on this page and encouraged participants to pay attention to it (for all but the no prime control). Clicking continue took them to the IAT section. The first pages provided the instructions for how to complete IAT (Figure 30). These instruction pages are interspersed throughout each IAT to remind participants what to do in line with IAT as designed by Project Implicit (Appendix 10).

Figure 29 Control Pre-IAT Prime

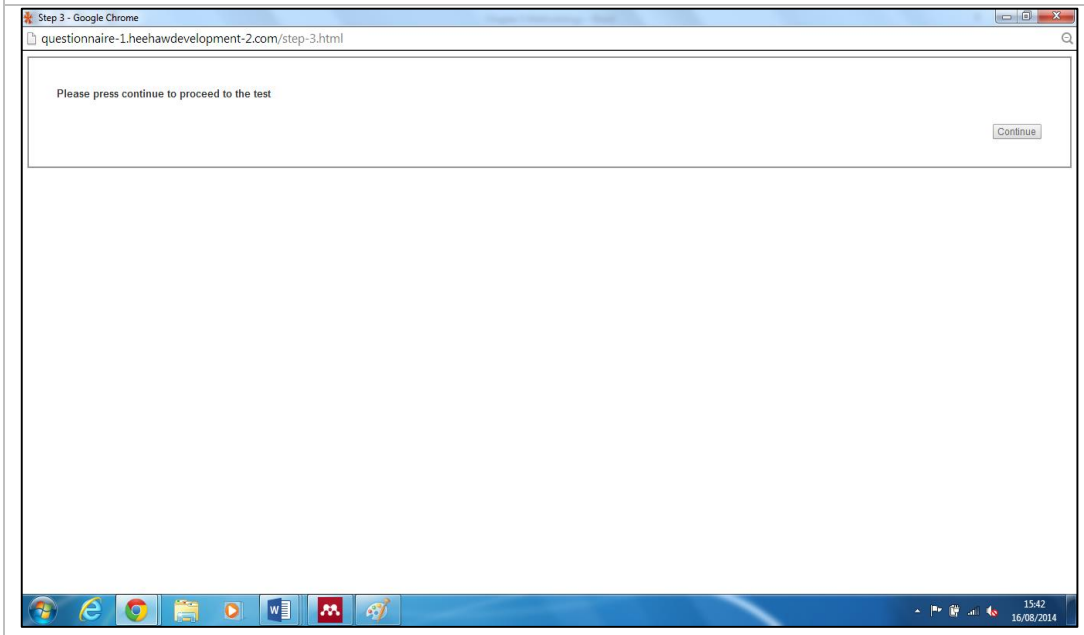
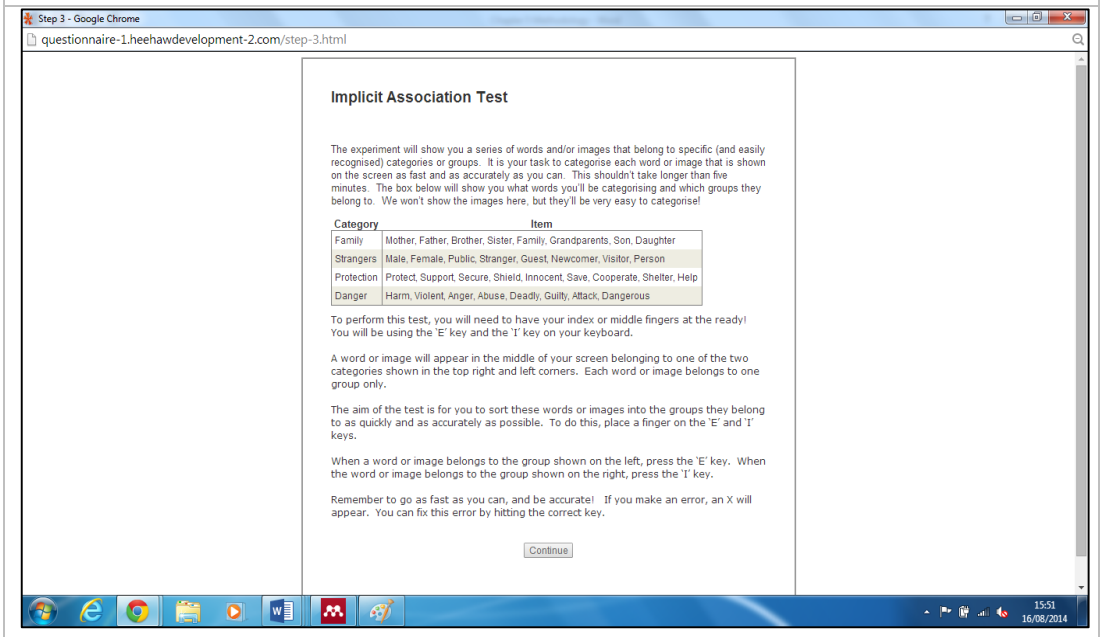


Figure 30 IAT Instructions



Participants were able to complete the pre-IAT primed context and the IATs at their own pace although were reminded that it is ultimately a timed task. Once everyone

had completed initial demographic questions, been exposed to the prime, and completed all IATs, two researchers called out ID numbers (X numbers would go with one researcher to one room, and Y numbers would go with the other to another room) where both sets of groups would complete the same behavioural test. They were asked to make sure that they brought two of their three ID cards with them.

Each researcher took a group to a separate seminar room and once participants were seated, collected one of their ID cards replacing it with the matching game card. The behavioural game was then reviewed by the researcher by reading the same instructions that were also printed on the game cards. This was to ensure that both sets of groups received exactly the same sets of instructions. Participants were then asked if they understood.[39] Participants were then asked to complete their allocation choices in silence. The researcher collected completed cards before telling participants to help themselves to refreshments and chat amongst themselves.

After refreshments, participants returned to the computer lab and the PC they had been using (checking the third and final ID card). They then finished the remainder of the test which was the survey. Whilst the participants were completing the final survey questions, the researchers were busily counting the allocation tickets in order to prepare for the prize draw. After 20 minutes, participants were asked to stop what they were doing and the researcher performed the prize winning draw by extracting and calling out the winning ticket ID number. The winner was able to collect an extra £10 along with their £10 participation fee. Once the debriefing was completed (Appendix 11), participants were asked to log out of the computers, to collect their fee and leave.

[39] Questions raised concerned how to void the other groups' tickets, both at a group level, and individual.

Central Hypotheses

Hypotheses will be presented and explained in more detail (by rooting them in evolutionary theory) in the specific sections. Hypotheses are always presented in grey boxes (see below). Each section explains in more detail, the design of that particular aspect of the study. The pre-IAT prime hypotheses are detailed in section 1. Hypotheses regarding the parochial altruism IATs designed for this project are presented in section 2. Hypotheses about behavioural parochial altruism are presented in section 3. And hypotheses about explicit measures of group-centricism, religiosity, and vulnerability are presented in section 4.

Variables	Central Hypothesis
IAT	IAT Scores will be significantly different from zero across all IATs and will vary across individuals.
Pre-IAT Prime	Pre-IAT primes will influence IAT scores.
Sex, Ethnicity, Religion	IAT scores will vary across sex, ethnicity, and religion in different intergroup scenarios.
Behavioural Parochial Altruism	IAT scores will be related to behavioural parochial altruism.
Group Centricism, Religiosity, Vulnerability	IAT scores and parochial altruism behavioural scores will be related to explicit measures of group-centricism, religiosity, and vulnerability.

IAT scores will be significantly different from zero across all IATs, thus indicating parochial altruistic attitudes to some extent across three different intergroup scenarios (kinship, groups, religion). They will also vary across individuals. This hypothesis tests the claim that parochial altruism is present in different intergroup scenarios and vary across individuals (e.g. Choi & Bowles, 2007). It tests whether parochial altruistic attitudes are present in: kinship scenarios (based on Hamilton's rule), intergroup scenarios (multilevel selection theories proposed to promote parochial

altruism), and different religious groups (to represent associations with different religious groups) (Hamilton 1963; García & van den Bergh 2011).

IAT scores will vary according to which pre-IAT prime individuals are exposed to (this is addressed further in the next section). IAT scores will vary according to sex, ethnicity and religion in different intergroup scenarios (this is addressed further in the IAT section). IAT scores will be associated with behavioural allocation scores (this is addressed in the behavioural game section). IAT scores and behavioural parochial altruism will be associated with survey measures of group-centricism, religiosity, and vulnerability.

1. Priming Contexts of Conflict and Cooperation: Pre-IAT Primes

Participants were exposed to a very basic and discrete prime before they partook in any IAT and after they completed the first page of mandatory questions. A particular context (intergroup conflict, intergroup cooperation, and neutral and no prime conditions) was invoked with this prime in order to assess how such contexts impacted on IAT responses (or parochial altruistic attitudes). The rationale behind including a pre-IAT prime was to manipulate participants' perceptions of context which will influence their IAT scores, or parochial altruistic attitudes. To do this, a somewhat salient identification with an arbitrary and general ingroup needed to be invoked. This should encourage participants to actively engage in a non-specific and arbitrary group membership that renders any subsequent priming story about that group membership being involved in intergroup conflict or cooperation more salient.

Invoking Arbitrary Groupishness

To invoke participants' perceptions of belonging to an arbitrary ingroup, deceit was used. Participants were informed that their responses to two sets of personality measures completed during the mandatory demographic question page, put them in one of two groups: 'Red's' or 'Blue's'. Control conditions did not invoke groupishness. All participants were told their answers to the two questions put them in the 'Red' group as opposed to the 'Blue' group *if they received either the conflict or cooperation prime*. In truth, none of the participants were put into these groups.

The pre-IAT primes consisted of short excerpts from a phoney newspaper article. There were three such articles which along with a no prime control (this screen showed only a button with the word 'continue'), were allocated to participants at random by the program. Two of these stories discussed intergroup scenarios depicting conflict or cooperation between the 'Red's' and the 'Blue's.' The remaining scenario was a neutral control that discussed an art exhibition. All three articles were structured in the same way so that key words could be substituted depending on whether the prime was reflecting intergroup conflict, intergroup cooperation, or the neutral art exhibition prose. Images representing the content of the phoney articles were included alongside the written excerpt but did not directly refer to it.

Design

The pre-IAT prime was a four level independent variable, including two control primes. One prime was designed to induce notions of intergroup conflict, the other intergroup cooperation. Control primes were a neutral prime in which words and images were neutral (based on art), and a no content prime, in which participants were just asked to click continue. Only one was experienced per participant at the beginning of the test (but after initial demographics was taken).

Materials

The survey questions used to encourage participants to believe that their responses put them in a particular group (i.e. the 'Red's') were Harm Avoidance and Bravery scales from the International Personality Item Pool website. Interchangeable words can be found in. Images were gathered from Flickr[40] avoiding any issues with copyright. Images were chosen for their representation of the written text as far as possible.

Procedure

Participants completed the pre-IAT prime surveys whilst filling out the mandatory demographics page which preceded the pre-IAT prime page. On completion, the program randomly allocated one prime to participants. Participants were required only to read the article and click the continue tab (just the latter for those exposed to the no prime control). The pre-IAT prime mentioned that participants were likely to have a recall test later in the experiment and encouraged them to pay particular attention for maximum absorption. Upon clicking the continue tab, participants then proceeded to the next phase of the study: the IATs.

[40] http://www.flickr.com/

Hypotheses

Variables	Pre-IAT Prime Hypotheses
None and Neutral Primes	None and Neutral primes will be associated with similar IAT scores.
Conflict	The conflict prime will be associated with higher IAT scores than control and cooperation primes.
Cooperation	The cooperation prime will be associated with lower IAT scores the conflict prime, similar to the control primes.
Kin IAT	Female IAT scores will be higher than male across all primes in the kinship scenario, especially conflict.
Group IAT	Male IAT scores will be higher than female across all primes in the group scenario, especially conflict.

None and Neutral primes will not elicit significantly different parochial altruistic attitudes from one another as they are control conditions. These conditions represent a baseline level of parochial altruistic attitudes in the various intergroup scenarios. The conflict prime is predicted to be associated with stronger parochial altruistic attitudes (higher IAT scores) than the control primes and the cooperation prime. This is rooted in theory that suggests that situations of conflict would represent a fitness threat to our ancestors who would therefore benefit from parochial altruistic attitudes (and behaviours) in order to protect themselves and their group from harm (e.g. Gat 2009; Choi & Bowles 2007).

The cooperation prime is predicted to be associated with weaker parochial altruistic attitudes than the conflict prime, similar to those elicited by control primes. This prime is included in opposition to the conflict prime. Chagnon found that the Yanomamo cooperated with some allies in some situations, but conflicted with them in others (Chagnon 1983). This prime is included to test whether situations of cooperation between groups can reduce parochial altruistic attitudes. Some sex differences are expected. Female IAT scores should be higher throughout all primes than males in the kinship IAT, on account of their likely sensitivity to kinship scenarios (e.g. Fischer-

Shofty et al. 2012). Male parochial altruistic attitudes should be stronger than females in the intergroup IAT on account of their likely sensitivity to intergroup scenarios, especially conflict (e.g. van Vugt 2009).

2. Designing IAT to Measure Parochial Altruism

The study was designed and developed to be used online, so that future applications can gather data from a larger population than the student laboratory sample. IAT was been adapted to measure parochial altruistic attitudes in intergroup scenarios (kinship versus non-kin strangers, and ingroups versus outgroups) and to measure parochial altruistic attitudes in a contextual intergroup scenario using religious symbols to represent religious groups associated with Islamic extremist terrorism in the UK (Christians, Jews, and Muslims). The choice of these groups is based on the Islamic element in extremism Islamism, and their grievances about Israel and Jews, and the Christian crusades. A schematic representation of the kinship, and intergroup IATs designed to measure parochial altruistic attitudes can be viewed in Figure 31 and Figure 32.

Figure 31. Schematic Representation of Kin versus Non-Kin IAT

Kin Versus Non -Kin IAT					
Block	1	2	3/4	5	6/7
Task description	Concept categorisation	Attribute categorisation	Combined categorisation	Reverse concept categorisation	Reverse combined categorisation
Categories	▪Family ▪Stranger	▪Protection ▪Danger	▪Family + Protection ▪Stranger + Danger	▪Family ▪Stranger	▪Family + Danger ▪Stranger + Protection
Sample items	▪Mother ▪Brother ▪Person ▪Newcomer	▪Save▪ Protect ▪Anger▪ Abuse	▪Father ▪Help ▪Stranger ▪Attack	▪Sister ▪Parent ▪Female ▪Public	▪Son ▪Deadly ▪Male ▪Secure

Figure 32. Schematic Representation of Us versus Them IAT

Us Versus Them IAT					
Block	1	2	3/4	5	6/7
Task description	Concept categorisation	Attribute categorisation	Combined categorisation	Reverse concept categorisation	Reverse combined categorisation
Categories	▪Us ▪ Them	▪Protection ▪Danger	▪Us + Protection ▪Them + Danger	▪Us ▪ Them	▪Us + Danger ▪They + Protection
Sample items	▪We ▪ Us ▪Them ▪They	▪Save▪ Protect ▪Anger▪ Abuse	▪We ▪Help ▪They ▪Attack	▪ Our ▪ Members ▪Themselves ▪Non-members	▪Us ▪Deadly ▪Them ▪Secure

Choosing Category Concepts and Attributes

Category associations for parochial altruism were linked to associated terms: protection for altruism (e.g. save, defend, shield, protect), and danger associations for parochialism, (e.g. danger, violent, harm, deadly). Concept categories were based on intergroup scenarios and are examples of group memberships that are measured here in three basic ways (kin versus non-kin, ingroup versus outgroup, and with the aforementioned religious symbols). Dependant variables are the scores for category-combination tasks.

The choice of concept categories (i.e. ingroup and outgroup) is critical in IAT because much of the IAT effect is based on the group level categorisation (De Houwer 2001). The categories used are vital to the usefulness of the measure. Many studies of social identity, or ingroups versus outgroups have been conducted using IAT (Phelps et al. 2000; Albertson 2011; Dasgupta et al. 2003; Karpinski & Steinman 2006; Sriram & Greenwald 2009; Smurda 2006; DeSteno et al. 2004; Dasgupta et al. 2000; Yogeeswaran & Dasgupta 2010; Nosek et al. 2009; De Dreu et al. 2011). It is probably one of the most common IATs conducted.

Utilising IAT to investigate parochial altruistic attitudes is an innovative aspect of this study. Although De Dreu et al (2010) used IAT in one study investigating the effects of oxytocin related to parochial altruistic behaviours, they did not design IAT to specifically measure parochial altruistic attitudes. Theirs was group specific (with Dutch subjects), the concept category was not a broad intergroup scenario (specifically, images of Arabs versus Dutch, or German versus Dutch targets), and the attribute category was not specifically related to the parochial altruistic construct. Instead, positive and negative words were the basis for interpretations of ingroup bias and outgroup derogation. This study specifically refers to the components of parochial altruism.

Design

Target-concepts were examples of intergroup contexts: kin and non-kin strangers; ingroup and outgroup; religion. Attribute categories were examples of parochial altruism components.

Apparatus

The online IAT was developed with Flashpoint. To participate, respondents were required to download the programme onto their computer, so that participants' own computers could present stimuli *and* measure response latencies.

Materials

Word items were selected by thesaurus research where applicable and were tested out in mini-pilot studies with non-participant individuals. Each item was judged by pilot participants to be both familiar to and unambiguously classifiable to the category concept. Since parochial altruism is a specific term and concept in evolutionary psychology, its two components of parochialism and altruism were not considered to be appropriate to use in the study, therefore words semantically similar in meaning were used. Conceptually, parochial altruism refers to the preference and bias towards the ingroup and caution if not hostility towards outgroups. To test for parochial altruism, the core components were considered in layman's terms to be 'protection' and 'danger'. These terms were then researched using a thesaurus to find similar words. Previous research with IAT has shown that there is no difference in scoring between IATs that present over 50 different items, or 5 different items (Greenwald et al. 1998; Greenwald et al. 2003). Therefore, the words and images used in this study were chosen for their representativeness of the target categorisation (e.g. 'us' for

ingroup) which in the case of the ingroup/outgroup IAT meant including fewer items rather than risk obscuring meaning by including too many, less category appropriate words. The religion IAT presented images of religious symbols. As far as possible, the content of these symbols was matched (i.e. there are pictures of all three holy books: Koran, Tora, and a Bible). Images were taken from flickr to avoid problems with copyright and can be found in.

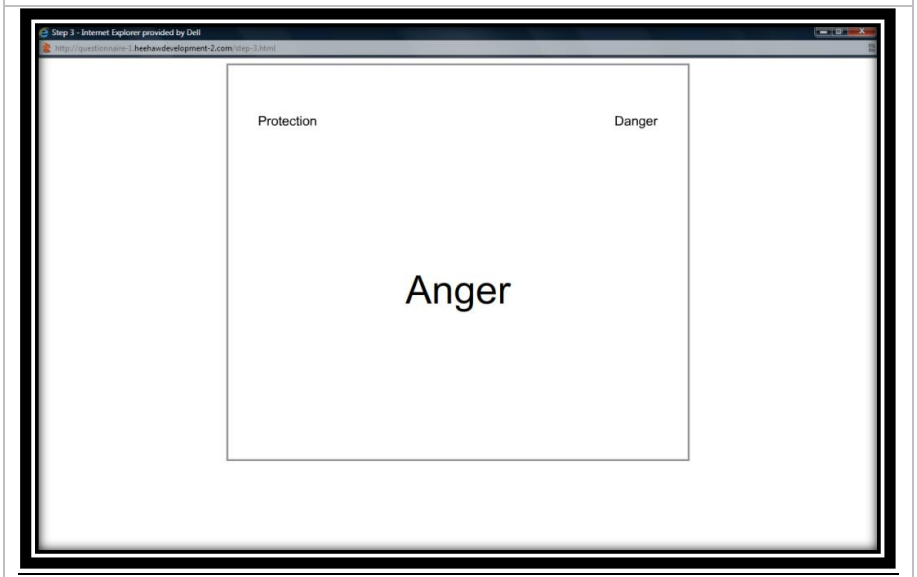
IAT Procedure

Participants clicked on the link to the study and read an introduction and briefing screen. They were informed of their rights to withdraw, their anonymous participation, and other ethical considerations. By clicking continue participants provided their informed consent. Participants input their ID numbers to allow us to track their session. Participants then read an instruction page describing IAT. The need for speed and accuracy in performing the test was highlighted. Errors prompt a red X on the screen until the correct key is hit. Each block follows the same procedure where the right hand side of the screen is represented physically by the 'I' key, whilst the left hand side of the screen is represented by the 'E' key. Reminder labels, in the form of category names appropriately positioned to the left or right, remain on the screen during each block. Figure 33 is a screenshot of block 1 of the kinship IAT. In this case, 'Sister' is the item, and the participant would be required to hit the 'E' key, which represents the 'Family' category in order to move on to the next trial.

Figure 33. Screenshot of Kinship IAT: Block 1.

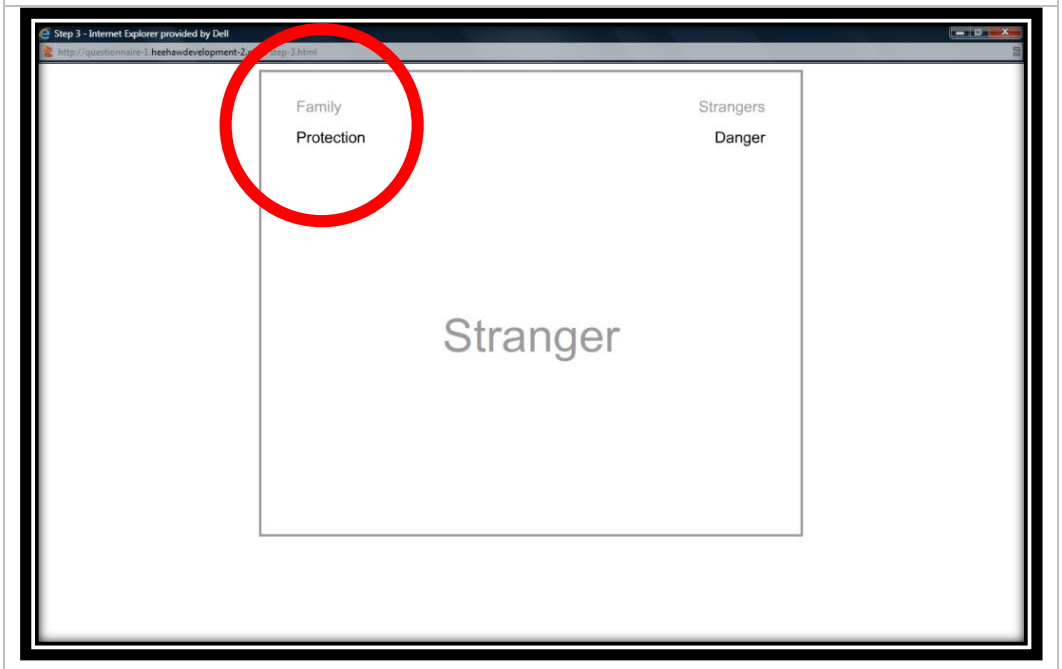
The second block requires participants to categorise protection and danger items in the same way, again for 20 trials. The side of the screen on which the protection and danger category is presented is the same throughout the entire test. It is only the independent variable concepts that switch (Figure 34).

Figure 34. Screenshot of Kinship IAT: Block 2.



The third block presents both the intergroup concepts *and* the protection and danger association categories together (the combined category block) so that participants are categorising four categories together as opposed to separately as they did in blocks one and two (Figure 35). The third block (and the sixth) is typically regarded as a practice block, where there are 40 trials to take into account the need to practice this more challenging aspect of the study, and the increased number of items. The location of category concepts (in this case, intergroup contexts pertaining to ingroups/outgroups, kinship, or religion), and protection/danger attributes is randomised by the programme for each individual to limit any impact the order of presentation of combined compatible or combined incompatible categories has on performance.

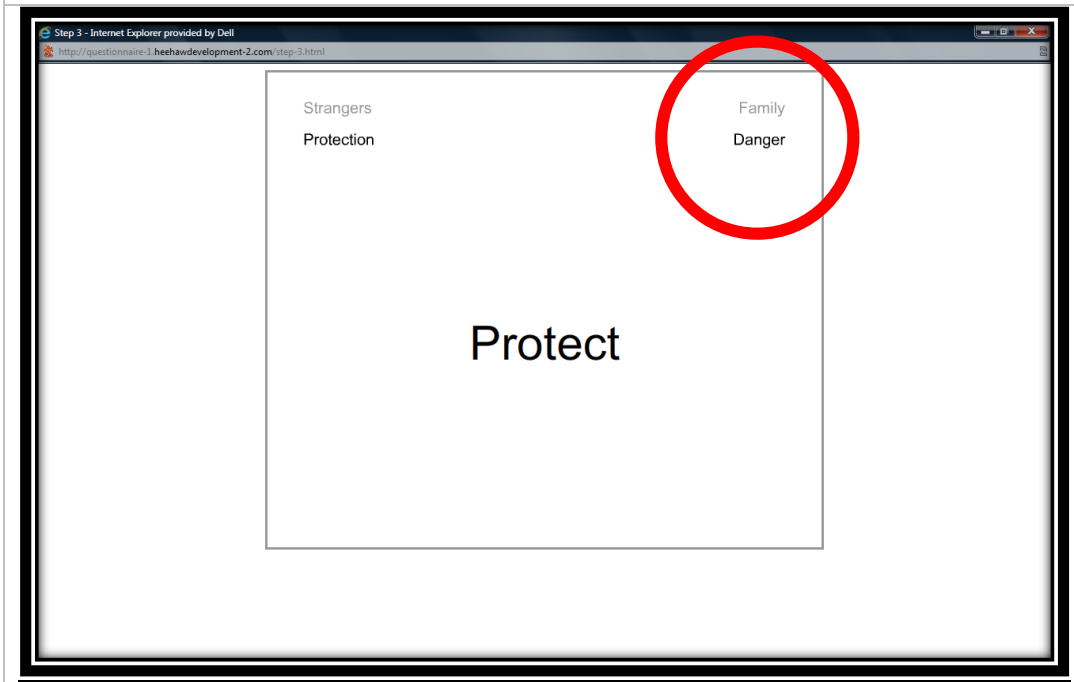
Figure 35. Screenshot of Kinship IAT: Block 3/4.



Block four is an exact repeat of block three although we call this the test block. Despite block three category combination task being referred to as a practise block, *all* category combination blocks (3, 4, 6, 7) are used in data analysis. This is to take advantage of the improved scoring algorithm developed by IAT developers (Greenwald et al. 2003).

Block five then returns to the format of block one. Block five is also a practice run where 20 trials of the intergroup concepts are categorised. The difference is however, that the position of the categories on the screen will have switched sides. For example, where family had initially been presented on the left hand side of the screen (thus the associated key would have been 'E') in the first block onwards, block five would then switch the position of the family concept from the left hand side to the right hand side, so that the key that now represents the category of family, is the 'I' key (Figure 36). This is the new position of the category concepts (please note that in order to allow this switch to be effective, protection and danger categories must stay in the same position, i.e. they do not switch sides). Blocks six and seven are the combined category tasks utilising the new category format, each having 40 trials.

Figure 36. Screenshot of Kinship IAT: Block 5/6.



There are three IAT, and once each was completed, a screen asking participants whether they would like to proceed to survey questions or complete another IAT appeared until there were no remaining IATs. IATs were presented randomly to participants to counterbalance order effects.

IAT Data Preparation

Raw data for each trial are response latencies (in milliseconds) and error rates (number of errors per block) and error latencies (again, in milliseconds). Latencies tend to produce skewed data, which have therefore typically been log-transformed in previous research using IAT (e.g. Greenwald, Poehlman, Uhlmann, & Banaji, 2009). Rather than analyse raw data, data are prepared according to the D score, which was developed by the founders of IAT to bolster IAT effect.

The previous, or conventional IAT scoring algorithm uses data only from the test blocks (B4 and B7), with no systematic procedure for removing excessively slow or fast responding subjects (including high error rates). The first two trails of each test block were removed (due to longer latencies), and latencies outside of 300/3000ms were recoded to these values. Once these data had been log transformed, the difference between the test block averages provided the IAT score. The conventional scoring algorithm is utilised in many different types of IAT research (e.g. Conner, Perugini, O'Gorman, Ayres, & Prestwich, 2007; Olson & Fazio, 2004; Teachman, Marker, & Smith-janik, 2008).

However, Greenwald et al designed an improved scoring algorithm which provides a rather more complicated procedure than the standard conventional measure, but one that offers more robust results (Greenwald et al. 2003). Professor Anthony Greenwald is one of the core founders of IAT and runs Project Implicit, which is an interactive online data-collection facility that allows individuals to participate in a variety of IATs.[41] In addition, Project Implicit offers researchers access to IAT software

[41] https://implicit.harvard.edu/implicit/

including appropriate SPSS syntax code for data analysis.[42] This syntax enables users to easily calculate the improved scoring algorithm – the D score.

The IAT effect is "a measure of strengths of automatic associations" between category combinations (e.g. flowers = pleasant, bugs = unpleasant) (Greenwald et al. 2003, p.197). D score captures the IAT effect better than the conventional score. The core differences between the conventional and improved scoring algorithms are that the latter:

- Includes both test *and* practise blocks (B3, B4, B6, and B7)
- Trials with latencies longer than 10,000 ms are removed as are subjects whose scores are less than 300 ms for more than 10% of the block (this indicates inattention, cheating, or anticipation)
- All trials are used, including the first two of each (test and practise block) block
- No values are recoded
- Rather than using raw latencies, the mean correct latencies for each block are calculated
- A pooled standard deviation for all compatible trials is computed (i.e. B6 and B3, and B7 and B4).
- There is no transformation of the data, and the values for each of the four blocks is averaged and the difference between the compatible and incompatible blocks is computed (i.e. B6 – B3, and B7 – B4).
- The results of this are divided between the relevant pooled standard deviation which are then averaged again to produce the D score (see Greenwald et al. 2003 for more detail).

The improved scoring algorithm outperformed the standard measure on many dimensions including stronger effect sizes, and increased power (smaller sample sizes are needed by D score than the conventional algorithm: 39 and 63 respectively) (Greenwald et al. 2003). Importantly, D score is less effected by slow responders and

[42] http://www.projectimplicit.net/index.html

is able to mitigate against cognitive skills confounds (where slow responding for example might produce correlations between variables where there should not be) (e.g. Cai et al. 2004). This is due to the inclusion of the pooled standard deviation which is able to tap into individual differences in associations between categories, on the basis of personalised latencies, and pooled standard deviations. Many researchers utilise D score in their statistics analyses of IAT performance (e.g. Karpinski, Steinman, & Hilton, 2005; Nock & Banaji, 2007; Nock et al., 2010; Ratliff & Nosek, 2011; Sheets, Domke, & Greenwald, 2011; Yogeeswaran & Dasgupta, 2010). Given the benefits of using the improved scoring algorithm rather than the conventional scoring system, data collected here will be prepared using D score.

Hypotheses

Variables	IAT Hypotheses
Sex	Female IAT scores will be higher than male in the kinship IAT. Male IAT scores will be higher than female in the group IAT. There will be no sex differences in the religion IAT.
Ethnicity	There will be no difference in in IAT scores in the kinship IAT based on ethnicity. Non-whites will have higher IAT scores than whites in the group IAT. Non-whites will have higher IAT scores than whites in the religion IAT.
Religion	There will be no difference in in IAT scores in the kinship IAT based on religion. Minority religious participants will have higher IAT scores than majority religious in the group IAT. Minority religious participants will have lower IAT scores than majority religious in the religion IAT.

Females will have stronger parochial altruistic attitudes than males in the kinship IAT. This is predicted on the basis of research showing sex differences in this direction in studies using oxytocin, and evolutionary selection pressures (Fischer-Shofty et al. 2012; Navarrete et al. 2007; Navarrete et al. 2009). Males are predicted to have

stronger parochial altruistic attitudes in intergroup contexts on the basis of existing evolutionary theory and research (van Vugt 2009; Navarrete et al. 2010). Sex differences are not predicted in the religion IAT because all individuals should show parochial altruism in contexts in which others groups are present. Ethnicity is not predicted to be associated with variation in parochial altruistic attitudes in the kinship IAT for the same reason. Minority group membership will however, be associated with stronger parochial altruistic attitudes in both the group IAT, and the religion IAT. These hypotheses are based on the notion that smaller group sizes would have represented a threat in our ancestral past, and parochial altruistic attitudes (responses) would have been expected in such circumstances (Gat 2006; Gat 2009; Alexander 1974; Neuberg et al. 2011). A similar argument is made for the differences in IAT scores according to religion. No differences in parochial altruistic attitudes are predicted in the kinship IAT on the basis of religion. This is because all individuals irrespective of group membership should show parochial altruism towards kin (e.g. on the basis of Hamilton's rule) (Hamilton 1975). Minority religious groups are predicted to have stronger parochial altruistic attitudes in the group IAT than majority on the basis of smaller group size, and so too for the religion IAT.

3. Post-IAT Behavioural Paradigm: LottoKitty Game

Sub-conscious parochial altruistic *attitudes* as measured by IAT, whether contextually primed or not, may not necessarily result in *behavioural outcomes*. Although there is evidence that IAT responses predict subconscious behaviour (such as eye blinking and body language), and in some cases 'real life' actions, they do not always predict consciously directed behaviour, and this is especially relevant to explicit measures such as questionnaires (an overview can be found in Greenwald & Nosek 2001). The more conscious the behaviour, particularly if there is the potential for some kind of social stigma or social desirability attached (stereotyping and prejudice are two such examples), the more likely there will be some kind of censuring of behaviour, or at least explicit attitudes (Karpinski & Hilton 2001).

Parochial altruism does not necessarily lead to violence and conflict. The overarching theme rather, is bias and protectivism towards the ingroup to the *potential* detriment of outgroups. Outgroup hostility is just one potential behavioural outcome (others are avoidance, disgust, and fear) that might be triggered in particular scenarios that cannot be replicated here (e.g. disease, resource threat, cultural encroachment, small group size). The behavioural paradigm designed here is based on resource allocation tasks similar to the Ultimatum Game (e.g. Camerer & Thaler, R. 1995). It aims to investigate parochial altruistic behavioural choices that may reflect propensity towards ingroup bias, and inclinations towards outgroup hostility.

Measuring parochial altruistic behaviour is not a straight-forward task given the complexity of the construct. Parochial altruistic behaviours span from withholding benefits of being ingroup members from outgroup members, to overt hostility towards the outgroup. Some of the most famous studies in psychology have measured the capacity for humans to do terrible things to each other, whether in the name of authority, or situational attribution (e.g. Milgram 1963; Zimbardo 2007). There are other behavioural paradigms that look at harming others that are more in keeping with contemporary ethical considerations such as the "Hot Sauce Paradigm" (McDermott et al. 2009; Ritter & Eslea 2005; Lieberman et al. 1999). Participants choose whether, and how much spicy hot sauce to issue to another person who they know does not like hot sauce in order to measure aggression. Whilst a variation of this test might have been interesting in measuring outgroup hostility, it would provide little leeway in measuring self- or group-based costs for the benefit of the ingroup, or the inclination to bias against outgroups without hostility. Measuring parochial altruistic behaviour with these features in mind require a paradigm that includes more than aggression as an outcome. Such a paradigm requires that participants are also able to endure costs, benefit their ingroup, *and* enact some form of outgroup hostility, but only if they choose to.

The Ultimatum Game and its cousin the Dictator Game, are popular experimental economic games that are increasingly used in behavioural economics and evolutionary psychology (Kagel & Roth 1997). Ultimatum and Dictator Games offer a simple method to investigate cooperation and altruism. The structure of the Ultimatum Game typically entails two usually anonymous players – a proposer and a responder, who decide between them how to allocate a fixed amount of money. The proposer makes an offer of some share of the money and the responder can either accept the offer or reject it. The latter decision leaves both players with nothing. The Dictator Game is unilateral, with one player deciding on an amount to give to the receiver, but to which the receiver has no say.

Self-interest should see proposers making as small a contribution as possible, whilst responders should always accept any offer that is above zero. Yet, studies typically find that proposers offer near to half the total sum, and responders often reject offers of less than twenty percent (Camerer & Thaler 1995). Although these games may lack real world validity and raise questions about the apparent generosity of participants, they have offered interesting insight into cooperation (Kurzban 2013).

Research utilising the Dictator/Ultimatum Game has presented interesting results. People tend to be more cooperative when they are proposers rather than as receivers (van Dijk et al. 2004; van Dijk & Vermunt 2000). High testosterone levels (administered to female participants) are associated with higher levels of cooperation than lower testosterone levels, although this is typically related to group membership of the receiver (Eisenegger et al. 2010). Attractive responders are more likely to reject low offers than non-attractive receivers (Farrelly et al. 2007; Solnick & Schweitzer 1999). Similarly, high testosterone responders are also more likely to reject low offers than low testosterone responders (Burnham 2007). Exposure to oxytocin influences proposition rates in both games, although there is mixed evidence on this (e.g. Zak et al. 2007). Associations between responses to these games and cooperation with others makes this an attractive tool to investigate a concept like parochial altruism.

However, although the Dictator Game (and the Ultimatum Game) are tools for measuring generosity, they seem to evoke different concerns with the dictator game concerning fairness and the ultimatum game motivating strategy (e.g. van Dijk & Vermunt 2000). Given the features of parochial altruism investigated so far by the experimental paradigm, unaltered, neither game would be suitable. Therefore, the Dictator Game (chosen over the Ultimatum Game because of its less complicated one-shot design) was used as a base on which the behavioural paradigm – called the LottoKitty Game, was designed.

The LottoKitty Game scorecard can be found in Appendix 5. It is an interactive game in that participants' choices decides which tickets are included into the lottery draw. It is a resource allocation game which measures group directed bias (both positive and negative). Ingroup bias (non-hostile towards the outgroup), coalitional outgroup hostility (a small cost to ingroup resources means a larger cost on outgroup resources), and extreme outgroup hostility (a relatively large cost to the individuals personal resources means a very large cost on outgroup resources) are the three main behavioural choices participants can make.

The LottoKitty game cards include a set of "lottery" tickets. These are be allocated according to participant choices (with some restrictions). Participants could allocate up to four tickets to themselves (self-interest), and allocate remaining tickets to either the ingroup or the outgroup. Participants could also choose to severely hamper the outgroups' chances of winning the lottery by using tickets they had allocated to their ingroup, or by 'sacrificing' tickets they had allocated to themselves personally. These allocations were designed to have different effects on the outgroups' ticket numbers with *self*-sacrificing decisions being especially costly to the outgroup (and costly to the individual) but ultimately beneficial to the ingroup (whose chances of winning were increased) with this action. Coalitional outgroup hostility decisions were less harmful to the outgroup but still hindersome, and also costly to the ingroup.

Design

This is an independent samples design in which sex, ethnicity, religion, prime, IAT scores, and particular survey scores are independent variables. Dependent variables are ticket allocations and provide three sets of behavioural results: ingroup bias, group-based outgroup hostility, and self-based outgroup hostility. The lottery gave participants a chance to win up to an extra £10 on top of their participation fee and was conducted early in the debriefing session. Participants were aware that their ticket allocation choices would influence the ticket pool available in the lottery. The winning ticket could be a self-allocated ticket (where participants had allocated a ticket to themselves rather than to the ingroup or outgroup, or sacrificing it to harm the outgroup chances), or a group-allocated ticket (where any of the participants had allocated the ticket to their own group). The latter prize would be split between the winning group. In all scenarios however, the winning ticket was self-allocated. In most cases, all group tickets had been removed from the pool ('kitty') on the basis of participants' allocation decisions which included a combination of group-based and self-based outgroup hostility.

Apparatus/Materials

This aspect of the study required two separate rooms away from the computer laboratory for each group to perform the task. ID cards were provided for participants by PCs and the number on the ID card (ID numbers) corresponded with LottoKitty game cards. LottoKitty game cards included a set of instructions, and ten perforated unallocated lotto tickets. Participants were provided with pens, and refreshments at this time and were able to socialise. The prize winning draw was performed by extracting the tickets from a box at the beginning of the briefing session.

Procedure

The LottoKitty Game was played once participants had completed the IATs, but before they had taken the survey questions. This was to ensure that the survey questions did not influence any of the dependant variables. Individuals were split into groups on the basis of their participant ID numbers which were assigned at random at the start of the experiment. Each individual was assigned to the X or Y group (e.g. X01, Y01) in line with the arbitrary categorisation in the minimal group paradigm (Tajfel, 1970). Both groups were led (separately) out of the computer lab into new rooms with a researcher. Both groups received exactly the same instructions and LottoKitty cards (with the exception of corresponding ID numbers). Although the instructions were included on the card, they were presented by the researcher and some examples were presented on a whiteboard for clarification.

Participants were told that they would be participating in a lottery in which the prize was up to £10 on top of their participation fee. They were told that they had each been allocated 10 lotto tickets. Participants were able to decide how to allocate these 10 tickets. They were only able to allocate up to four of their tickets to themselves however. They did this by writing 'self' on the tickets (each ticket had their specific ID number on it so that allocations could be tracked). The remaining tickets could be assigned to either their ingroup, or the other group. This allocation was made by their writing either 'X' or 'Y' depending on which group they were in, and which group they wanted to assign the ticket to. They were also informed that if they wished to, they could use tickets to "void" outgroup tickets in two ways. Participants could void *two* of the outgroup (group) tickets by putting a cross though, and therefore forfeiting *one* of their ingroup tickets. Participants could void *five* of the outgroup (group) tickets by forfeiting *one* of their "self" tickets by putting a cross through it.

Participants were asked if they understood the game. They were provided with pens if they did not have their own. There were few questions, but those that arose tended to be about whether the rules of the game could be bent, and if participants could strategize as a group. Answers to these questions were 'no', but the fact that these questions tended to arise in each experimental session is interesting and perhaps suggestive of a coalitional groupness. Participants were asked to leave the tickets attached to the game card so that the researchers could properly perform the ticket voiding before the draw.

Participants were provided with refreshments and a short break during which they could socialise before returning to the computer lab to finish the survey. Whilst the participants were completing the final part of the experiment, the researchers performed a tally of the ticket allocations. Voided tickets were removed from the lottery pool and all remaining tickets were put into a box for the draw. The draw was conducted after the debriefing material had been read out, and the winner was called on the basis of the winning ID number which was pulled at random out of a box by a researcher. A 'self' ticket meant that an individual won the whole prize. A group ticket (with either an 'X' or 'Y' written) would have resulted in a group prize in which the money was split equally between all members of the group. In each draw (there were six in total), a self-allocated ticket won.

Hypotheses

Ingroup Bias

Variables	Hypotheses: Ingroup Allocations (Ingroup Bias)
Sex	There will be no sex differences in ingroup allocation scores.
Ethnicity	There will be no difference in ingroup allocation scores according to ethnicity.
Religion	Religious participants will have higher ingroup allocation scores than non-religious participants.
Kin IAT	Kin IAT scores will not be related to ingroup bias behaviours.
Group IAT	Group IAT scores will be related to ingroup bias behaviours.
Religion IAT	Religion IAT scores will not be related to ingroup bias behaviours.

There will be no sex differences in ingroup allocation scores, nor will there be any difference based on ethnicity. This is because all individuals, in all groups (sex, or ethnic) should show bias towards the ingroup. However, it is predicted that religious group membership will be associated with stronger ingroup bias than non-religious group membership. This prediction is made on the basis that religion is associated with intragroup cooperation which should enhance behavioural ingroup bias in this case (Norenzayan 2013; Johnson & Bering 2006). Ingroup bias will not vary according to parochial altruistic attitudes shown in the kinship IAT. This is predicted because allocations are made towards an ingroup (X or Y) rather than family. The same argument applies for the religion IAT. However, higher intergroup IAT scores are predicted to be associated with more ingroup bias in line with the concept of parochial altruism (Bernhard et al. 2006; Choi & Bowles 2007).

Coalitional Outgroup Hostility

Variables	Hypotheses: Coalitional Outgroup Hostility
Sex	Males will be more coalitionally hostile to the outgroup than females.
Ethnicity	Minority ethnic group membership will be associated with more coalitional outgroup hostility than majority group membership..
Religion	Minority religious group membership will be associated with more coalitional outgroup hostility than majority religious group membership..
Kin IAT	Kin IAT scores will not be related to coalitional outgroup hostility behaviours.
Group IAT	Group IAT scores will be related to coalitional outgroup hostility behaviours.
Religion IAT	Religion IAT scores will be related to coalitional outgroup hostility behaviours.

Males will be more coalitionally aggressive than females by using group resources to harm the outgroup. This prediction is made on the basis of sex differences theorised and found in evolution research (van Vugt et al. 2007; De Dreu, Greer, et al. 2012). On the basis of small group size (e.g. Gat 2009), minority ethnic and religious group membership is predicted to be associated with more coalitional outgroup hostility than majority ethnic and religious group memberships. Kin IAT scores will not be related to coalitional outgroup hostility behaviours because the groups in question (X or Y) are not related to kinship. However, higher coalitional outgroup hostility scores are expected to be associated with stronger parochial altruistic attitudes in the group IAT on the basis that stronger parochial altruistic attitudes in intergroup scenarios should predict parochial altruistic behaviour in the form of outgroup hostility to some degree (Choi & Bowles 2007; Bernhard et al. 2006; De Dreu et al. 2010; Wrangham 1999; Ginges & Hansen 2010; Tooby & Cosmides 2010). Religion IAT scores are predicted to be associated with coalitional outgroup hostility because these groups represent potential threats and therefore, stronger parochial altruistic attitudes towards these threats should be associated with willingness to aggress against the outgroup to some extent (in this case, coalitionally).

Variables	Hypotheses: Extreme Outgroup Hostility
Sex	Males will have higher extreme outgroup hostility scores than females.
Ethnicity	Minority ethnic group membership will be associated with more extreme outgroup hostility than majority group membership.
Religion	Religious participants will have higher extreme outgroup hostility scores than non-religious participants.
Kin IAT	Kin IAT scores will not be related to extreme outgroup hostility behaviours.
Group IAT	Higher Group IAT scores will be associated with higher extreme outgroup hostility scores.
Religion IAT	Higher Religion IAT scores will be associated with higher extreme outgroup hostility scores.

Males will indicate more extreme outgroup hostility than females. This is based on research and theory that shows that males are more belligerent than females, and more prone to self-sacrifice in conflict (Navarrete et al. 2010; von Rueden et al. 2011; Eisenberger et al. 2004; Lehmann & Feldman 2008). Ethnic minority groups will show stronger extreme outgroup hostility than ethnic majority groups, on the basis of group size (Gat 2009). Religious participants will show more extreme outgroup hostility than non-religious participants on the basis that religious people are more prone to sacrificing for their group (e.g. Johnson & Reeve 2013). Extreme outgroup hostility scores will not be associated with parochial altruistic attitudes in the kin IAT. This is because the relevant groups are X or Y and do not present a threat to kinship groups. Stronger parochial altruistic attitudes in both the group IAT and religion IAT are predicted to be associated with more extreme outgroup hostility behaviour. Group IAT scores indicate parochial altruism in intergroup scenarios, and religion IAT scores indicate perceptions of threat in religious groups. The bias towards ingroups against outgroups measures in the group IAT and bias against certain (religious) outgroups measured in the religion IAT should therefore be associated with a willingness to self-sacrifice in conjunction with hostility to the outgroup (e.g. Gat 2009; Neuberg et al. 2011).

4. Surveys and Questionnaires

There is no personality survey that specifically addresses parochial altruistic attitudes. Therefore, constructs that seem related to parochial altruism were included. This section was included to look for correlations between parochial altruistic attitudes, behaviours, and certain personality characteristics.

IAT responses very rarely predict, or are predicted by, explicit measures, especially when the matter at hand is subject to social desirability, which intergroup relations usually are (e.g. Greenwald et al. 2009). This is not an indication that IATs do not predict actual behavioural outcomes or underlying attitudes, but rather that what people say they will do, and what they say they believe, do not always match their implicit attitudes. Nevertheless, it is important to attempt to assess any correlations between parochial altruistic attitudes and behaviours with self-reported 'explicit' measures.

Because there is no parochial altruism survey, questionnaires were implemented that provided the best fit with the construct as it is conceived here.[43] For instance, social dominance orientation was used in relation to parochialism. Risk-risk taking was measured also given the recurrent theme of young men becoming involved in violent coalitions. Reciprocity, altruism, and fairness were used as a measure of group-centricism. Specifically, social desirability was used as a control survey. Emotional instability and confidence were used to assess personal dispositions of vulnerability that might influence individual variation in groupness. Surveys about religiosity were included given the role of religion in within group cooperation, and between group competitions. Whilst a number of alternative surveys could have been used, it was necessary to choose only a specific few of the most relevant features of the variables shown to be of importance so far. This is because the experimental paradigm is

[43] Designing a survey to measure self-reported parochial altruistic attitudes could be an avenue for future research, particularly if designed in conjunction with a parochial altruism IAT.

relatively complex and has several different aspects. It also runs the risk of being too time consuming for participants which may lead to fatigue or drop-outs, both of which are detrimental to analysis.

Materials

The following survey questionnaires were gathered primarily from the IPIP website. Alpha score are included in the brackets:

- Altruism (.77)
- Risk-taking (.78)
- Fairness (.77)
- Social Desirability (.82)
- Social Dominance Orientation (.90) (Pratto et al. 1994)
- Reciprocity (.92) (Eisenberger et al. 2004)
- Intrinsic Religiosity (.75)
- Extrinsic Religiosity (.68)

Procedure

Participants were asked to find the PC they had used to complete the first part of the study (the preliminary questions, the prime and the IATs). This was aided by identification tickets they carried with them to the behavioural study and the ticket left by their computer. At this point, they were asked to complete as many of the survey questions as possible in the remaining twenty minutes. They were asked to do this in silence. In the meantime, the researchers sorted the ticket allocations from the LottoKitty game, collecting the data and readying the tickets for the prize draw.

Hypotheses

Variables	Hypotheses: Explicit Measures Group-Centricism
Kin IAT	Higher explicit measures of group-centrcism will be associated with stronger parochial altruistic attitudes.
Group IAT	Higher explicit measures of group-centrcism will be associated with stronger parochial altruistic attitudes.
Religion IAT	Higher explicit measures of group-centrcism will be associated with stronger parochial altruistic attitudes.
Ingroup Bias	Higher explicit measures of group-centrcism will be associated with higher ingroup bias allocations.
Coalitional Outgroup Hostility	Higher explicit measures of group-centrcism will be associated with higher coalitional outgroup hostility.
Extreme Outgroup Hostility	Higher explicit measures of group-centrcism will be associated with more extreme outgroup hostility.

Group-centricism (social dominance orientation, reciprocity, altruism, fairness, and risk-taking) will be associated with stronger parochial altruistic attitudes across all IATs (kinship, intergroup, and religion). Group-centricism will be positively related to ingroup bias, coalitional outgroup hostility, and extreme outgroup hostility. These predictions are made on the basis that parochial altruistic attitudes should be related to explicit measures, and explicit behaviours. That is, higher IAT scores should correlate with explicit measures, which should also correlate with behavioural measures. Lack of correlation between implicit and explicit measures is often a problem for IAT (e.g. Hofmann et al. 2005). However, it has been found to predict behaviour (Roccato & Zogmaister 2010; Richetin et al. 2007; Green et al. 2007). Both of these elements are investigated here.

Variables	Hypotheses: Explicit Measures Religiosity
Ingroup Bias	N/A
Coalitional Outgroup Hostility	Religiosity will be associated with coalitional outgroup hostility.
Extreme Outgroup Hostility	Religiosity will be associated with extreme outgroup hostility.

Variables	Hypotheses: Explicit Measures Vulnerability
Ingroup Bias	N/A
Coalitional Outgroup Hostility	Vulnerability will be associated with coalitional outgroup hostility.
Extreme Outgroup Hostility	N/A

Personal vulnerability (confidence, emotional instability) will be associated with higher coalitional outgroup hostility. This is in line with theory and research that indicated stronger parochial altruistic responses when individuals feel vulnerable in some way (Faulkner et al. 2004; Schaller & Park 2011; Schaller, Park, et al. 2003). Religiosity will be associated with coalitional outgroup hostility: lower intrinsic religiosity, and higher extrinsic religiosity will be associated with greater coalitional outgroup hostility. This is predicted on the basis of research which indicates that extrinsic, rather than intrinsic religiosity is associated with support for terrorism (Ginges & Hansen 2010; Ginges et al. 2009). For this same reason, extreme outgroup hostility is predicted to be associated with religiosity scores.

6. Investigating Parochial Altruism: The Results

Introduction

The goal of this thesis is to shed light on why people support, engage with, and participate in terrorism using insight garnered from social, and evolutionary psychology, with specific attention paid to the evolutionary concept of parochial altruism. The experimental paradigm (Chapter 5) investigating parochial altruistic attitudes and behaviours has four separate parts: pre-IAT prime, IAT, behavioural paradigm, and survey questionnaires.

Two core components form two separate dependant variables: IAT D scores which measure parochial altruistic attitudes, and behavioural resource allocation scores which measure parochial altruistic behaviours. IAT D scores are the central experimental component and are used as both a dependent variable (parochial altruistic attitude), and as predictor variables (to predict parochial altruistic behaviour). IAT D scores are based on an algorithm that uses latency data from responses to category combination tasks (Chapter 5). Data were prepared and analysed using R (R Core Team 2014).

Independent variables include sex, ethnicity, religion, D scores, and a set of personality constructs. In addition, a pre-IAT prime was designed to trigger perceptions of particular contexts. Participants were exposed to one of four of these primes (two controls: none and neutral primes, and intergroup conflict and intergroup cooperation primes). All IATs were found to indicate parochial altruistic attitudes, and there was evidence of behavioural parochialism. However, not all hypotheses were supported by the experiments. Hypotheses are presented in blue boxes throughout.

The first section provides information about participants, and tests assumptions for parametric testing. Next, parochial altruistic attitudes towards family and strangers in the form of a kin IAT D score are analysed according to the sex, ethnicity, and religion of participants. They are then analysed according to prime exposure. Correlational tests investigate relationships between kin D scores and specific personality constructs most similar to parochial altruism (specifically social dominance orientation, reciprocity, risk-taking, altruism, and fairness). Hypotheses are presented at the beginning of each section. This same structure follows for the intergroup and religion IATs. Parochial altruistic behavioural outcomes are then investigates in the form of resource allocations. There are three types of allocation that are investigated: ingroup allocation (ingroup bias), group-based outgroup hostility (coalitional outgroup hostility), and self-sacrifice outgroup hostility (extreme parochial altruism). Each type of allocation will be analysed according to the same variables stipulated above (sex, ethnicity, religion, prime, certain personality constructs), in addition to correlational analyses with IAT D scores. The final section provides a brief discussion of the results, and some limitation.

Descriptive Statistics

Participants

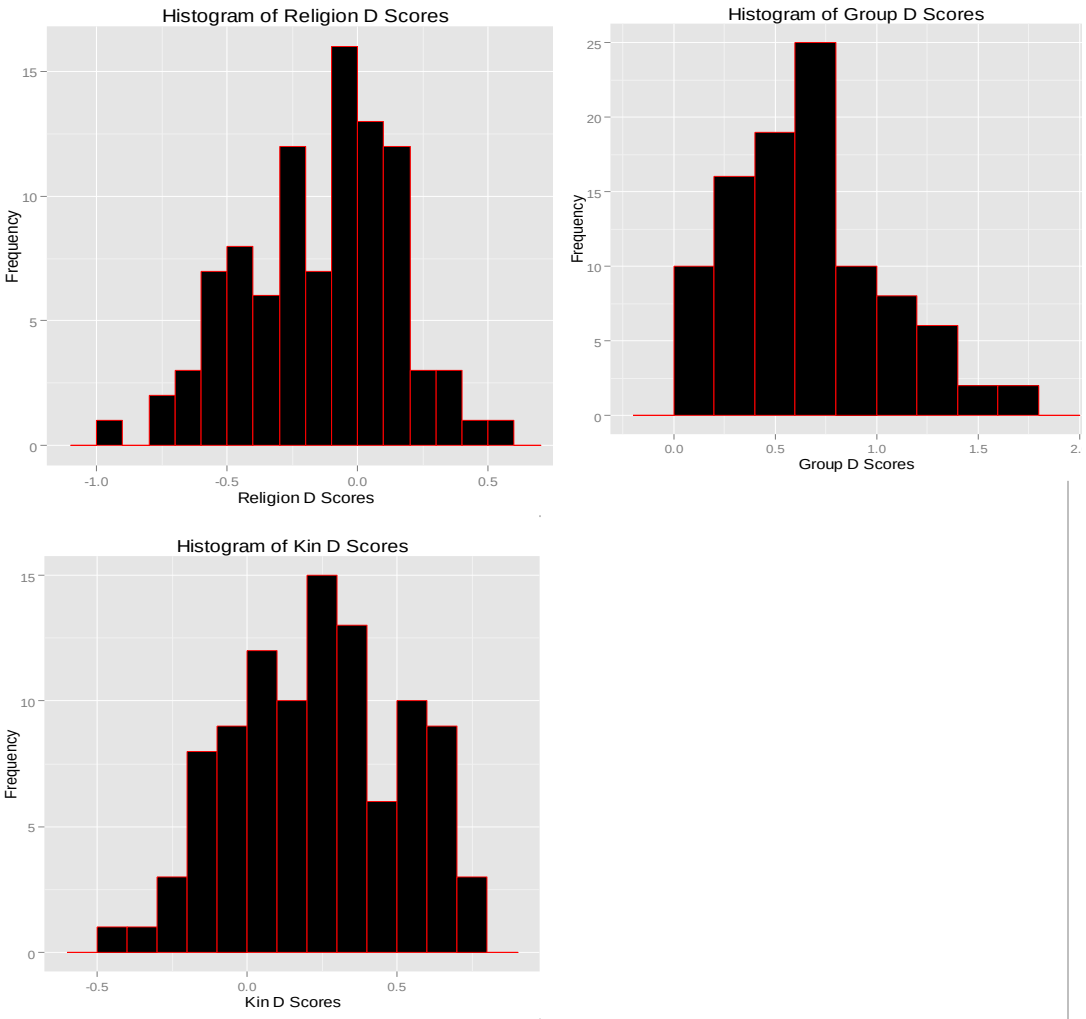
Of 129 participants, 47 were male and 82 were female. There were 13 agnostic participants, 18 atheists, 24 Christians, 3 Hindus, 2 Jews, 2 Muslims, 20 participants with no religion, and 2 describing themselves as "other". 52 participants did not provide their religion. Due to the low numbers of participants describing themselves as Hindu, Muslim, Jewish, and "other", a new group was created and recoded to "Other" (N = 9). Ethnicity was mostly white (N = 111), and there were 18 other ethnicities (1 Arab, 4 Asian, 3 Chinese, 2 Indian, 8 mixed race, and 7 "none" responders). Seventy-five participants were undergraduates, 19 were postgraduates

(35 did not respond). Ages of participants ranged from 18 to 36, with an average age of 21 and a standard deviation of 2.7.

D Scores: Normality and Homogeneity

D scores largely followed a normal distribution, although there was some evidence of skew and kurtosis (Figure 37). Shaprio-Wilk tests of normality were non-significant indicating that IAT D scores are normally distributed: Kin ($W = 0.98$, *ns*), Group ($W = 0.96$, *ns*), Religion ($W = 0.99$, *ns*). Levene tests revealed that the assumption of homogeneity of variance was not violated: Kin (F (1, 98) = 0.04, *ns*), Group (F (1, 95) = 2.4, *ns*), Religion (F (1, 91) = 0.02, *ns*). Parametric tests, specifically *t*-tests and one-way ANOVA's were used to analyse D scores.

Figure 37 Distribution of Mean D Scores



Potential Confounding Variables

A number of potentially confounding factors were measured and recorded. Age was not found to influence D scores in any of the IAT scenarios: Kin: F = 0.06, (1, 98), p = 0.8; Group: F = 2, (1, 95), p = 0.16; Religion: F = 0.4, (1, 91), p = 0.5 (ANOVA). Being an undergraduate or postgraduate student did not influence any D scores: Kin: *t* = -0.02, df = 23, p = 1 (M = 0.2, SD = 0.2); Group: *t* = 0.08, df = 20, p = 0.9 (M = 0.65, SD = 0.64); Religion: *t* = 0.34, df = 13, p = 0.7 (M = 0.14, SD = 0.18) (two-tailed *t*-test). Being a native English speaker or not did not influence any D scores: Kin: *t* = -0.6, df = 7, p = 0.6 (M = 0.18, 0.24); Group: *t* = -0.03, df = 2, p = 1 (M = 0.65, 0.66);

Religion: t = 1.04, df = 4, p = 0.36 (M = 0.05, 0.14) (two-tailed t-test). Social desirability did not affect D scores either: Kin: F = 3 (1, 77), p = 0.09; Group: F = 0.01, (1, 76), p = 0.9, and Religion: F = 1, (1, 75), p = 0.3, respectively (ANOVA).

Table 10 shows that there are some order effects.[44] A series of Wilcoxon signed rank tests showed that order did not affect Kin and Group IATs. However, there was some evidence of an effect of order on the religion IAT. A section at the end of each study will be presented to investigate potential order effects further.

Table 10 Mean D Scores according to the Order IATs were Completed

	1st IAT	SD[45]	2nd IAT	SD	3rd IAT	SD
Kin	0.26	0.3	0.23	0.27	0.2	0.26
Group	0.7	0.38	0.57	0.32	0.66	0.44
Religion	0.12	0.27	0.07	0.31	0.25	0.29

[44] The order in which multiple IATs are completed influenced participants' scores.
[45] Standard Deviation.

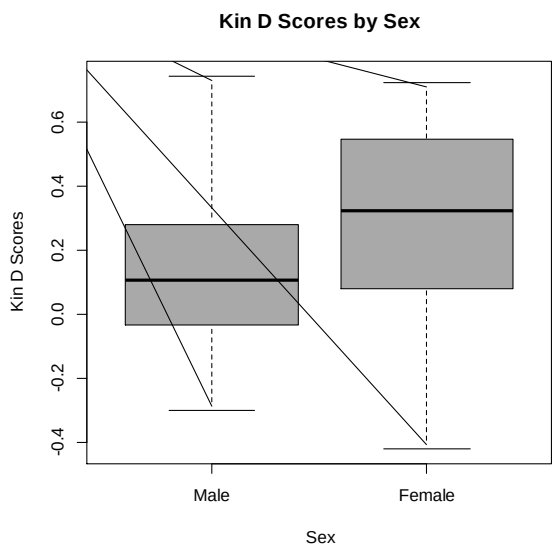
Kin IAT: Parochial Altruism and Family/Strangers

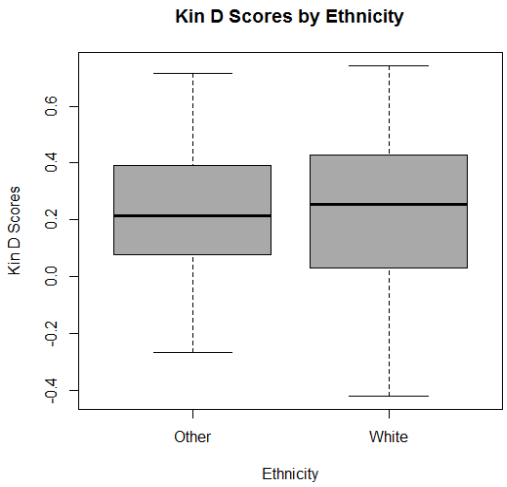
Statistics: Kin D Scores and Sex, Ethnicity, Religion

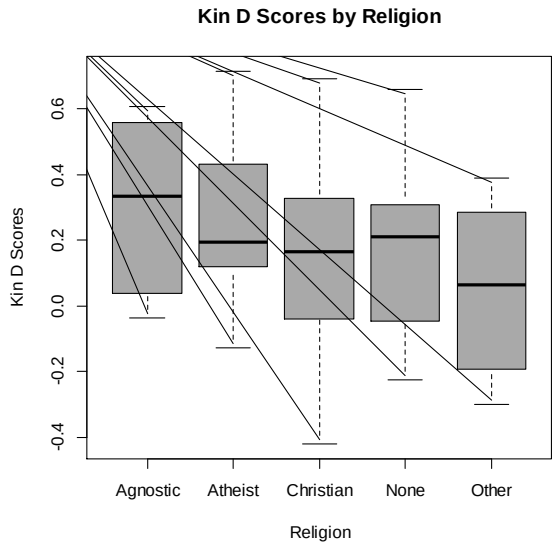
#	Hypotheses: Kin D Scores, Sex, Ethnicity, and Religion
IAT1	D Scores will be significantly different from zero across all IATs.
K1	Kin D Scores will be different according to sex. Females will score higher than males.
K2 (Null)	Kin D Scores will not be influenced by ethnicity.
K3 (Null)	Kin D Scores will not be influenced by religion.

A *t*-test revealed that kin D scores are significantly different from zero: $t = 8.5$, df = 99, $p = <0.0005$ (M = 0.24) (two-tailed). Hypothesis IAT1 is partially supported. A one-tailed *t*-test indicated that kin D scores were significantly affected by sex: $t = -2.5$, df = 71, $p = 0.007$ (Means: males = 0.14, females = 0.29). There was a large effect size ($r = 0.65$). Hypothesis K1 is accepted. Kin D scores did not vary according to ethnicity: $t = -0.08$, df = 15, $p = 0.9$ (Means: White = 0.24, Other = 0.23). This was reflected in the small effect size ($r = 0.2$). The null hypothesis K2 is accepted. Kin D scores did not vary according to religion: ($F(4, 77) = 2$, $p = 0.1$) (one-way ANOVA). The null hypothesis K3 is accepted. There was, however, a small-medium effect size ($r = 0.30$) which may be reflected by the lower D scores attained by Christians (M = 0.15) and Other religions (M = 0.05) in relation to the higher scores of Agnostics (M = 0.3) and Atheists: ($t = -1.7$, $p = 0.09$, and $t = -2.2$, $p = 0.03$) (M = 0.28). Although not significant, this may reflect stronger parochial altruistic attitudes towards family and strangers in those who are not religious relative to those who are. (Figure 38).

Figure 38 Kin D Scores by Sex, Ethnicity, and Religion







Statistics: Kin D Scores and Primes

#	Hypotheses: Kin D Scores and Primes
K4 (Null)	None and neutral primes will not elicit significantly different D scores from one another.
K5	Conflict primes will elicit larger D scores than control and cooperation primes.
K6	The cooperation prime will elicit D scores similar to control primes.
K7	Females will have higher Kin D scores than males throughout all primes, especially the conflict prime. .

Although the None and Neutral prime conditions elicited very similar D scores indicating their utility as control primes, the Conflict and Cooperation primes were not related to D scores in the expected direction (Table 11). Contrary to predicted, the conflict prime was associated with lower D scores, and the cooperation prime with higher D scores. A one-way ANOVA showed that these results were not significant (F (3, 96) = 0.22, p = 0.9) and had a very small effect size (r = 0.08). The null hypothesis K4 is accepted, but K5 and K6 are rejected.

Table 11 Mean Kin D Scores and Standard Deviations by Prime and Sex

Prime: Kin IAT								
	No Prime	SD	Neutral Prime	SD	Conflict	SD	Cooperation	SD
Total	0.24	0.3	0.23	0.26	0.21	0.24	0.27	0.31
Male	0.16	0.32	0.09	0.24	0.13	0.2	0.2	0.2
Female	0.3	0.28	0.3	0.25	0.24	0.25	0.3	0.3

Given the strong effect of sex on kin D scores, interactions between sex and prime were tested. As predicted, female kin D scores were higher than males across all primes. However, contrary to hypothesis K7, D scores were not higher for females in the conflict prime condition. An ANOVA showed this interaction to be non-significant (F (7, 92) = 1, p = 0.4). The effect size was small (r = 0.26). Hypotheses K7 is rejected.

Statistics: Kin D Scores and Personality Constructs

#	Personality Construct	Hypotheses
K8	Social Dominance Orientation (SDO)	Higher SDO scores will be associated with higher kin D scores.
K9	Reciprocity	Lower reciprocity scores will be associated with higher kin D scores.
K10	Self-reported Altruism	Higher self-reported altruism scores will be associated with higher kin D scores.
K11	Fairness	Higher fairness scores will be associated with higher kin D scores.
K12	Risk-taking	Higher risk-taking scores will be associated with higher kin D scores.

Social dominance orientation scores did not correlate significantly with kin D scores (r = -0.02, p = 0.4) (Pearson's, one-tailed). Hypothesis K8 is rejected. Nor did reciprocity scores (r = -0.08, p = 0.3), or self-reported altruism (r = 0.11, p = 0.2). Hypotheses K9 and K10 are rejected. There was a relationship between fairness scores and kin D scores (r = 0.19, p = 0.05). Higher fairness scores were associated with higher kin D scores and hypothesis K11 is accepted. There was a relationship bordering significance between risk-taking scores and kin D scores (r = -0.18, p = 0.053). Lower risk-taking scores was associated with higher Kin D scores and hypothesis K12 is accepted.

Kin IAT Order Effects

A series of Wilcoxon signed-rank tests indicated that kin D scores did not depend on the order in which the kin IAT was taken. D scores were not significantly different between those who performed the kin IAT first (compared with those who performed it second [W = 703, p = 0.6], and third [W = 631, p = 0.34]), nor compared to those who performed it second compared to third [W = 469, p = 0.6]. Below, some of the other effects of order are explored.

Kin IAT 1st Completed

D scores for those performing the kin IAT first showed a significant difference from zero: $t = 5.62$, df = 40, $p < 0.0005$ (M = 0.26). There was no significant difference according to sex: $t = -1.7$, df = 28, $p = 0.099$ (Means: Males = 0.16, Females = 0.33). There was no significant difference according to prime: (F (3, 37) = 0.24,$p = 0.87$), ethnicity ($F = 0.05$, (1, 39), $p = 0.8$), or religion (F (4, 22) = 1, $p = 0.44$).

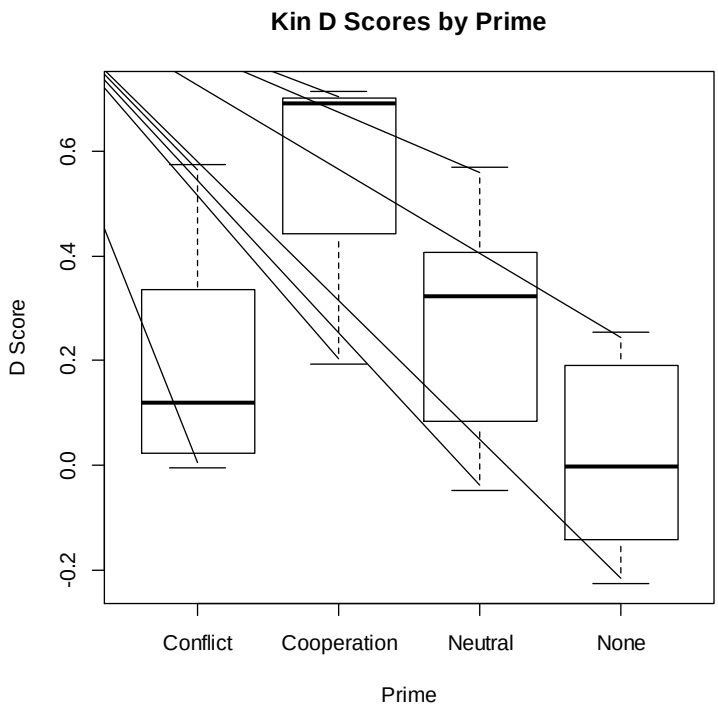
Kin IAT 2nd Completed

D scores for those performing the kin IAT second showed a significant difference from zero: ($t = 4.8$, df = 31, $p < 0.0005$ (M = 0.23)), and a significant difference in D score according to sex ($t = -2$, df = 30, $p = 0.055$ (Means: M = 0.12, F = 0.29)). There was no significant difference according to prime (F (3, 28) = 1.1, $p = 0.37$), ethnicity (F (1, 31) = 0.24, $p = 0.6$), or religion (F (4, 24) = 0.76, $p = 0.6$).

Kin IAT 3rd Completed

D scores for those performing the kin IAT third showed a significant difference from zero ($t = 4.12$, df = 26, $p = 0.0003$ (M = 0.2)), but no significant sex differences ($t = -0.74$, df = 10, $p = 0.5$ (Means: M = 0.14, F = 0.23)) (t-test). However, prime had a significant influence on D scores: (F (3, 23) = 4.4, $p = 0.014$) (ANOVA). Specifically, D scores under the cooperation prime were significantly stronger than the other primes ($t = 2$, $p = 0.055$) (Figure 39). There was no effect by ethnicity (F (1, 25) = 0.013, $p = 0.9$), or religion (F = (4, 21) = 0.73, $p = 0.6$) (ANOVA).

Figure 39 Kin D Scores by Prime (Completed 3rd)



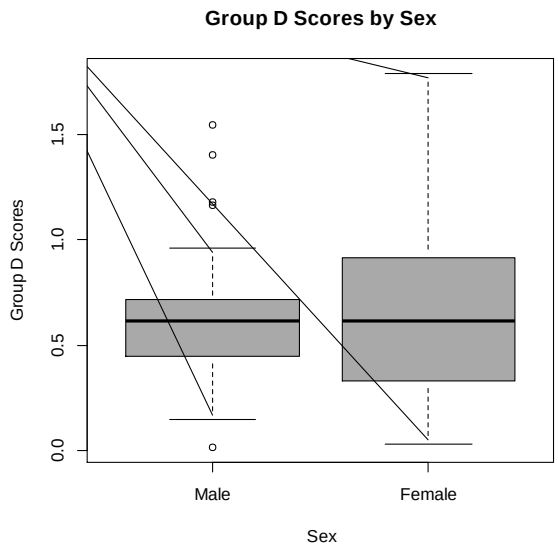
Group IAT: Parochial Altruism and Us/Them

Statistics: Group D Scores and Sex, Ethnicity, Religion

#	Hypotheses: Group D Scores, Sex, Ethnicity, And Religion
IAT1	Group D Scores will be significantly different from zero.
G1	Group D Scores will be different according to sex. Males will score higher than females.
G2	Group D Scores will be influenced by ethnicity, with non-white participants having higher D scores than white participants.
G3	Group D Scores will be influenced by religion. Minority religious-group participants will have higher D scores than majority religious participants.

A two-tailed *t*-test showed that group D scores are significantly different from zero (t = 17, df = 97, $p < 0.0005$ (M = 0.7)). Hypothesis IAT1 can be accepted partially. Contrary to the prediction, male D scores (M = 0.64) were lower than female D scores (0.67). Group D scores were not significantly affected by sex (t = 0.4, df = 75, p = 0.6) (one-tailed). There was a very small effect size (r = 0.04). Hypothesis G1 is rejected. White participant group D scores (M = 0.63) were lower than non-white participant D scores (M = 0.88). Ethnicity was significantly associated with variation in group D scores (t = 2.8, df = 17, p = 0.006) (one-tailed *t*-test) (Figure 40). There was a fairly strong effect size indicating that non-white ethnicities more strongly associated 'us' with protection, and 'them' with danger (r = 0.57). Hypothesis G2 is accepted. (Figure 40) Religion was borderline significant (F (4, 75) = 2.4, p = 0.053) although the results are mixed with Atheist's (M = 0.84) and 'Other religion' (M = 0.75) D scores being higher than the other categories (Table 12). The effect size was medium strength (r = 0.35). On this basis, hypothesis G3 is accepted.

Figure 40. Group D Score by Sex and Ethnicity



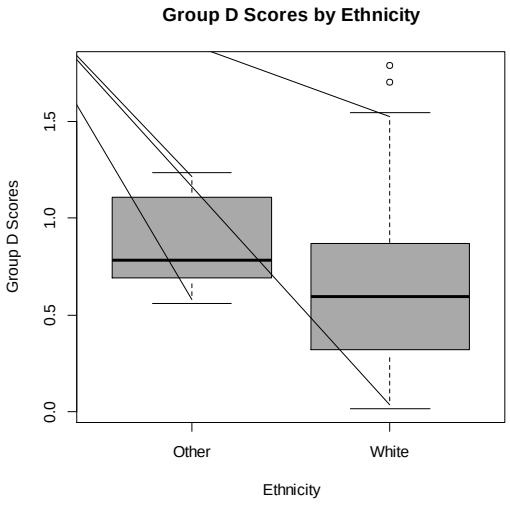


Table 12. Group D Score by Religion

Religion	Mean D Score	SD
Agnostic	0.52	0.31
Atheist	0.84	0.49
Christian	0.52	0.27
No religion	0.66	0.36
Other Religion	0.75	0.4

Statistics: Group D Scores and Primes

#	Hypotheses: Group D Scores and Prime
G4	Group D Scores will be influenced by prime.
G5	None and neutral primes will not elicit significantly different D scores from one another.
G6	Conflict primes will elicit larger D scores than control and cooperation primes.
G7	The cooperation prime will reduce D scores in comparison to control and cooperation primes.
G8	Males will have higher Group D scores throughout all primes, especially the conflict prime.
G9	Female's D scores will decrease when exposed to the cooperation prime, when compared to males and control and conflict primes.

Group D scores were not influenced by prime (F (3, 93) = 0.17, p = 0.9). Hypothesis G4 is rejected. Although D scores for the control primes were not significantly different from one another (supporting hypotheses G5), the conflict prime did not elicit higher D scores, as predicted. Hypothesis G6 is rejected on this basis. Although not reaching significance, D scores for the cooperation prime were in the direction expected in that they were reduced relative to the control and conflict primes. Nevertheless, due to a lack of significance, hypothesis G7 is rejected. There was no interaction between prime and sex (F (7, 89) = 0.63, p = 0.7). Hypothesis G8 is rejected on the basis that male D scores were not greater than female D scores. Although hypothesis G9 is rejected because of a lack of significance, the predicted direction is shown in the results: female D scores in the cooperation were lower than males exposed to the same prime, and relative to other primes (Table 13).

Table 13. Means and Standard Deviation: Group D Scores by Prime and Sex

Prime: Group IAT								
	No Prime	SD	Neutral Prime	SD	Conflict	SD	Cooperation	SD
Total	0.68	0.39	0.66	0.43	0.68	0.37	0.61	0.36
Male	0.72	0.37	0.47	0.3	0.61	0.37	0.71	0.28
Female	0.7	0.4	0.73	0.4	0.71	0.35	0.54	0.42

Statistics: Group D Scores and Personality Constructs

#	Personality Construct	Hypotheses: Group D Scores and Personality Constructs
G10	Social Dominance Orientation (SDO)	Higher SDO scores will be associated with higher group D scores.
G11	Reciprocity	Lower reciprocity scores will be associated with higher group D scores.
G12	Self-reported Altruism	Higher self-reported altruism scores will be associated with higher group D scores.
G13	Fairness	Higher fairness scores will be associated with higher group D scores.
G14	Risk-taking	Higher risk-taking scores will be associated with higher group D scores.

Social dominance orientation scores did not correlate significantly with group D scores (r = 0.04, p = 0.4) (Pearson's, one-tailed). Hypothesis G10 is rejected. Reciprocity scores did correlate significantly with group D scores (r = -0.20, p = 0.05). Lower reciprocity is correlated with higher group D scores, therefore hypothesis G11 is accepted. Self-reported altruism did not (r = -0.10, p = 0.2). Fairness and risk-taking scores did not correlate with group D scores (r = -0.03, p = 0.4, and r = 0.02, p = 0.4, respectively). Therefore, hypotheses G12, G13, and G14 are rejected.

Group IAT Order Effects

There was some evidence of order effects in group IATs according to a Wilcoxon signed-rank test (Table 14). There was a difference approaching significance between D scores attained by participants performing the group IAT first and second [$W = 687$, $p = 0.9$], although there was no significant difference between those performing the group IAT first compared to third [$W = 705$, $p = 0.4$] or second compared with third [$W = 354$, $p = 0.70$].

Table 14. Group D Scores by Order Completed

Order	N	Mean	SD
1st IAT	43	0.7	0.38
2nd IAT	26	0.57	0.32
3rd IAT	29	0.66	0.44

Group IAT 1st Completed

Group D scores were significantly difference from zero ($t = 12.1$, df = 42, $p < 0.0005$, (M = 0.7)), but were not influenced by sex ($t = 0.45$, df = 33, $p = 0.65$ (Means: M = 0.74, F = 0.68)), prime (F (3, 39) = 0.34, $p = 0.8$, or ethnicity (F (1, 41) = 0.66, $p = 0.4$). D scores were not significantly difference according to religion (F (4, 25) = 2.6, $p = 0.059$).

Group IAT 2nd Completed

Group D scores were significantly different from zero ($t = 9.1$, df =25, $p < 0.0005$ (M = 0.57)), but were not influenced by sex ($t = -0.34$, df = 22.3, $p = 0.7$ (Means: M = 0.54, F = 0.58)), or prime (F (3, 22) = 0.22, $p = 0.9$). Ethnicity appears to be associated with variation in D scores (F (1, 24) = 4.8, $p = 0.037$). White participants had

significantly lower D scores than Other (t = -2.2, p = 0.038 (Means: White = 0.51, Other = 0.87, SD = 0.3, 0.28)). Religion was not associated with variance in group D scores (F (4, 20) = 0.63, p = 0.64).

Group IAT 3rd Completed

Group D scores were significantly different from zero (t = 8.2, df = 28, p < 0.0005 (M = 0.66)), but were not influenced by sex (t = -0.98, df = 14, p = 0.3 (Means: M = 0.54, F = 0.72)), prime (F (3, 24) = 0.46, p = 0.7), ethnicity (F (1, 26) = 1.17, p = 0.3), or religion (F (4, 20) = 1.66, p = 0.2).

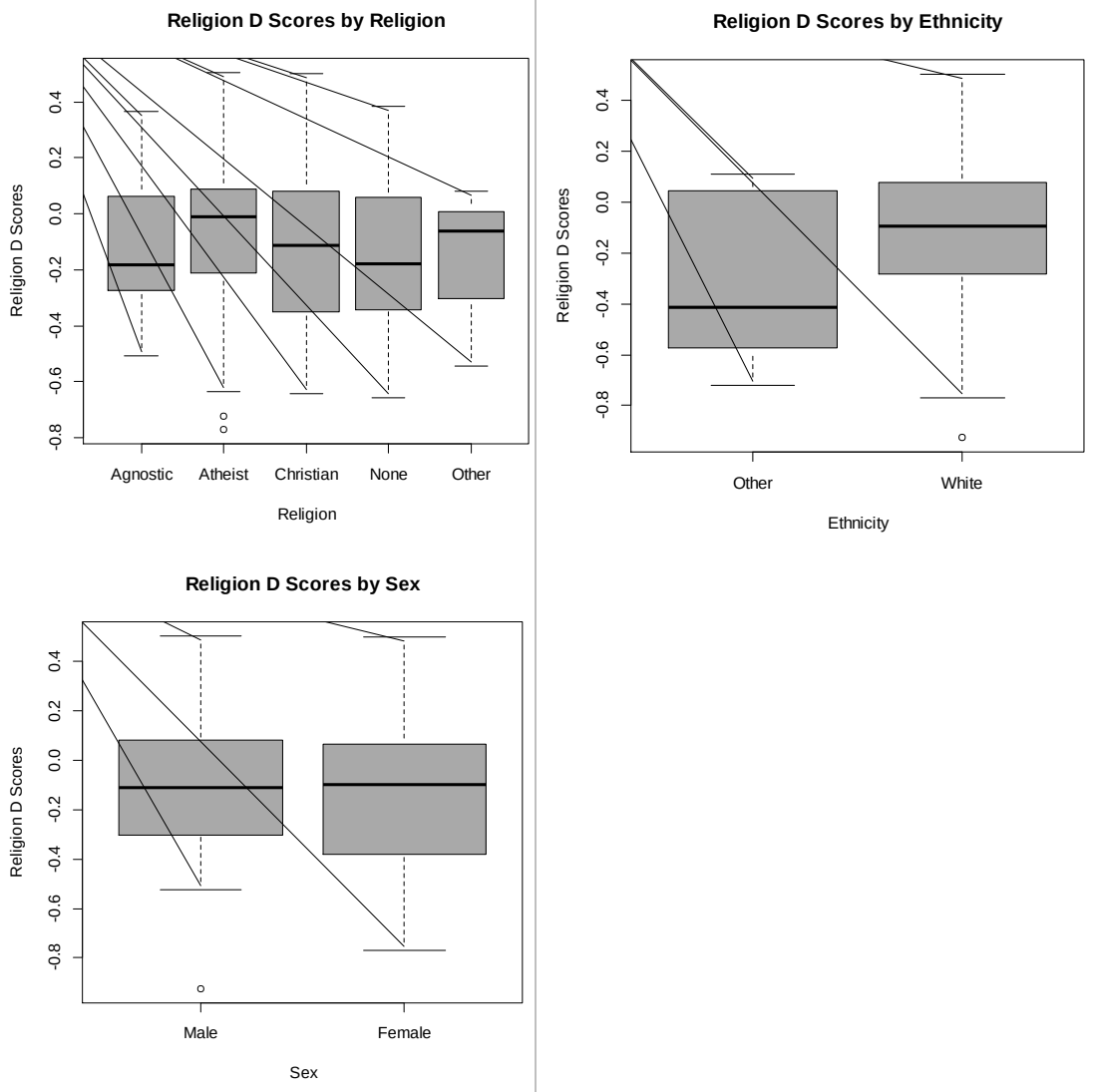
Religion IAT

Statistics: Religion D Scores and Sex, Ethnicity, Religion

#	Hypotheses: Religion D Scores, Sex, Ethnicity, and Religion
IAT1	Religion D Scores will be significantly different from zero.
R1 Null	Religion D Scores will not be different according to sex.
R2	Religion D Scores will be influenced by ethnicity, with non-white participants having higher D scores than white participants.
R3	Religion D Scores will be influenced by religion. Non-religious participants will have higher D scores than religious participants.

Religion D scores were significantly different from zero (t = 4.7, df = 94, p < 0.0005 (M = 0.14). Hypothesis IAT1 is now fully accepted. Religion D scores were not influenced by sex (t = 0.5, df = 62, p = 0.6 (Means: males = 0.12, females = 0.15)), therefore null hypothesis R1 is accepted. Ethnicity was not associated with variation in D scores (t = -1.5, df = 8, p = 0.2 (Means: White = 0.12, Other = 0.3). Hypothesis R2 is rejected. Religion was not associated with religion D scores (F (4, 72) = 0.07, p = 1) (Figure 41), and hypothesis R3 is rejected.

Figure 41. Religion D Scores by Sex, Ethnicity, and Religion



Statistics: Religion D Scores and Primes

#	Hypotheses: Religion D Scores and Prime
R4	Religion D Scores will be influenced by prime.
R5	None and neutral primes will not elicit significantly different D scores from one another.
R6	Conflict primes will elicit larger D scores than control and cooperation primes.
R7	The cooperation prime will reduce D scores in comparison to control and cooperation primes.

Unlike the other IATs, religion D scores *were* influenced by prime (F (3, 89) = 3.1, p = 0.03) (Table 15). Planned contrasts revealed that there was a significant difference between D scores in none and neutral primes, t (89) = -3.1, p = 0.03. Hypothesis R5 is rejected. Additionally, the neutral prime was associated with higher D scores than the conflict prime, t (89) = -1.9, p = 0.05, but was not significantly different from D scores in the cooperation prime, t (89) = 0.9, p = 0.04. Hypotheses R6 and R7 are rejected. Although it was predicted that the cooperation prime should be associated with lower D scores in relation to the control and conflict primes, this difference was not borne out in the results. Instead, the cooperation prime elicited stronger D scores than the conflict and neutral prime. Therefore, although hypothesis R4 is supported, the directions predicted are not.

Table 15. Means and Standard Deviations: Religion D Scores by Prime and Sex

Prime: Religion IAT								
	No Prime	SD	Neutral Prime	SD	Conflict	SD	Cooperation	SD
D Score	0.24	0.34	0.06	0.28	0.04	0.26	0.21	0.24

Statistics: Religion D Scores and Personality Constructs

#	Personality Construct	Hypotheses
R8	Social Dominance Orientation (SDO)	Higher SDO scores will be associated with higher religion D scores.
R9	Reciprocity	Lower reciprocity scores will be associated with higher religion D scores.
R10	Self-reported Altruism	There will be a relationship between self-reported altruism scores and religion D scores.
R11	Fairness	Higher fairness scores will be associated with higher religion D scores.
R12	Risk-taking	Higher risk-taking scores will be associated with higher religion D scores.

Social dominance orientation scores did not correlate significantly with religion D scores (r = 0.13, p = 0.1) (Pearson's, one-tailed). Nor did reciprocity scores (r = -0.14, p = 0.1), or self-reported altruism (r = -0.10, p = 0.2). Fairness and risk-taking scores did not correlate with religion D scores (r = -0.11, p = 0.1, and r = 0.008, p = 0.5, respectively). Hypotheses R8, R9, R10, R11, and R12 are rejected.

Religion IAT Order Effects

Whilst there was no evidence of order effects between D scores from IATs performed first or second [W = 511, p = 0.5], there was a significant difference first and third [W = 677, p = 0.05], and second and third place scores [W = 520, p = 0.04] (Table 16).

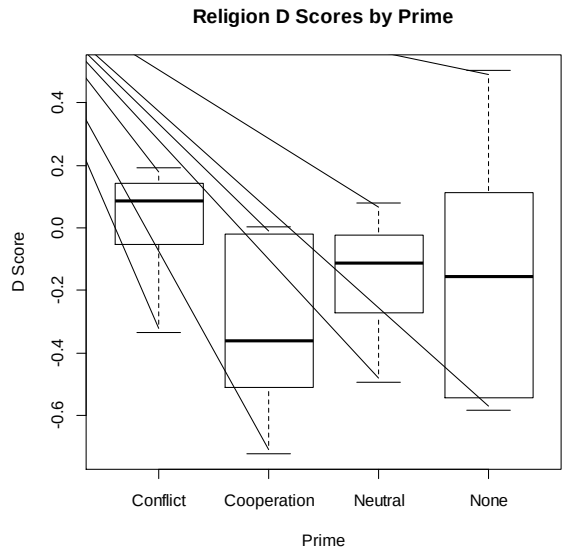
Table 16. Religion D Score According to Order

Order	**N**	**Mean**	**Standard Deviation**
1st IAT	39	-0.12	0.27
2nd IAT	29	-0.07	0.31
3rd IAT	27	-0.25	0.29

Religion IAT 1st Completed

Religion D Scores were significantly different from zero (t = -2.8, df = 38, p = 0.009 (M = -0.12)), but were not influenced by sex (t = 0.98, df = 16, p = 0.34 (Means: M = -0.043, F = -0.15)). Prime was however associated with variation (F (3, 33) = 3.4, p = 0.028) (Figure 42). Cooperation (t (33) = -3.1, p = 0.004, M = -0.31) and no prime (t (33)= -1.7, p = 0.095, M = -0.16) conditions were significantly lower than the conflict prime (M = 0.04). Ethnicity was not associated with variation (F (1, 35) = 2.4, p = 0.12),,nor was religion (F (4, 21) = 0.87, p = 0.5).

Figure 42. Religion D Score by Prime (Completed 1st)



2nd IAT Completed

Religion D Scores were *not* significantly different to zero (t = -1.2, df = 28, p = 0.3 (M = -0.07)), nor were there any sex differences (t = -0.02, df = 14, p = 0.99 (Means: M = -0.07, F = -0.07)). There was no difference according to prime (F (3, 25) = 0.33, p = 0.8), or religion (F (4, 21) = 0.43, p = 0.8). White participants D scores were not significantly different from zero (F (1, 27) = 3.9, p = 0.057 M = -0.05).

3rd IAT Completed

Religion D Scores were significantly different from zero (t = -4.5, df = 26, p = 0.00012 (M = -0.25)), and there was no sex difference (t = 0.6, df = 25, p = 0.6 (Means: M = -0.2, F = -0.3), or difference according to prime (F (3, 23) = 1.7, p = 0.2). All participants completing the religion IAT third were white therefore, differences according to ethnicity do not occur. D scores did not differ across religion (F (3, 21) = 0.2, p = 0.9).

Investigating Parochial Altruism Behaviourally

There were five different ways to allocate resources in the original behavioural paradigm (to self, to the ingroup, to the outgroup, by sacrificing an ingroup allocated resource, or by sacrificing a self-allocated resource). However, only three allocations were analysed. Specifically, the outcomes of interest are: allocations to the ingroup, and coalitional outgroup hostility, and extreme (self-sacrificing) outgroup hostility. Self-allocations were capped at 4 and therefore there is very little variation in how many resources participants allocated to themselves. Allocations to the outgroup were rare and the number was too small to make any meaningful inferences.[46] There was no evidence of correlation between any of the behavioural scores. Spearman's correlation coefficient tests revealed that: ingroup allocations were not correlated with group-based cost to the outgroup scores ($r = 0.14$, $p = 0.2$), self-based cost to the outgroup scores ($r = 0.19$, $p = 0.07$). Group-based cost to outgroup scores, and self-based cost to outgroup scores were not correlated ($r = 0.01$, $p = 0.9$). This suggests that these scores were capturing something distinct from either ingroup bias, or costly to group outgroup hostility, or costly to self outgroup hostility actions.

This section is split into three parts to investigate each behavioural outcome. Each part looks at relationships between the behavioural score (ingroup allocation, coalitional outgroup hostility, or extreme outgroup hostility), and sex, ethnicity, religion, and prime variables. Correlation tests were performed to investigate relationships between parochial altruistic behavioural scores and parochial altruistic attitudes in the form of IAT D scores. Correlation tests look for relationships between behavioural scores and specific personality constructs.

Shapiro-Wilke tests for normality indicated that none of the behavioural study results were normally distributed: Ingroup allocation ($W = 0.51$, $p < 0.05$), group-based cost

[46] The mean for outgroup allocations was 0.3, and only 12 chose to make this allocation.

to outgroup ($W = 0.86$, $p < 0.05$), and self-based cost to outgroup ($W = 0.74$, $p < 0.05$). However, behavioural allocation scores did not violate assumptions of homogeneity: ingroup allocation (F (1, 81) = 0.3, *ns*), group based outgroup hostility (F (1, 81) = 2.3, *ns*), self-sacrifice outgroup hostility (F (1, 81) = 0.2, *ns*). This, in combination with the large sample size means that parametric tests that are robust to violations of normality assumptions, such as ANOVA, can be used to investigate resource allocations by sex, religion, ethnicity, and prime.[47] Non-parametric (Spearman's) correlational tests were used to investigate relationships between allocation scores, D scores, and personality constructs to account for the lack of normality however.

Ingroup Allocations

Ingroup Allocation and Sex, Ethnicity, Religion, Prime

#	Hypotheses: Ingroup Allocations and Sex, Ethnicity, Religion, and Prime Variables
IG1 null	There will be no sex differences in ingroup allocation scores.
IG2 null	There will be no difference in ingroup allocation scores according to ethnicity.
IG3	Religious participants will have higher ingroup allocation scores than non-religious participants.
IG4	Prime will effect ingroup allocation scores.

Mean allocations to the ingroup were 5.8 (sd = 1.1). Male (M = 5.7) and female (M = 5.8) allocations to the ingroup were not significantly different ($t = -0.25$, df = 41, $p = 0.8$) (t-test, two-way). There was a very small effect size ($r = 0.04$). The null hypothesis IG1 is accepted. Ethnicity was not related to differences in ingroup allocations ($t = 0.9$, df = 12.6, $p = 0.4$) (M: White = 5.7, Other = 6.1). There was a small effect size ($r = 0.26$) (*t*-test, two-tailed). The null hypothesis IG2 is accepted. Religion was not associated with different ingroup allocation scores (F (4, 68) = 0.45, p = 0.8) (ANOVA). There was a small effect size ($r = 0.16$). Hypothesis IG3 is rejected. Prime was not associated with variation in ingroup allocation scores (F (3,

[47] ANOVA is robust to violations of normality and to an extent, homogeneity and therefore there is less effect on type I error rates (Field et al. 2012).

79) = 0.74, p = 0.5) (ANOVA). The effect size was small (r = 0.16). Hypothesis IG4 is rejected.

Ingroup Allocation and D Scores

#	Hypotheses: Ingroup Allocation and D Scores
IG5 null	Kin D scores will not be related to ingroup allocation scores.
IG6	Higher Group D scores will be associated with higher ingroup allocation scores.
IG7	Higher Religion D scores will be associated with higher ingroup allocation scores.

There was no relationship between Kin D scores and ingroup allocations (r = 0.08, p = 0.5). The null hypothesis IG5 is accepted. There was a relationship between ingroup allocations and group D scores. A Spearman's correlation test (one-tailed) showed that higher ingroup allocation was significantly related to higher group D scores: r = 0.19, p = 0.05. Hypothesis IG6 is accepted. There was no relationship between religion D scores and ingroup allocations: r = -0.04, p = 0.7. Hypothesis IG7 is rejected.

Ingroup Allocation and Personality Constructs

#	Personality Measure	Ingroup Allocations and Personality Constructs
IG8	Fairness	Lower Scores will be associated with higher ingroup allocations.
IG9	Self-Reported Altruism	Higher Scores will be associated with higher ingroup allocations.
IG10	Risk-taking	Higher Scores will be associated with higher ingroup allocations.
IG11	Nurturance	Higher scores will be associated with higher Ingroup allocations.

Spearman's correlation coefficient indicated that there was a significant relationship between ingroup allocation scores and the personality construct fairness (r = -0.31, p = 0.009). Specifically, higher fairness scores were associated with lower ingroup

allocation scores. Hypothesis IG8 is accepted. This might be due to allocations to the outgroup which is not otherwise tested here because of the small number of individuals who allocated to the outgroup (r = 0.22, p = 0.06). There was a relationship between ingroup allocations and self-reported altruism scores (r = -0.22, p = 0.04) (one-tailed). This suggests that higher self-reported altruism was associated with higher ingroup allocation. Hypothesis IG9 is accepted. Higher risk-taking was associated with higher ingroup allocation scores (r = 0.22, p = 0.04) (one-tailed). Hypothesis IG10 is therefore accepted. Nurturance was not associated with ingroup allocation scores (r = -0.03, p = 0.6). Hypothesis IG11 is rejected.

Coalitional Outgroup Hostility

Coalitional Outgroup Hostility and Sex, Ethnicity, Religion, Prime

#	Hypotheses: Coalitional Outgroup Hostility and Sex, Ethnicity, Religion, and Prime Variables
OGH1	Males will have higher group-based outgroup hostility scores than females.
OGH2	Non-white participants will have higher group-based outgroup hostility scores than white participants.
OGH3	Non-religious participants will have higher group-based outgroup hostility scores than religious participants.
OGH4	Prime will effect ingroup allocation scores.

Mean coalitional outgroup hostility scores were 4.1 (sd = 3.7). Male (M = 5.4) and female (M = 3.4) scores were significantly different (t = 2.2, df = 41, p = 0.02) (t-test, one-tailed). There was a medium effect size (r = 0.33). Hypothesis OGH1 is accepted. Ethnicity (M: White = 4.1, Other = 3.8) was not related to differences in scores (t = -0.25, df = 16.6, p = 0.4) (t-test, one-tailed). There was a very small effect size (r = 0.06). Hypothesis OGH2 is rejected. Although not reaching significance, there appeared to be a relationship between religion and coalitional cost to the outgroup scores (F (4, 71) = 2.3, p = 0.06). There was a medium effect size (r = 0.35). Planned contrasts indicated that Christian coalitional outgroup hostility scores were significantly lower than other religion groups (t (71) = -2.3, p = 0.03). This suggests

that non-religions, and minority group religions were more coalitionally hostile to the outgroup than Christians. Based on the borderline *p*-value and the medium effect size, hypothesis OGH3 is cautiously accepted with this alteration in mind. A one-way ANOVA indicated that prime did not influence scores to a significant degree (F (3, 83) = 0.004, p = 1). The effect size was very small (r = 0.01). Hypothesis OGH4 is rejected.

Coalitional Outgroup Hostility and D Scores

#	Hypotheses: Coalitional Outgroup Hostility and D Scores
OGH5	Higher Kin D scores will be associated with higher coalitional outgroup hostility scores.
OGH6	Higher Group D scores will be associated with higher coalitional outgroup hostility scores.
OGH7	Higher Religion D scores will be associated with higher coalitional outgroup hostility scores.

Coalitional outgroup hostility scores were not associated kin D scores (r = 0.02, p = 0.8). Hypothesis OGH5 is rejected. Group D scores were associated with coalitional outgroup hostility scores, but not to a significant degree, and not in the direction predicted (r = -0.15, p = 0.09). This test result indicates that lower group D scores are associated with higher coalitional outgroup hostility which was not predicted. Hypothesis OGH6 is rejected. Religion D scores were associated with coalitional outgroup hostility scores, although not reaching significance (r = 0.16, p = 0.09). Higher religion D scores were associated with higher coalitional outgroup hostility scores. Hypothesis OGH7 cannot be accepted because of the lack of significance, but these results are interesting nonetheless.

Group-Based Outgroup Hostility and Personality Constructs

#	Personality Measure	Group Sacrifice/Costs
OGH7	Intrinsic Religiosity	Lower scores will be associated with higher group sacrifice/costs.
OGH8	Extrinsic Religiosity	Higher scores will be associated with higher group sacrifice/costs.
OGH9	Confidence	Lower scores will be associated with higher group sacrifice/costs.
OGH10	Emotional Instability	Higher scores will be associated with higher group sacrifice/costs.

Spearman correlation tests indicated that there was some relationship between coalitional outgroup hostility and personality constructs. Lower intrinsic religiosity was also associated with higher coalitional outgroup hostility scores (r = -0.23, p = 0.03). Hypothesis OGH7 is accepted. Higher extrinsic religiosity was associated with higher coalitional outgroup hostility (r = 0.20, p = 0.04). Hypothesis OGH8 is accepted. Lower confidence scores were associated with higher coalitional outgroup hostility (r = -0.22, p = 0.03) (one-tailed). Hypotheses OGH9 is accepted. Higher emotional instability was associated with higher coalitional outgroup hostility (r = 0.21, p = 0.04). Hypothesis OGH10 is accepted.

Extreme Outgroup Hostility

Self-Based Outgroup Hostility and Sex, Ethnicity, Religion, Prime

#	Hypotheses: Extreme Outgroup Hostility and Sex, Ethnicity, Religion, and Prime Variables
ExOGH1	Males will have higher extreme outgroup hostility scores than females.
ExOGH2	Non-white participants will have higher extreme outgroup hostility scores than white participants.
ExOGH3	Religious participants will have higher extreme outgroup hostility scores than non-religious participants.
ExOGH4	Prime will effect extreme outgroup hostility scores.

The mean score for extreme cost to the outgroup was 1.9 (sd = 1.1). There was no sex difference in these scores (t = 0.3, df = 55.5, p = 0.4) (Mean: M = 2, F = 1.9). There was a very small effect size (r = 0.04) (t-test, one-tailed). There was no variation according to ethnicity (t = 0.6, df = 13, p = 0.3) (M: White = 1.9, Other = 2.1). There was a small effect size (r = 0.15) (t-test, one-tailed). Religion was not associated with differences in extreme outgroup hostility (F (4, 68) = 1.3, p = 0.3) (ANOVA). There was a small effect size (r = 0.26). Prime was not associated with variation in scores either (F (3, 79) = 0.4, p = 0.7) (ANOVA). The effect size was small (r = 0.12). Hypotheses ExOGH1, ExOGH2, ExOGH3, and ExOGH4 are rejected.

Extreme Outgroup Hostility and D Scores

#	Hypotheses: Extreme Outgroup Hostility and D Scores
ExOGH5	Higher Kin D scores will be associated with higher extreme outgroup hostility scores.
ExOGH6	Higher Group D scores will be associated with higher extreme outgroup hostility scores.
ExOGH7	Higher Religion D scores will be associated with higher extreme outgroup hostility scores.

Spearman's correlation coefficient analysis indicated that there was a significant relationship between kin D scores and extreme outgroup hostility (r = -0.19, p = 0.05) (one-tailed). Lower extreme outgroup hostility scores were associated with higher kin D scores. Hypothesis ExOGH5 is accepted. There was no relationship between extreme outgroup hostility and group D scores (r = -0.08, p = 0.2) (one-tailed). Hypothesis ExOGH6 is rejected. There was however, a significant relationship between religion D scores and extreme outgroup hostility (r = 0.27, p = 0.01). Hypothesis ExOGH7 is accepted. Those scoring higher for attitudes of protection towards Christian and Jewish symbols, and danger towards Muslim symbols, also had higher extreme outgroup hostility scores.

#	Personality Measure	Hypotheses: Extreme Outgroup Hostility Scores
ExOGH8	Social Dominance Orientation	Higher scores will be associated with higher extreme outgroup hostility scores.
ExOGH9	Reciprocity	Lower scores will be associated with higher extreme outgroup hostility scores.
ExOGH10	Intrinsic Religiosity	Higher scores will be associated with higher extreme outgroup hostility scores.
ExOGH11	Extrinsic Religiosity	Higher scores will be associated with lower extreme outgroup hostility scores.

Spearman's correlation coefficient tests were conducted to look for relationships between behavioural responses in terms of extreme outgroup hostility and personality constructs. Higher social dominance orientation scores were found to be associated with higher extreme outgroup hostility scores (r = 0.30, p = 0.006) (one-tailed). Hypothesis ExOGH8 is accepted. Lower reciprocity scores were associated with higher extreme outgroup hostility (r = -0.28, p = 0.03) (one-tailed). Hypothesis ExOGH9 is accepted. Neither intrinsic nor extrinsic religiosity were correlated with extreme outgroup hostility (r = -0.01, p = 0.5, r = -0.003, p = 0.5, respectively) (one-tailed). Hypotheses ExOGH10 and ExOGH11 are rejected.

Discussion of Results

Support for Parochial Altruism

On the basis of these results, parochial altruism is present to varying degrees in all people (as generalised from a student sample). Overall, ingroups and kin are associated with protection, and outgroups and strangers are associated with danger. This supports the notion that different degrees of parochial altruism are present in a population in the form of parochial altruistic attitudes (Choi & Bowles 2007).

Parochial altruistic attitudes were much stronger in intergroup than kinship scenarios, lending support to multilevel selection in parochial altruism (Choi & Bowles 2007; Gintis et al. 2003). If parochial altruism underlies the radicalisation process as is proposed in this thesis, then these results suggest that the potential for radicalisation is present in us all, and importantly, *vary* across individuals. There may be different levels of sensitivity to groupishness, and some individuals might be more sensitive to groups, and threats to groups than others. It may be that these individuals are also more likely to behave in a parochially altruistic way, although it is emphasised that this does not necessarily mean that such individuals will engage in violence.

This is not to imply that individual variation in parochial altruistic attitudes can or should be used predict or profile potential terrorists. Rather, it suggests that some individuals, in the right conditions and circumstances (including experiences of small group dynamics associated with increasing radicalisation) may be more open to perceptions of threat to the ingroup, extremist ideology, and more extreme parochial responses, than others. Others still may be more inclined towards non-violent action (including avoidance of outgroups).

Stronger parochial altruistic attitudes were also related to group-centricism (as measured with explicit measures, i.e. surveys), although this was more pronounced in parochial altruistic behaviours (which are addressed later). The overall lack of correlation between explicit survey measures and implicit association is not surprising given that this is a feature of IAT research (e.g. Payne et al. 2008; Hofmann et al. 2005; Conner et al. 2007). Nevertheless, the findings indicate that group-centricism is especially related to stronger parochial altruistic attitudes in intergroup scenarios, and somewhat related to kinship scenarios. There was no association with the religion IAT.

These findings support the notion that in some individuals, group-interest is confused with self-interest, indicating an overlap between perceptions of what is beneficial for the group as beneficial for self (Baron 2001; Swann et al. 2009). This suggests that stronger explicit group-centricism is very likely to be associated with implicit attitudes biasing the ingroup. Importantly, terrorists and those becoming radicalised are not alone in this propensity, and this feature of parochial altruism tells us little about the progression towards terrorism. However, it does tell us about the human propensity towards biasing towards one's ingroup generally.

All humans are essentially parochially altruistic to some extent. Considering terrorism and radicalisation as an *inter*group process on the basis that one group's (or individual's) parochial altruistic attitudes and/or behaviours are likely to elicit another group's (or individual's) parochial altruistic attitudes or behaviour, indicates that counter-terrorism efforts should *not* be centred on one group (i.e. terrorist constituents), but beyond, to the wider society. Such efforts may help inhibit parochial responses to parochial events between groups (such as the formation of the English Defence League in response to extremist Islamists abusive protests at the Luton homecoming parade, Judd 2009; Anon 2013).

Parochial Altruism and Sex

Parochial altruistic attitudes in kinship scenarios were stronger in females than males supporting the notion than females are more sensitive to the cues of parochial altruism in kinship scenarios (e.g. Fischer-Shofty et al. 2012; Navarrete et al. 2007; Navarrete et al. 2009; McDonald et al. 2012a; Wrangham et al. 2006; Wrangham 1999). Strangers may be perceived as threats to females implicitly because they may have represented a threat to the fitness of ancestral females (i.e. sexual coercion, diseases and parasites, infanticide). These findings are interesting with regards to terrorism and radicalisation because Islamic extremism/Pan-Islamism often invokes the notion of kinship, and 'brothers, and sisters' in the Muslim Umma. On the basis of these results,

it should be females who are most drawn to such arguments and depictions of the Muslim group as familial. This may lead to increasing ingroup bias, but not necessarily aggression and hostility, which have been shown to be distinctly male traits (McDonald et al. 2012).

Contrary to expectations and previous research, there were no sex differences in parochial altruistic attitudes in intergroup scenarios (McDonald et al. 2012; Reinisch & Sanders 1986; van Vugt 2009; Potts & Hayden 2010; van Vugt & Park 2009; e.g. Fischer-Shofty et al. 2012). Males had been predicted to have stronger parochial altruistic attitudes than females in the intergroup IAT. This did not materialise. Instead, male and female participants in this study had very similar levels of parochial altruistic attitudes towards ingroup/outgroup categories.

This lack of sex difference may be explained by the way that parochial altruism in this case, was operationalised (i.e. rather than honing in on violence and aggression, it included broader parochial aspects such as fear, disgust, and avoidance). In which case, the notion that non-aggressive parochial ingroup bias in intergroup scenarios occurs similarly across both sexes is supported (i.e. Tajfel & Turner 1979). However, an alternative explanation might be that whilst male parochial altruistic attitudes *are* similar to female attitudes, their parochial altruism is more manifest in behaviour, which might support a cultural proposition for sex differences in parochial altruism (Gelfand et al. 2012).

Minority Groups and Parochial Altruism

Parochial altruistic attitudes in intergroup scenarios were influenced by group membership, or markers of minority, in the form of religion and ethnicity. Minority groups (in terms of numeric, status, or power) in the UK (non-white ethnicity, and non-Christian religions for example), had stronger parochial altruistic attitudes than

majority groups (white, Christian). This lends support to the notion than smaller groups may have perceived threat towards the (ancestral) ingroup more keenly than larger groups because of the risk to themselves in terms of asymmetric power and the risk of resource encroachment, victimisation, and annihilation (e.g. Alexander 1987; Gat 2009; Neuberg et al. 2011). This may have left individuals today with sensitivity towards minority group status, even in situations in which that minority status is not triggered (the intergroup IAT used context free categories that did not invoke a particular group membership). That is, even in experimental, context-free situations, minority group members might still *experience* minority group status which would explain their propensity towards parochial altruistic attitudes in these results.

Minority groups may be more sensitive to contexts in which parochial altruism is triggered, which is relevant for terrorism given that risk factors associated with radicalisation include relative deprivation and discrimination, particularly for minority groups (Piazza 2011). These findings can perhaps be interpreted as lending an evolutionary explanation for why minority group membership tends to be a risk factor associated with terrorism (e.g. Horgan 2008). The minority status of a given group may make an individual more sensitive to parochial altruism, especially in intergroup contexts, on the basis of status differentiation, and potential threats from the outgroup. Whilst in our evolutionary past this would have been associated with threats to resources, of war and annihilation, and threat of absorption, modern (Western) human groups are less adversely effected, but effected nonetheless. Relative deprivation, discrimination, and general inequalities may not inhibit fitness today, but they are examples of conditions which may trigger parochial altruism more keenly in minority groups (Chapter 3). This perhaps highlights the earlier point that radicalisation and terrorism is an *inter*group phenomenon and efforts should be made to consider the effect of majority/dominant outgroups on vulnerable communities is preventing or inhibiting radicalisation.

Intergroup Situations: Conflict and Cooperation

It was predicted that the pre-IAT primes of intergroup conflict would elicit stronger parochial altruistic attitudes across all IAT conditions. However, this prediction was not supported by any of the results. It might be that the prime failed to prompt the ambiguous but salient social identity (the Red's) that it was designed for. This may be because participants did not accept or care that their answers to the survey questions put them in the 'Red group', and/or that the primes themselves did not resonate with them. This might be in part due to the images that were included with the prime, which were possibly too white, and too male.

Contexts of Danger and Parochial Altruism

The contextual IAT (religion) indicated that parochial altruistic attitudes are directed towards Christian/Jewish and Muslim group markers, with Muslims being associated with danger. The results of this study were relatively weak in comparison to the other intergroup scenarios, but they do nonetheless indicate that perceptions of particular intergroup contexts can be measured by IAT, and follow the predicted outcomes. There was no association between these scores and religious group membership despite the sample being a mixture of religious denominations suggesting that these religious categories (Christian/Jewish, Muslim) were largely considered as groups rather than as group memberships. Nevertheless, it was necessary to remove two Muslim participants' data because their attitudes contradicted those of the remaining sample (they strongly associated Muslims with protection, and Christian/Jewish markers with danger). This was not borne out in other religious group memberships

It is suggested here that these findings may be interpreted as an indication that Muslim group markers may elicit in individuals in the UK (of differing religious denomination, nationality, ethnicity), associations of danger, which would support the notion that

Islamophobia and discrimination towards Muslims in the UK is on the rise, at leads in terms of attitudes (Mirza et al. 2007; Klausen 2009; e.g. Brighton 2007; Hutchison & Rosenthal 2011). It also indicates that scenarios that present groups that are known to be associated with danger (which is an unfortunate by-product of Islamic extremist terrorism for Muslims) still trigger parochial altruistic attitudes, albeit to a lesser degree. Thus, it may be that groups that are associated with danger are perceived as such, and given that this study used symbols of religion, it is suggested that such symbols may trigger parochial altruistic attitudes also.

This may have important implications for societies in which communities choose to adhere to dress codes and other visual group membership markers, especially where that group (or elements of it) are associated with terrorism (Federal Bureau Of Investigation, 2006; Moghaddam, 2005; Precht, 2007; Richardson, 2006; Sageman, 2008). Where adherence to group markers, including dress, rituals, dietary, hygiene, sexual customs and norms enhance within group bondedness and loyalty, they may also increase parochialism from outside of the group (Gintis et al. 2001; Irons 2001; Sosis & Alcorta 2003; Whitehouse 2013; Atran 2002; Sosis et al. 2008; Swann, Gómez, Dovidio, et al. 2010). This has implications for the notion of radicalisation as an *inter*group process. Cues of group membership, particularly where that group is associated with danger, may trigger parochial altruistic attitudes in other groups which may fuel radicalisation in *both* sets of groups. Discrimination is well known to be a risk factor in terrorism. Emphasising group membership through adherence to group markers may serve to remind outgroups of the difference and dangers associated with the Muslim group (even though a minority of Muslims support or commit terrorism). Thus, more discrimination and parochialism on the part of outgroups might be expected.

Parochial Altruistic Behaviour: Ingroup Bias

Stronger parochial altruistic behaviour in terms of allocation of resources was related to stronger parochial altruistic attitudes in intergroup scenarios, but not kinship or religion IATs. This suggests that parochial altruistic attitudes in intergroup scenarios *did* translate into groupishness behaviour in the form of bias in allocations that were *not* extended to the outgroup. This indicates that individuals can be expected to not only have parochial altruistic attitudes towards their ingroups, but to also behaviourally bias towards them to the *detriment* of outgroups (i.e. non-cooperation). The lack of association between ingroup bias behaviours and parochial altruistic attitudes in kinship and religion IATs suggests that ingroup bias in this case is not related to parochial altruism in either of these situations. That is, it is associated with ingroups, rather than kin, or religious group markers. This finding is perhaps nothing new, and potentially refers to positive differentiation between groups (e.g. Tajfel & Turner 1979).

Ingroup bias was not related to sex, or minority group membership and this was predicted on the basis that all individuals, can be expected to display groupishness and bias towards the ingroup (Tajfel & Turner 1979; Bowles & Gintis 2004b). Groupishness as measured by explicit surveys were found to be correlated with ingroup bias behaviour which suggests that conscious expressions of group-centricism is associated with decisions to behave in a group-centric way. This is despite the lack of association between parochial altruistic attitudes and explicit measures. This might suggest that some form of social desirability is at play in influencing behaviour (Batson et al. 1978).

Parochial altruistic attitudes did predict groupishness in the form of behavioural ingroup bias, but behavioural ingroup bias did *not* predict outgroup hostility. These results imply that outgroup hostility may be a separate phenomenon to ingroup bias (De Dreu et al. 2011; Tajfel & Turner 1979). This has important implications for the

radicalisation process. It suggests that although individuals may bias towards the ingroup and have parochial altruistic attitudes in intergroup contexts, these attitudes and behaviours do not necessarily translate into hostility towards outgroups. However, ingroup bias behaviours (such as signalling) may nevertheless increase the visibility of, and adherence to, boundaries between groups, which may enhance parochialism *from* outgroups (Rosenthal & Crisp 2006; Fincher & Thornhill 2008; Bowles & Gintis 2004a; Bernhard et al. 2006). These findings therefore prompt caution when dealing with individuals who appear to be going through the radicalisation process (i.e. identifying with the Muslim group, presenting parochial altruistic attitudes, and ingroup biasing behaviours such as increasing adherence to group norms and customs) (e.g. Federal Bureau Of Investigation, 2006). These outcomes do not necessarily mean that these individuals will be hostile to the outgroup.

Coalitional Outgroup Hostility

Males were more likely than females to coalitionally aggress against the outgroup in the resource allocation game. These findings lend support to the Male Warrior Hypothesis that males share a preference for group aggression (e.g. coalitional groups) (McDonald et al. 2012; Wrangham 1999; van Vugt 2009; Wrangham & Peterson 1997; Navarrete et al. 2010; Lehmann & Feldman 2008). These findings, as well as the evolutionary theory behind them may explain why males are overrepresented in terrorist groups, and intergroup conflict more generally (Silke 2008; McCauley & Moskalenko 2011; Sageman 2008).

The hypothesis that minority group members would indicate more coalitional outgroup hostility than majority group members was only somewhat borne out in the results. Minority and majority ethnic groups were equally likely to coalitionally aggress indicating that group size in this instance, was not important. However, it should be recalled that outgroup hostility is just one parochial altruistic response, and smaller group sizes are also associated with fear and avoidance of outgroups. Although the

findings of this aspect of the project do not suggest minority groups were more likely to engage in parochial altruistic behaviour, it is possible that they may have given alternative parochial altruism responses, such as fear and avoidance.

Interestingly, in support of the hypothesis that smaller groups would behave more parochially altruistically, Christians were *less* likely to behave in a coalitional outgroup hostile manner than other religions and non-religions. Christianity remains the dominant religion in the UK (Islam and non-religion being other large minorities) (Census 2012). It might be that there is something about Christianity which influences individuals away from coalitional outgroup hostility. Given the strong theory relating to group sizes and threats, it may be that these results provide some support for the hypothesis that minority groups are more likely to coalitionally aggress against outgroups.

Why minority religious group membership should promote this tendency rather than minority ethnicity is a puzzle. It is more of a puzzle because lower (explicit) religiosity was associated with coalitional outgroup hostility. This suggests that those who are *less*, or perhaps, nominally religious are more prone to coalitional aggression choices. Devotion to religious belief, can be distinct from devotion to a religious group, and the latter is more likely to result in support for extreme parochial altruism, including suicide terrorism (Ginges & Hansen 2010). The association between lower levels of religiosity and outgroup hostility in this case may not be surprising since the emphasis is on *coalitional* aggression rather than self-sacrifice.

Nevertheless, it is an interesting finding and one that is perhaps reflected in early radicalisation. Khan for instance, had little interest in religion, yet became involved in a gang that engaged in racist battles with other gangs, and this story is similar for the Lee Rigby killers. A *lack* of religiosity may be associated with coalitional outgroup hostility, especially in males, due to attempts to enhance social identity (Chapter 3), and those other features associated with male coalitional aggression (status, risk-

taking, testosterone, vengeance) (Chapter 4). In this way, the propensity towards coalitional behavioural parochial altruism might be tied to the early radicalisation process. It may have been present prior to embracing Islam in one form or another (i.e. extremist Wahhabism, Pan-Islamism). These findings may offer some insight into *why* gang membership may be associated with radicalisation.

As predicted, coalitional outgroup hostility was also related to vulnerability (low confidence and high emotional instability). This supports the notion that vulnerability is associated with sensitivity to cues and conditions of intergroup relations, and parochial altruistic responses (e.g. Schaller, Park, et al. 2003; Schaller, Park, et al. 2003). This finding and the theory associated with it may further shed light on those personal vulnerabilities that are proposed to be so important in the radicalisation process, but which are rarely explicated further (e.g. Horgan 2008). In this case, low confidence and high emotional instability according to explicit measures were associated with higher levels of coalitional outgroup hostility. Individuals who may be vulnerable to radicalisation may also exhibit such vulnerabilities, and these individuals are more likely to perceive intergroup threat more keenly, but also, according to these findings, coalitionally aggress against outgroups in response.

Extreme Outgroup Hostility

Extreme outgroup hostility (self-sacrifice to significantly aggress against the outgroup) was not related to sex, or minority group membership, which was not expected. It was hypothesised that males (in line with the male warrior hypothesis), would sacrifice personally to aggress against the outgroup (e.g. McDonald et al. 2012). Males and females however, did not express extreme outgroup hostility differentially in this study. Nor did minority groups, which was not expected. This suggests that intergroup aggression where males are concerned may be more closely related to coalitional aggression than self-sacrifice, and that minority group membership alone, is not enough to warrant extreme parochial altruism. Also contrary to expectations, religious

group membership was not associated with extreme outgroup hostility, nor was religiosity. These findings do not support those of Ginges et al (Ginges & Hansen 2010; Ginges et al. 2009).

Interestingly, extreme outgroup hostility *was* found to be associated with parochial altruistic attitudes in the kinship, but not the intergroup, IAT. Stronger parochial altruistic attitudes in the kinship scenario was associated with *less* extreme outgroup hostility. This might indicate a preference for non-violent parochial altruism in kinship scenarios such as flight (e.g. Neuberg et al. 2011). The lack of relationship between parochial altruistic attitudes in the intergroup IAT and extreme outgroup hostility behaviours might have been predicted on the basis that outgroup hostility may be a separate but somewhat related function in human cognition (e.g. De Dreu et al. 2011; van Vugt 2009). It seems to support this hypothesis.

Extreme outgroup hostility behaviour *was* related to parochial altruistic attitudes in the religion IAT. That is, stronger parochial altruistic attitudes towards Christian/Jewish and Muslim group markers were associated with more extreme parochial altruism. This suggests that perceptions of dangerous outgroups may be related to an increased willingness to self-sacrifice to harm outgroups. These findings may be especially relevant and important to terrorism and radicalisation given the centrality of perceptions of threat and harm to the Muslim Umma. On the basis of these findings, it is suggested that individuals who perceive outgroup threat to the Muslim Umma may be more likely to engage in costly-to-self acts of aggression towards said outgroup.

Importantly, these results are *not* related to ideology, indoctrination, or socialisation, propaganda or any other feature associated with radicalisation and influencing perceptions. Rather, they show that the capacity to perceive dangerous outgroups, is not only variable across individuals, but associated with willingness to engage in costly-to-self acts of hostility in a non-terrorist/extremist sample, without external influences (from ideology etc.). Additionally, perceptions of superiority/inferiority of

certain groups, and group-centricism (as interpreted by low levels of individual reciprocity) was found to also increase the likelihood of extreme outgroup hostility. This supports the notion that individuals who express social dominance orientations, and group-centricism, are more likely to behave in a parochially altruistic manner (e..g. Kurzban & Leary 2001).

Overall, these findings and the associated theory, suggests that some individuals may be more prone to parochial altruistic attitudes than others, particularly in intergroup scenarios, and that importantly, some are more sensitive to *perceptions of threat* generally. These sensitive, in combination with other features of parochial altruism (individual variation, sex, minority group membership, and group-centricism), social identity (identification), and radicalisation (risk factors, personal vulnerabilities, grievances, small groups, ideology, indoctrination, socialisation etc.), create a perfect storm in which an individual *actively* participates in the radicalisation process.

7. Discussion and Conclusion: Insights from Social and Evolutionary Psychology into Terrorism and Radicalisation

"Muslims all over the world... you are not safe, not in the East or the West"

Mohammad Sidique Khan

(Martyrdom Video Khan 2013)

Introduction

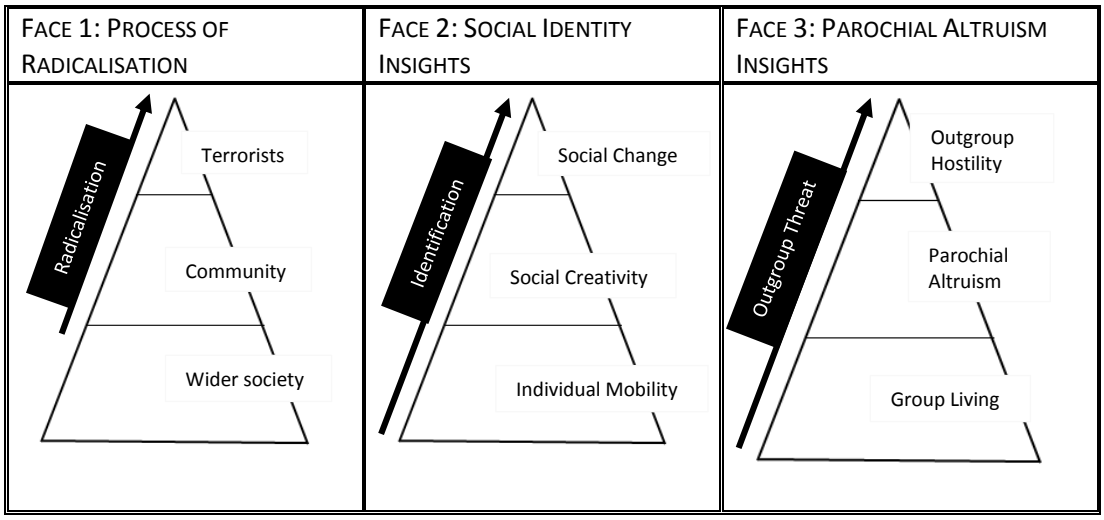
Why do people become involved in terrorism? How can social and evolutionary psychological theory help us to understand certain features of radicalisation, in order to explain why individuals support, engage with, and/or participate in terrorism? This thesis has proposed that terrorism is a parochially altruistic behavioural response to evolutionarily relevant threats to the Muslim Umma. Parochial altruism may predispose individuals to sensitivity to (potential) cues of threat, and to also respond to those cues parochially. Indoctrination and socialisation, although important for radicalisation, are not necessarily be required. Terrorist grievances represent conditions that would have triggered parochially altruistic responses in our ancestors, which although not relevant to fitness today, are present and variable in all humans. Variation in sensitivity to parochial altruism may influence the extent to which threats to the ingroup are perceived. The empirical results suggest that minority groups are most sensitive to parochial altruism, which is important given the centrality of inequality and discrimination, particularly to minority groups, in terrorism. Other researchers have shown that males are more sensitive to intergroup conflict than females (McDonald et al. 2012; Fischer-Shofty et al. 2012) Social identity processes shed light on how individuals may manage torn identities, and gradually come to identify with the Muslim Umma, which may lead to increasing support, engagement, and eventual participation in terrorism. Coalitional outgroup aggression was associated with sex (males), feelings of vulnerability, and low religiosity. Extreme

outgroup hostility was associated with perceptions of outgroup threat, group-centricism, and social dominance orientation. Terrorism and radicalisation are proposed here to be intergroup processes because parochialism causes parochialism. Islamist extremist terrorism is not simply a matter of one-way parochialism, but an interaction between parochialisms of different groups.

Figure 43 depicts the Lethal Mind-set pyramid model. Although there are comparable features on each face of the pyramid model (such as wider society in Face 1 seemingly matching up to individual mobility or group living in Face 2 and 3), it is more accurate to consider these features as layers. That is, humans have an evolved tendency towards living in groups (Face 3, parochial altruism), and therefore a preference for groups that provide well for them (Face 2, social identity). Within those groups, individuals are parochially altruistic in intergroup contexts, possibly to the point of extreme parochial altruism, or outgroup hostility.

However, Face 2 shows that in our modern society – individuals – although still having a tendency towards groupishness, may leave and join different groups if possible. To an extent this is also reflected in different ways to manage multiple group memberships or torn identity (Chapter 2). That is, an individual can be British (Face 1, wider society), and Muslim (Face 1, community), or in the case of converts, be Christian (Face 1, wider society) and choose individual mobility (Face 2) to become Muslim (Face 1, community). Once the group membership is salient and the intergroup situation warrants it, parochial altruism comes into play (Face 3). The parochial altruism mechanism underlies the propensity to categorise into ingroup and outgroup, and bias towards ingroups and against outgroups. It thus underlies the process of social identity and comparison that occurs with social creativity and social change strategies. This categorisation and bias towards the ingroup, and perceptions of threats to the ingroup from outgroups is proposed to underlie the radicalisation process.

Figure 43 Faces of the Pyramid Model



This chapter summarises and discusses features of terrorism and radicalisation (Chapter 2) on the basis of insights from social and evolutionary psychology, and the experimental findings. Terrorist grievances are first interpreted as evolutionarily relevant conditions of threat to the ingroup, which are then applied to features of the Muslim group in order to explain why terrorism might be considered an act of parochial altruism. The process of radicalisation is then discussed in conjunction with insights garnered from the concepts of social identity (Chapter 3) and parochial altruism (Chapter 4), and the empirical findings (Chapter 5 & 6). Perceptions of threat and motivations towards violence are then discussed. Next, some of the core limitations and caveats of the project are overviewed, including some assumption and definitional considerations. Implications of this research are presented next with proposals for harnessing groupishness in several important ways, including redirecting identification, and accommodating individual differences. Finally, future research is proposed. In light of the recent events in the Middle East and the spread of ISIS, this future research focuses on the potential threat that returning foreign fighters represent to the West.

Terrorist Grievances as Evolutionarily Relevant Cues of Threat to the Muslim Umma

Conditions of Threat to the Ingroup

One of the advantages of utilising evolutionary psychology, and parochial altruism in particular to investigate potential cues and conditions associated with terrorist grievances is that it can offer "deeper conceptual texture… It helps explain why specific categories of people arouse certain forms of threat, and why specific threats arouse specific expressions of prejudice" (Schaller, Park, et al. 2003, p.131). Certain conditions and cues trigger parochial altruistic responses, and these tend to be intergroup (although can occur within groups also, e.g. Reeve, In Press). These conditions, cues, and expected responses may shed light on underlying features and cues of terrorist grievances, and why perceptions of conflict are experienced. Such insight may also help us to understand why the perception that violence is just, moral, and urgent occurs in response to the perception of conflict. This is particularly important given the central role that such perceptions have in the process of radicalisation, and terrorists themselves.

Part of the immense difficulty in explaining terrorism is that groups using terrorism vary so much from one another (Post 2009). Different groups have different types of grievances which will be influenced by the environment that those groups have developed in, and which will similarly influence the type of goals, and therefore the recruits and methods they have access to (Crenshaw 1981). Most research on terrorism suggests that grievances, and perceptions of conflict and violence are influenced and propelled by indoctrination and socialisation (Sageman 2008; Bakker 2006; Silke 2008). It is argued here that mechanisms such as parochial altruism may predispose individuals to sensitivity to (potential) cues of threat, and to also respond to those cues parochially. Indoctrination and socialisation would, in this case, not necessarily be

required. This does not discount the importance of indoctrination or socialisation in terrorism and radicalisation. Rather, indoctrination, socialisation, and ideology may facilitate, enhance, and direct the parochial altruism mechanism towards a particular interpretation of these cues (Table 17).

Table 17. Terrorist grievances as Evolutionary Intergroup Threats

Macro Causes	Terrorist Grievances	Evolutionary Analogue	Evolutionary Outcome for Ingroup (Ancestral)
Invasions/wars/History of Violence	Iraq, Afghanistan, torture, rendition, Abu Ghraib, Camp X	Aggression, Attack, Conflict	Defensive attack, revenge (deterrence)
Foreign Policy	Puppet regimes, interference with Pan-Islamic state	Resource Encroachment	Defensive attack, vengeance (deterrence), avoidance, fear
Cultural Encroachment	Pork, and non-halal food, alcohol and drugs, obsession with wealth, sexual/marital preferences and choices, immodest dress, religiosity/immorality	Internal instability (Norms, rituals, taboos, group markers)	Fear, disgust, avoidance, emphasis on group boundaries, punish norm violators (possible genocide)
Segregation, alienation, ghettoisation, avoidance	Different sexual practices, dietary and hygiene practices	Disease, norms/customs	Fear, disgust, avoidance. Possible genocide of contagious outgroup
Discrimination/relative deprivation, inequality	Racism, Islamophobia, higher prison population, counter-terrorism policies (Stop-and-Search), lower socio-economic status/attainment	Group Size	Fear, avoid. Possibly show strength with defensive aggression

Perceiving cues and conditions of potential threat to the ingroup, and consequential parochial altruistic responses would have improved our ancestral fitness by promoting ingroup protection in response to potential outgroup threats (Gat 2009; Lehmann & Feldman 2008; Choi & Bowles 2007). Insight into these conditions and cues, and the likely attitudinal and behavioural responses to them shed light on terrorist grievances and behavioural responses including violence, and also radicalisation more generally. The overall argument is that terrorist grievances represent features of intergroup relations that would have been threatening to our ancestors, whom would have responded in certain ways that benefited the fitness of the group of individuals. Given that parochial altruism is present in us all today, we can expect that such cues may provoke similar reactions, particularly in those with sensitivity to it, and those who may have been indoctrinated towards certain perceptions and responses. This is not to suggest that terrorism improves the fitness of the constituents that terrorist groups claim to be fighting on behalf of (although it seems that they believe it does). Rather it is an example of mismatch, where evolved mechanisms that helped our ancestors survive and prosper are triggered and influence behaviour even though there is no fitness cost of the trigger, or fitness benefit of the responding action (e.g. van Vugt et al. 2008).

Threats to the Muslim Group

The most prominent grievances and catalysts to violence for extremist Islamist terrorists are Western foreign policy, puppet regimes, failing states, and wars and invasions (Bergen & Footer 2008; O'Duffy 2008; Crick 2006; Brighton 2007; CONTEST 2011; Bakker 2006; Sageman 2008; Silke 2008; Wiktorowicz 2005; Freytag et al. 2011; Sedgwick 2004). The complaint that the West is encroaching on Muslim lands both territorially – claiming valuable resources such as oil – and culturally, through spreading democracy is used to justify violence (Bakker 2006; Harrow 2010; Reinares 2010; Atran 2004; Sageman 2008; Juergensmeyer 2000a). All of these grievances can be interpreted in terms of conditions that trigger parochial altruism (Table 17). Resource encroachment, threat of absorption, and aggression are

the most evolutionary relevant cues. Resource encroachment and conflict are the most likely conditions to prompt defensive aggression and vengeance in response (Gat 2009; Neuberg et al. 2011; Alexander 1987; Durham 1976). This can be related to group size (or strength) (Durham 1976). One of the core empirical findings of this project has been that minority group members show stronger parochial altruistic attitudes, and coalitional parochial altruistic behaviours than majority group members, indicating a sensitivity to intergroup relations, even in minimalist (experimental) conditions.

The parochial altruism mechanism explains why, from an evolutionary perspective, perceptions of threat to the Muslim group may prompt defensive aggression and revenge. These grievances are all events that would have inhibited, if not destroyed the fitness capacities of ancestral groups in a similar position. Responding in terms of defensive aggression and vengeance may have been costly to these groups (and certain individuals within them, i.e. warrior males) but would have offset the costs of not defending or avenging in most cases (Gat 2009; van Vugt & Park 2009). The experiment conducted here indicated that perceptions of contexts of threat were related to more extreme parochial altruistic behaviour (i.e. self-sacrifice for outgroup hostility), supporting the notion that perceptions of danger trigger aggression. Although threats to Muslims, and terrorism as defensive aggression and vengeance do not have consequences for fitness today, the mechanism of parochial altruism still influences the way in which individuals – especially those who identify with the Muslim Umma – perceive conditions that indicate some kind of harm to the ingroup at the behest of a more powerful outgroup. In such conditions, specific responses are expected (flight where possible or preferable, defensive aggression, and/or revenge, to promote the image of strength and deterrence), but again, these responses will not translate into a fitness advantage today.

Terrorism, therefore, is a parochially altruistic behavioural response to threats to the Muslim Umma that are perceived to be existential (whether due to a threat of annihilation, group size, resource encroachment, cultural encroachment, disease, etc.).

The conditions and cues that trigger these perceptions of threat are not representative of the threats faced by ancestral groups, and nor are parochial altruistic behavioural responses today beneficial to the fitness of modern human groups today. Terrorism is therefore an example of mismatch.

Radicalisation

The parochial altruism mechanism and the process of social identity offer insight into the radicalisation process. Minority group members indicate greater sensitivity to conditions triggering parochial altruism, although sensitivity is variable across *all* individuals irrespective of group. Based on the human predisposition towards groupishness, and the propensity towards parochial altruism (and seeking positive social identity), terrorism and radicalisation are considered to be *inter*group, rather than group processes (e.g. Sageman 2004). Social identity processes shed light on the way in which individuals deal with negative and torn identities and how these processes may overlap with features of radicalisation. Social identity provides insight into identification with the Muslim Umma. Identification with the Muslim Umma enables perceptions of threat to the ingroup to encompass a greater scope of events (including wars and invasions abroad). Perceptions of threatening outgroups are associated with more aggressive parochial altruism. Increasing involvement in terrorism and threats to self may be perceived synonymously as threats to the ingroup, which further justifies the use of violence. Motivations for involvement in terrorist groups are related to evolved tendencies for status seeking in males.

Risk Factors and the Complicit Community

Risk factors associated with radicalisation include some sort of emotional vulnerability, experiences of alienation, isolation, feelings of anger, and a desire for vengeance (Horgan 2008). Discrimination plays a particularly important role in

radicalisation especially where the discrimination is directed at minority groups (Piazza 2011). Torn identities also play an important role (Sageman 2008). The results of the current project indicate that parochial altruistic attitudes and behaviours are not only associated with higher levels of personal vulnerability, but also minority group membership. Feelings of vulnerability enhance perceptions of threat and prejudice (e.g. Schaller, Park, et al. 2003). And smaller group sizes would have been vulnerable to a number of threats from outgroups in our evolutionary development meaning that perceptions (and responses) that helped our ancestors survive and prosper are present in us today, even if they do not bestow any fitness advantage (Gat 2006). Discrimination towards ones minority group membership, and inequality towards that minority group, in conjunction with emotional vulnerability may be considered risk factors associated with terrorism *and* parochial altruism. The proposition made by this thesis about parochial altruism (and social identity) underlying – or at least, associated with – the process of radicalisation to some degree, may be somewhat supported on this basis.

Terrorism and radicalisation does not occur in isolation but is rather supported by, at least passively, a complicit community (Richardson 2006). This complicit community provides recruits, an audience, funding, logistic support, and protection to terrorist groups (Silke 2008). It may provide indirect support by *not* condemning the action (of terrorism) or the groups perpetrating it. Additional passive support my come from *not* assisting police and security services in their counter-terrorism efforts. Given that these communities experience some discrimination and inequality (e.g. Muslims in the UK), from counter-terrorism policies, it is perhaps not surprising that we see this kind of passive support (Mirza et al. 2007). From the perspective of this project, it is groupishness and ingroup bias – the natural disposition towards parochial altruism – that explains this complicit-ness. This, we would expect to see in minority groups, particularly where there are perceptions of threat to the ingroup (which may be at a foreign policy level, but may also include counter-terrorism policies that discriminate against Muslims).

What is also important to recognise however, is that parochial altruism is often in response to parochial altruism from other groups. That is, the war on terror, the war in Afghanistan, the invasions of Iraq, harsh counter-terrorism policies etc. can all be considered parochial altruistic acts that benefit the West. Radicalisation can occur at community-level, and beyond (i.e. support for war) (McCauley & Moskalenko 2011; Reicher et al. 2008). *All* individuals and *all* groups will be sensitive to parochial altruism to some degree and it is proposed here that terrorism and radicalisation are *inter*group processes.

Inequality and Discrimination

Discrimination and inequality are two prominent features of radicalisation (and terrorist grievances) (Bakker 2006; Sageman 2008; Borum 2010). Explanations of terrorism and radicalisation in this vein tend to include the relative deprivation theory, and frustration aggression hypotheses. The relative deprivation theory suggests that socio-economic disparity, or perceptions of disparity are a cause of terrorism, but this is somewhat contested as more of an associated factor, than causal (Krueger & Maleckova 2009; Gurr 1970). Globalisation and modernisation may be important in highlighting differences between the haves and have not's (e.g. Moghaddam 2008). But many experience/perceive deprivation and few become terrorists.

This thesis proposes that relative deprivation is an example of imbalanced status quo and threatened capacity for prosperity (or threatened resources) relative to a better off group. Terrorism occurs to redress that imbalance, by facilitating social change through reducing the status of the outgroup. On this basis, terrorists seek to enhance the status/power position of the Muslim group relative to the Western outgroup (or other outgroups). Ayman al-Zawahiri said: "And he who takes a look at the position of these brothers can perceive that there is no comparison between the power of nineteen men and the power of America, and there is no proportion between the strength of nineteen men and the losses that were inflicted on America."

(Debunk911myths 2008). Here, he seems to be asserting that 9/11 represented a victory because it reduced the status of the US. Cues and conditions pointing to inequality and ingroup deprivation relative to an outgroup indicate a lack of power, which positions this group as weaker and subject to threat from the outgroup (which is discussed further later in the chapter).

The frustration-aggression hypothesis explains violence as the response to frustration and tends to be considered in line with relative deprivation theory (Gurr 1970; Dollard et al. 1939; Friedland 1992). This type of approach explains terrorism as a last resort action. Frustration (due to inequality for example) builds up and is released through violence. There are a number of limitations with this approach to explain terrorism, including the fact that many individuals experience frustrating conditions but do not become terrorists. This project proposes that terrorism is *not* necessarily a last resort strategy, but may be an act that is specifically driven by certain perceived cues of intergroup threat. For more costly acts of violence, perceptions of resource encroachment and threat of extinction may be important. Sensitivity to these cues and individual variation may account for why only a few individuals in any given society go on to become terrorists.

Weakness of the Muslim Group

The smaller group size, and comparative weakness of the Muslim Umma relative to the Western outgroup is not just a matter for Muslim countries, but is also reflected in the Muslim diaspora, in the UK at least (Muslims in the USA tend to be less disadvantaged, Silber & Bhatt 2007). This group experiences discrimination and relative deprivation as a minority group which is an important factor influencing involvement in terrorism (Piazza 2011; McConnell & Leibold 2001; Loza 2007; Githens-Mazer 2008; Richardson 2006; Sageman 2004; Sageman 2008; Horgan 2008; Silke 2008; Borum 2010; Silber & Bhatt 2007; Bakker 2006). These grievances perhaps reflect low status and subordination to the majority group in the UK, which in

evolutionary terms would suggest a threat to fitness of the Muslim group. The status and power of the Muslim group is also limited in the UK, at least at a group level. In evolutionary terms, small groups would have been at threat from larger, expanding groups (Alexander 1987; Neuberg et al. 2011). Indeed, the empirical findings of this project indicate that minority group members have a natural proclivity towards parochial altruistic attitudes in intergroup situations, even when they are context free (such as a minimalist experiment).

In addition, the torn identities that are experienced by many Western Muslims have implications for how perceptions of cultural encroachments are dealt with. Cultural norms and customs are useful to not only mark boundaries between groups (thereby enabling easy categorisation into 'us' and 'not us', but also have foundations in disease avoidance (amongst other things, e.g. Girard 2009; Boyd & Richerson 2002; Marlowe & Berbesque 2008; Letendre et al. 2010; Bowles 2012). The fear of cultural encroachment and the implications it has for defining group boundaries (and additional threats to the ingroup, such as disease) are likely to lead to responses of avoidance of the outgroup and positive distinction from it. That is, we should expect to see stronger adherence to norms and customs that distinguish the ingroup from the outgroup and increased punishment of norm violators (Irons 2001; Bernhard et al. 2006). This is perhaps evident in the increase of adherence to visual group markers such as the veil, and Muslim robes, but also in small groups such as the Muslim Patrol who intimidate and coerce Muslims and non-Muslims alike for any kind of norm violation (Soni 2013; Paton 2013; CNN 2013).

Terrorism research suggests that adherence to group markers occurs upon active learning about religion, and during the identification stage in conjunction with the formation of a new common identity (Federal Bureau Of Investigation, 2006; Horgan, 2008; Moghaddam, 2005b; Silber & Bhatt, 2007). Such an explanation not only ignores the increasing adherence to group markers and punishment of norm violation in the Muslim group generally, but also misses the importance of perceptions of

cultural encroachment as a detrimental effect on group boundaries, which is all the more relevant considering the importance of torn identity in radicalisation.

Torn Identity

Discrimination alienates individuals (and groups) from wider society (Piazza 2011). Those vulnerable to radicalisation have often experienced racism and other forms of discrimination personally, or vicariously (Horgan 2008). But the exclusion does not come solely from wider society, but from within Muslim communities also. Second and third generation Muslims in the UK (as well as new immigrants) are particularly vulnerable to radicalisation. These individuals are sometimes torn between the culture of their family, and the culture of the country they were raised in and that they share with peers (Sageman 2008; Richardson 2006; Moghaddam 2005b; Silber & Bhatt 2007). Part of the problem may indeed be a *lack* of religiosity, and a *lack* of identification with the Muslim community, particularly tribal elders and clerics (Richardson 2006; Sageman 2008). Isolation and alienation, from outside and within the community, facilitates the seeking-out of like-minded others, possibly by frequenting mosques, and active social learning about religion (Sageman 2008; Bakker 2006).

Sageman explains the trajectory of young Westernised Muslims into criminal activities including involvement in gangs as a response to exclusion from society, and drifting towards religion as an attempt to escape a sense of hopelessness (Sageman 2008). Although these individuals may retract from wider society because they do not believe there are equal opportunities for them, they are not fully included into the Muslim community either which leads to torn identity. This thesis suggests that it is the identification process, and strategies for social comparison that may see some individuals join gangs, which may in turn guide them towards religion as they seek out better ways to enhance their social identity through positive distinctiveness (Chapter 3). Part of that path then includes increasing observance of rituals, and norms

associated with that group membership. As notable scholars say, this adherence acts as important information, signalling the individuals devotion and commitment to the group (Sosis 2004; Sosis et al. 2008; Atran 2003; Atran & Norenzayan 2005). Rituals are also important for fusion within a group to occur, which adds another layer to this element of radicalisation (Whitehouse 2013).

Thus, active social learning about religion (and meeting like-minded others) may occur as a *by-product* of social identity processes. Individuals like Khan, who in the pre-radicalisation phase, seemingly psychologically distanced himself from the Muslim group by rejecting the Islam of his elders, and going by the name 'Sid', may have begun looking to religion as a way of promoting differentiation with other groups. Whereas Sageman (2008) speaks of involvement in gangs as a response to exclusion from society, it is suggested here that involvement in gangs was *one* way to attempt to enhance a negative social identity evident in the pre-radicalisation phase by psychological distance from the Muslim group, or conversion to it (in the case of converts). In this respect, drifting towards religion (once already in a gang that was involved in racist inter-gang conflicts, or diverted comparison) was another strategy to achieve positive social identity via differentiation.

Indeed, an important finding in this study was that the less religious, and males, were more likely to engage in coalitional outgroup aggression than the religious, and female. Involvement in gangs in radicalisation perhaps indicates this proclivity towards groupishness, and coalitional aggression, even prior to engagement with religion. In the contexts in which Khan was a Mullah Boy gang member, drugs and prostitution threatened the community. The Mullah Boys became more religious in part, in response to the more negative and corrupting influence of the West, thereby differentiating themselves from it (prior to this, they considered themselves Muslim but only adhered to eating halal, otherwise they behaved in a decidedly un-Islamic manner, drinking alcohol, doing drugs, visiting brothels, etc.).

Learning about Islam offered them yet another way to achieve positive social identity, through alternative attribution. That is, as Muslims, religion and morality were positive social identity markers, relative to the non-Muslim UK that is largely secular. Increasing religiosity (which may be influenced and guided by extremist literature, propaganda, and social learning) may then open up an individual to the problems affecting Muslims worldwide. That is, through the process of social identity, they gradually come to identify with Muslims, and this identification directs them towards social identity processes in which the Muslim group is salient. It is not a new identity, but a gradually developed saliency towards the Muslim ingroup that has evolved through this process.[48]

Small Groups and Socialisation

Yet, it is argued by some that a 'new identity' is formed once a small group of individuals has developed in response to increasing alienation and isolation, and that this small group of like minds relieves this isolation (e.g. Sageman 2008; Moghaddam 2005b). Social learning, indoctrination, socialisation and risky shift may lead to individuals within the group altering their attitudes towards agreement with the rest of the group (e.g. conformity, Asch 1956), and the group itself may become more extreme as members of the group shift their opinions to be in line with more extreme members (McCauley & Moskalenko 2011). McCauley and Moskalenko (2011) suggest the propensity for risky shift may be due to social comparison and the way in which more extreme individuals may be seen by other group members as more devoted to that group. These individuals receive higher status and therefore have more influence over the rest of the group.

[48] The problem perhaps with this line of reasoning is that it imposes a structure and some kind of sequence onto the radicalisation process, and it has already been noted that radicalisation occurs differently for different people (e.g. Horgan 2008). Nevertheless, there are features of radicalisation which might be explained by invoking the social identity process.

There is also an element of positive differentiation here given that such positions are likely to distinguish the ingroup further from similar others thereby enhancing social identity needs (Tajfel et al. 1971). In this respect, there is considerable overlap between the social identity process and group processes important in socialisation to terrorism. This is not surprising given that social identity is a group process, and one that is invoked by terrorism researchers to explain features of radicalisation (e.g. Taylor 2010; Rogers et al. 2007; Raffie 2013). The main difference is that this thesis proposes that the process of social identity is important *prior* to radicalisation and throughout, and not just once an extremist group has formed as others seem to suggest (e.g. Travis 2008; Moghaddam 2005a; Silke 2008; Sageman 2008). That is, during the pre-radicalisation phase, when individuals are grappling with torn identities, the process of social identity is being played out in important and relevant ways for *later* radicalisation, including exploring alternative group memberships, and different types of values, and different ways of being group members, together with the management of multiple group memberships.

Identification with the Muslim Umma

Identification with the Muslim Umma is a gradual process seeking positive social identity culminating in a dominance identification strategy. Grappling with torn identity influences some towards Islam via social bonds and ties (and/or via the process of social identity). Terrorism scholars recognise the importance of identification with the Muslim Umma: "Within the context of jihadi terrorism, the perception of a strong shared identity and link with the wider Muslim world – the *Umma* – has strong consequences when the individual perceives that some Muslim communities are being treated brutally or unfairly" (Silke 2008, p.114). Silke is noting that identification with the Umma is important for the perception of inequality, and/or injustice to members of that community, yet does not attempt to describe or explain how or why that identification occurs. Chapter 3 proposed that the overly exclusive intersect

management style employed by tribal elders and clerics (where the primary identity is an overlap between the country of origin, religion, and possibly tribe), and exclusion from wider society (possibly on ethnic, religion, country of origin grounds) sheds light on torn identity. It also proposed that by adopting a dominance strategy whereby being Muslim is *the* primary identity, identification with the Muslim Umma could occur.

Although compartmentalising multiple group memberships (so that relevant identities are triggered according to context) may be important in the radicalisation process, it is suggested that it is the dominance strategy that most closely resembles the Pan-Islamist notion of the Muslim Umma. This has implications not just for who is considered a member of the (constituent) ingroup, which is considered more homogenous than it really is given the focus on Islam. Importantly, all those who are not Muslim, are members of the outgroup. The extent to which ideology, or the natural process of social identity in response to torn identity, is the ultimate cause of this cannot be speculated. Yet, it is interesting that the dominance strategy should mirror so effectively, this crucial feature of Pan-Islamist ideology. With *all* Muslims fellow group members, perceiving grievances and threats to that group – irrespective of country, language, culture, race, etc. – becomes more likely. The process of social identity is likely to be pursued with this dominant group membership given prominence over all others.

Other scholars however, have suggested that identification hinges on positive feelings such as "when the other [ingroup members] is safe, prospering, or growing, but we feel bad when the other is in danger, failing, or diminished" (McCauley & Moskalenko 2011, p.28). For these authors, the synergy between *personal* and *group* grievances enables strong emotional commitment to positive identification with the victim group. Thus, negative identification towards an outgroup (e.g. we feel good when the outgroup is failing) explains the impetus for violence. However, this commitment is not considered a cause of radicalisation, but an outcome of it. These two perspectives are not dissimilar. Earlier attempts to enhance a negative Muslim social identity may have occurred in part due to negative group-membership-based personal experiences

or grievances. Identification with the Muslim Umma (as a by-product of social identity processes, as a result of ideological indoctrination or socialisation, and/or as a result of a dominance identification strategy) explains the tie between the individual and the group grievances. However, this thesis does not propose that identification with the Muslim Umma explains the impetus for violence, nor does it necessarily agree that commitment to the ingroup is an outcome of radicalisation, although enhanced commitment and a particular perspective of the ingroup (and outgroups) might be (i.e. innocent, oppressed victims at existential threat from an evil oppressive outgroup).

Radicalisation gradually occurs without the efforts of external recruiters (Bakker 2006; Sageman 2004). However, individuals in a small group or as part of a larger organisation may be motivated towards action because of obedience or dissonance (McCauley & Moskalenko 2011; Milgram 1963). Involvement and identification with a group to the degree that the collective identity encompasses the personal identity, is proposed to justify violence *and* absolve personal responsibility for it (Post et al. 2003). This collective identity, absorption of ideology, socialisation and social learning, works to increase the isolation of the group, bolstering that collective identity further (Sageman 2008; McCauley & Moskalenko 2011). Such notions somewhat contradict other findings that terrorists typically have a strong sense of personal responsibility for their ingroups (e.g. Horgan, 2008).

The theory of identity fusion suggests that what makes an individual more likely to enact extreme prosocial behaviour (of which terrorism is *one* form), are personal traits including a strong sense of moral agency, *personal responsibility*, and motivation to be involved in justice-seeking and, importantly, fusion with the group (Swann, Gómez, Dovidio, et al. 2010). Rather than the group identity absorbing the individual identity, a porous interaction between features of the group and the traits and experiences of the individual means that the individual is *not* absolved of responsibility for violence but is manifestly part of it. Fusion with the small group, which has bonded tightly over time, likely engaging in ritualistic activities (chanting, prayer) and possibly bonding over traumatic experiences (racism, Islamophobia, discriminatory counter-terrorism

policies) may be local (bound to the small group), and also extended (by way of group-level experiences and grievances). Fusion is important because group and personal events are experienced "synergicistally", which has important implications for perceptions of the suffering of Muslim Umma (Swann et al. 2009).

Injustice as a Catalyst for Violent Vengeance

Acts that are perceived to be unjust – especially if they are violent – provoke outrage and a desire for vengeance, which is an important feature of radicalisation and involvement in terrorism (Silke 2003). Violent responses are considered moral, urgent, and just (Moghaddam 2005b; Crenshaw 1981). Disillusion and disaffection with alternative (non-violent) strategies is critical to this according to terrorism scholars (Crenshaw 1981; McCauley & Moskalenko 2011; Taylor & Horgan 2006). Perceived injustices and catalyst events such as the wars in Iraq and Afghanistan trigger outrage and the desire for revenge and retribution (Horgan 2008; Sageman 2008; Silber & Bhatt 2007; Khan 2013). The decision to become involved need not be violent initially, but may not be legal (Horgan 2008). Nevertheless, this decision is likely to put this small group in a position of interest to police and security services, particularly if it associated with known terrorists, or those under surveillance, and/or if they travel abroad to train and fight, further enhancing the interdependence of the group (Hudson 1999; Silke 2008). This aspect of radicalisation tends to occur at a much faster rate, although there are no suggestions as to why this might be. Increasing involvement may lead to cognitive dissonance and self-justification to validate past behaviour (McCauley & Moskalenko 2011). This likely includes dehumanisation and demonization of the outgroup, even though this outgroup remains ambiguous and ill-defined (Sageman 2008; Bakker 2006; Silber & Bhatt 2007).

Clearly defining ingroup from outgroup may be a function of a dominance strategy. Clearly defining outgroups as real threats to the ingroup (be they evil, barbaric or otherwise) may be a function of parochial altruism (discussed earlier). But, this thesis

argues, the decision to become involved in terrorism, particularly illegal and violent action, is rooted in the concept of identity fusion. The process of radicalisation (and social identity) facilitates identification with the Muslim Umma and perceptions of threat to the ingroup (which is enabled by parochial altruism mechanism). Whilst McCauley and Moskalenko (2011) suggest that a slippery slope of self-justification may be involved in increasing involvement (and violence), it is suggested here that experiences of threat, whether by the individual, or the group, are likely to result in extreme pro-group behaviour for certain individuals, and tightly bonded groups (Swann, Gómez, Huici, et al. 2010). It may be that *fusion* to the ingroup (locally, and extended) drives further involvement. Perhaps more importantly, there may be a feedback loop between the extreme pro-social behaviours performed by the fused individual/group (which are costly to those individuals), and perceptions of threat.

This is perhaps best illustrated by the foreign fighter phenomenon and the apparent link between this act and subsequent involvement in terrorism in the West (e.g. Hegghammer 2010). Those who engage in jihad (or training) abroad, or attempt to (e.g. Michael Adebolajo) face serious risk to their personal safety. Fusion to a group prior to these experiences may be associated with perceptions and experiences that those personal risks are experienced by the wider ingroup also. Thereby enhancing the perception of an existential, urgent threat to the Muslim Umma.[49] This explanation, whilst not discounting the slippery slope account, implies that perceptions (and experiences) of potential existential threat to a (fused) individual (on the basis of their decision to engage in extreme pre-group behaviour) may be perceived (by virtue of his fusion with the ingroup) as potential existential threat to the Muslim Umma.

[49] This argument might be stretched to include those who plan on perpetrating terrorism, or believe themselves to be targeted by police and security services. It might even include traumatic experiences arising from harsh counter-terrorism policies. More research needs to be done, but identity fusion seems to be a promising avenue to understand this latter, and fast developing aspect of radicalisation.

Threatened Ingroups and Threatening Outgroups

The perception of threat to the ingroup, particularly via threatening outgroups was found to be associated with stronger parochial altruistic attitudes, and extreme parochial altruistic behaviour in the experiment conducted here. That is, perceptions of threatening outgroups were related to higher levels of extreme outgroup hostility (where participants willingly sacrificed their own resources to harm the outgroup, which ultimately advantaged the ingroup). This indicates that perception of *threat* is a very important part of self-sacrifice and aggression towards outgroups. Explanations of terrorists' proclivity to incur great costs personally to attempt to benefit the ingroup is often couched in terms of altruism and strong reciprocity (e.g. McCauley & Moskalenko 2011; Richardson 2006; Sageman 2008). These authors make the assumption that "the extreme personal cost of radicalisation to violent action is the barrier that stops many individuals who otherwise would act to punish individuals and groups perceived as oppressors" (McCauley & Moskalenko 2011, p.27).

Interestingly, parochial altruistic attitudes towards the ingroup, and behavioural ingroup bias, were *not* associated with extreme outgroup hostility, but social dominance orientation and group-centricism was. This suggests that whilst ingroup bias is an important feature of parochial altruism (and the early radicalisation process), extreme parochial altruistic responses require perceptions of threatening outgroups. This position has been proposed by others (De Dreu et al. 2011; van Vugt & Park 2009). This notion further supports the proposition that an important driving factor towards involvement in terrorism, are perceptions of threat to the Muslim Umma. Contrary to what Sageman and others suggest, it is not *just* ingroup love that causes terrorism, but outgroup threat and parochialism (Sageman 2004; Sageman 2008; Richardson 2006; Moghaddam 2005b).

Motivations for Violence

Research has shown that support and willingness to engage in vengeance is common in young males, particularly where mortality salience is triggered, and in intergroup situations in which the ingroup is harmed in some way (Cota-Mckinley et al. 2001; Pyszczynski et al. 2006; Gat 2006). Again, perceptions of threat to the ingroup influence extreme outgroup hostility. This research further suggests that indoctrination and socialisation may not even be necessary for an individual to perceive threat and justify violence where identification to the Muslim Umma is present, especially if that individual is a young male. Revenge and deterrence are indeed featured behavioural outcomes of parochial altruistic behaviour, particularly where threat to resources is involved (Gat 2009; Neuberg et al. 2011). Righting wrongs, deterring future violence, retribution, revenge, are moral arguments that feature in justifying terrorism (Richardson 2006; Sageman 2004; Silke 2008; Ginges & Atran 2011). Other motivations also include danger and excitement, a sense of self-worth, increased status, respect, and authority, being considered heroic, honourable, and a martyr for Muslims, Islam, and Allah. All are positive pull factors that reward individuals for involvement, and encourage them to maintain that path (Silke 2008; Horgan 2008; Richardson 2006; Reicher et al. 2008). Status-seeking has been found to be an important feature of involvement in terrorism, particularly on the part of young males (McCauley & Moskalenko 2011; Silke 2008; Sageman 2008).

Sageman explains this sex difference by suggesting that Western Muslim girls are motivated to stay in school and perform well enough in their education to gain employment so as to not be sent back to the country of origin to be married (Sageman 2008, p.69). His argument is that they wish to avoid marrying their cousin and therefore do not put themselves in the same position of low employment and under-education as their brothers might. Others suggest that males are motivated towards terrorism in association with the evolved tendency to seek status, possibly through risk taking to attract mates (McCauley & Moskalenko 2011). Risk-taking is therefore a strategy of sexual selection because the status of a male is enhanced, and his fitness

too is likely increased because of his increased appeal to females looking for a high status mate. These authors additionally look to testosterone, presenting research that shows that higher levels of testosterone tend to be associated with social status, and aggression.

The empirical study here indicated that males were more likely to coalitionally aggress towards the outgroup than females. This propensity was not found in parochial altruistic attitudes however, which may be due to the way that parochial altruism was operationalised in IAT. These findings may indicate male propensity towards groupishness and coalitional aggression (e.g. van Vugt 2009). However, the empirical study did not find sex differences in extreme outgroup hostility, which nevertheless supports the notion of male coalitional aggression. Ancestral males had much to gain in intergroup conflict if successful (Lehmann & Feldman 2008). The benefits of success in intergroup conflict included increased status within the group, increased access to resources, territory, more mating within the group, and access to females from the vanquished group (McDonald et al. 2012; van Vugt 2009; Navarrete et al. 2010; Wrangham & Peterson 1997). Males would have had improved fitness when successful in intergroup conflict thereby propagating this predisposition (or behaviour) through natural (and/or cultural) selection (Lehmann & Feldman 2008; van Vugt & Park 2009; García & van den Bergh 2011; Gelfand et al. 2012). This may therefore explain the male tendency towards status seeking, and coalitional intergroup conflict that is also associated with involvement in terrorism.

An additional finding for coalitional parochial altruism is the association of low confidence (interpreted as feelings of vulnerability) and low religiosity. It may be that low confidence reinforces the need for groupishness (which supports the self-esteem hypothesis) and outgroup aggression in order to enhance status. Interestingly, these findings somewhat reflect the pattern of the radicalisation process. Young males who have personal vulnerabilities, perhaps rooted in experiences of discrimination, who indicate low religiosity, seek out like-minded others forming small groups (or gangs) which then proceed to coalitionally aggress against outgroups. Self-sacrificing

parochial altruism is further associated with social dominance orientations, group-centricism, and perceptions of contexts of danger, which have been shown to be facilitated, and influenced by both the social identity process (identification, and identity fusion), and features of radicalisation (including ideology, socialisation, indoctrination).

Although the empirical aspect of this study found sex differences in kinship scenarios – females showed stronger parochial altruistic attitudes than males, supporting other research (Fischer-Shofty et al. 2012) – parochial altruistic attitudes did not differ according to sex as was expected in intergroup scenarios. This may be due to limitations with the experimental design, although it may also suggest that there is something intermediate that drives male parochial altruistic behaviour that the implicit aspect of this study was not able to tap into. Nevertheless, the findings support the notion that a base level parochial altruism, and ingroup bias especially is found in all humans. Despite the lack of sex difference in parochial altruistic attitudes, males did behave in a coalitional parochially altruistic way, more so than females.

Limitations and Caveats

It is important to reflect on the limitations of the research. Each chapter has contained a section considering limitations and caveats. Given that, the main limitations that are addressed here refer to methodological and statistical limitations, and caveats with regards to how some of the core assumptions made here have influenced the findings. These are addressed in turn.

Methodological Shortcomings

A major limitation with the methodology is the fact that the pre-IAT prime that was designed to trigger perceptions of intergroup relations (either conflict or cooperation,

or no and neutral conditions) did not work as expected. The prediction had been that the control primes would be associated with similar IAT scores, but this often was not the case. Nor was it the case that the intergroup conflict context was associated with stronger parochial altruistic attitudes than the control and cooperation prime. Indeed, often it was the cooperation prime that was associated with stronger parochial altruistic attitudes. It is thought that the prime failed to prompt the ambiguous but salient social identity (the Red's) that it was designed for. This may be because participants did not accept or care that their answers to the survey questions put them in the 'Red group', and/or that the primes themselves did not resonate with them. This might be in part due to the images that were included with the prime, which were possibly too white, and too male. The cooperation prime was not associated with the direction of parochial altruistic attitudes which suggests that although there were problems with the design, there may be some relationship there that was not expected. It may be that parochial altruism triggered by intergroup cooperation is a way to prevent exploitation of the ingroup by an outgroup. Alternatively, this result may have been facilitated by the cooperation prime image, which, although containing two older white gentlemen in suits, did contain the Red versus Blue colour scheme, whereas the conflict prime did not.

IAT measures *relative* strengths of associations between two categories. In this case, the relative strength of association was between parochial altruism and intergroup contexts (kinship, groups, religion). There is an interrelationship between parochialism and altruism and this relationship is what has been interpreted as the parochial altruistic attitude. Some critics of IAT reject the notion that it measures automatic or implicit associations or attitudes (Fazio & Olson 2003). In addition, the strength of the IAT effect is only as good as the categories and items used to reflect he concept, which means that different terms may have produced different results (Rothermund et al. 2005). This may be relevant to the unexpected *lack* of sex differences found in the intergroup IAT where males were predicted to have stronger parochial altruistic attitudes than females on the basis of the male warrior hypothesis (McDonald et al. 2012). In this case, parochial altruism was operationalised in terms of its broadest definition so that it included features like avoidance, and fear, rather

than only emphasising aggression and hostility. It is proposed that future research could investigate whether parochial altruistic attitudes vary according to the way in which parochial altruism is operationalised. It is predicted that males should indicate stronger parochial altruistic attitudes in intergroup contexts where parochial altruism is operationalised in terms of aggression, anger, threat, and hostility. Sex differences were present in the behavioural paradigm, with males being more behaviourally parochially altruistic than females. If males also have stronger parochial altruistic attitudes, then perhaps they are better accessed with a more 'male-oriented' conceptualisation of parochial altruism: one that focuses on aggression.

An additional potential limitation is the way in which certain variables were interpreted. For instance, allocations of lottery tickets were considered in terms of resources. This means that the *chance* of winning a prize was interpreted as an *actual* resource that was then used, in some cases, to aggress against the outgroup. It is possible that if given *actual* resources, rather than a chance at winning actual resources, the results may have been different. Whether they would have been more or less aggressive to the outgroup is not known and might offer an interesting avenue for further research. Related to this is the interpretation that using group resources to aggress against the outgroup is a form of coalitional parochial altruism rather than an example of free riding. Nevertheless, the core variables associated with coalitional outgroup aggression in the experiment (sex, vulnerability, and minority group status) do have theoretical bases in evolutionary psychology which supports the original interpretation of this behavioural choice. Yet, the free-rider interpretation is also feasible.

Related to this is the operationalization of parochial altruism in the behaviour study. Whilst the attitude measure was designed to tap into the widest scope of the parochial altruism concept, the behavioural study was designed to measure ingroup bias, coalitional outgroup hostility, and 'extreme' or self-sacrificing outgroup hostility. It does not include the capacity for individuals to indicate fear, disgust, avoidance, thus its operationalization of parochial altruism is limited to bias and hostility. A

behavioural study that would enable participants to choose to behave in the broadest sense of parochial altruism would have been an interesting feature to include in this methodology, but would ultimately have been too complex.

Additionally, it is possible that the design of the behavioural study may influence participant's behavioural decisions. In order to encourage participants with personal investment in the game (to motivate them to play seriously, and to enable them to incur personal costs), the self-allocation scheme was included. This was capped at four of ten tickets to ensure that self-interest did not prevent other results from being found. This, therefore may have imposed on participants, behavioural choices they may not have otherwise made given the choice to allocate all tickets to themselves if they wished. Capping self-allocation in favour of allocations to the group(s) was necessary to prevent the game being all about self-interest, and therefore triggering an intergroup context. Another limitation of the design might be the lack of non-IAT control in the behavioural study. All individuals who participated in IAT (including the pre-IAT prime and survey questions sections) also participated in the behavioural study. Without a no-IAT control group with which to compare behavioural responses, we cannot know if participating in IAT had an effect on behavioural choices. Whilst this is justified because the purpose of this aspect of the study is to investigate whether parochial altruistic attitudes are associated with parochial altruistic behaviours, it would be an interesting addition to future research plans.

Although the sample size was relatively large (>100), it was not large enough to conduct multivariate analyses. This was also due to the large number of variables included in this somewhat complex experimental paradigm. A simpler paradigm would have enabled multivariate analyses with this sample size, and future research should take this into consideration. Some may also question the utility of the D score scoring algorithm and the lack of data corrections (e.g. logarithms) typically required when using latency data (Wennekers et al. 2009; Greenwald & Farnham 2000; Rudman et al. 2001). Nevertheless, this approach to data preparation was justified (Chapter 5). All participants were university students, who are known for their

'WEIRD' (Western, Educated, Industrialised, Rich, Democratic) properties and qualities, which may confound research (Henrich et al. 2010). Indeed, this sample was mostly white, Western, and English speaking. This is partly due to the location in which this study was conducted (a Scottish University), but also due to the fact that the advertisement for participants indicated a preference for native English speakers, so as to not cause problems with comprehension during IAT. Therefore, there are likely to be problems with generalising from the results to the wider (non-WEIRD) population. Additionally, although IAT is difficult to fake (Fiedler & Bluemke 2005), there may still have been demand characteristics, including the influence of the researchers, particularly during the behavioural game. Given that the experiment took place in a computer lab and was largely conducted on a computer, there is a lack of generalizability to real world experiences of intergroup relations and events in which attitudes are formed and influential in interactions. Thus, the experiment (like most experiments) lacks ecological validity. The paradigm has nevertheless, offered up some interesting and important (albeit preliminary) findings.

Assumptions and Definitions

Horgan warns against research that misses the reality of terrorism (Horgan 2009b). This is perhaps the most significant limitation of the project. It investigates terrorism and radicalisation but not terrorists or, extremists, and there is no connection between this research (empirically) and the contexts in which terrorism arises. This is not a field-based project and as such, the people and places that form the central focus of this project (terrorists, extremists, hotbeds of radicalisation in the UK, like Leeds, Bradford, Luton, Birmingham) are not the empirical feature.

Whilst this has been justified by emphasising similarities rather than differences in normal psychological mechanisms and processes, it is still a flaw that this research cannot definitively provide evidence for this notion of similarity. Ideally, a comparison of the empirical results of this sample (and a non-student sample) would

be made with terrorist and extremist samples to test this notion. Prisons are breeding grounds for radicalisation (Precht 2007; Institute for Safety 2008). Conducting similar (but improved experimental paradigms) with a radicalised prison sample, and individuals from the non-radicalised, non-prison population, could allow for a useful comparison. Terrorism researchers who have access to terrorists rarely conduct experiments and then compare their results to a non-terrorist sample (although Richardson may be an exception she does not detail these results, Richardson 2006). This approach may therefore be quite insightful.

Much of the way that this thesis has developed has been due to assumptions of normality and similarity in those who become terrorists, and the radicalisation process more generally. This in itself is based on the assumption that individuals' welfare and needs are ultimately rooted in salient groups, at least in intergroup contexts. The thesis does not consider the individual *or* the group as separate entities, but rather that the individual is embedded in the group. This has important implications for the way in which radicalisation and terrorism are then conceived of. Such an approach shows that the pre-radicalisation phase – often mentioned only briefly by terrorism scholars – is an important phase that hints at an individual's propensity towards groupishness and parochialism, even if they are not associated with extremism or terrorism at that stage.

This perspective sees the radicalisation process shift and expand, to include more attitudes and behaviours that are not, at first glance, necessarily associated with extremism and terrorism. There is a danger that such an approach may be taken out of context – the thesis aims to provide *insights* into specific features of terrorism and radicalisation with a social and evolutionary psychological *lens* – and used to justify the targeting and surveillance of *potential* terrorists on the basis of behaviour that indicates identification processes found in the pre-radicalisation phase. Such a concern is not unreasonable given that this is exactly how the FBI interpreted such behaviours to identify those they then label as being radicalised (Federal Bureau Of Investigation, 2006, p. 10).

This is related to another issue of this work. There is some blurring of the boundaries between who is a terrorist and who is not, and who is radicalised and who is not. By shifting radicalisation further down towards the base of the radicalisation pyramid, more people – even those who are not exposed to extremism or ideology – may be included in the process of radicalisation. This not only *contradicts* the way in which radicalisation is defined by notable scholars (such as Horgan 2009b), but may have important implications for how the research is used by government agencies that seek to identify and prevent terrorism. Rather than inhibiting radicalisation, targeting pre-radicalisers on the basis of their identification processes, may fuel radicalisation for the same reasons they seek identification; torn identity.

Torn identity is an important feature of radicalisation. The wider society does not adequately accept the individual, and individuals are often an ill fit with their communities also (for young Westernised, or convert Muslims in the UK). This aspect is not just relevant and important for individuals who may experience torn identity (and perhaps lean towards radicalisation) but also members of the wider society. Terrorism is a parochially altruistic act that harms the Western outgroup and is committed, in this case, by violently inspired extremist Islamist's. This very action (and those associated with violent extremism, including hate speeches, Muslim patrols, etc.) potentially impacts wider society also towards parochial altruism (racism, Islamophobia, formation of anti-Islam groups such as the English Defence League (English Defence League 2013)). This may in turn, thus, further facilitate the (pre-) radicalisation process.

Few terrorism literatures reviewed here explicitly acknowledge that radicalisation can and does occur beyond the scope of extremist groups and includes wider societies (Silke 2008; McCauley & Moskalenko 2008; Reicher et al. 2008). Yet this is an important feature of the radicalisation process. The emphasis of features such as ideology and differences between terrorists and non-terrorists may be due to attempts

to provide conceptual clarity and definitive boundaries between who to consider terrorist/radicalised versus who is not, which is undoubtedly useful (e.g. Richardson 2006). Nevertheless, although it may be a limitation of this thesis that it blurs the boundaries between terrorists, extremists, radicalised individuals, and everyone else, it does so with these issues in mind.

Implications of the Lethal Mind-sets Model: Harnessing Groupishness

Understanding why people support and participate in terrorism, and the psychological processes and mechanisms that influence this process are important to be able to prevent it. Central findings of this thesis may have implications for the way in which prevention strategies are considered:

- Terrorism and radicalisation are *inter*group processes. One group (i.e., Muslims) should not be the central focus for inhibiting radicalisation. The CONTEST strategy largely focuses on the Muslim community, including the injection of funding into Muslim groups (CONTEST 2009; CONTEST 2011; Thomas 2010).
- Individuals actively participate in radicalisation – it is not a passive process – and there are certain features rooted in social identity and parochial altruism that may make individuals more open to it.

The findings of this project indicate that there is individual variation in sensitivity to cues triggering parochial altruism, including the mere presence of outgroups. Minority groups appear to be particularly sensitive to parochial altruistic attitudes, and this should be borne in mind when considering how to inhibit radicalisation. However, all individuals, irrespective of group membership, show varying sensitivity to parochial altruism and the cues that trigger it. To prevent radicalisation, policy should not be

limited to the Muslim community, but consider this sensitivity in the wider society. To prevent torn identities, society needs to be more inclusive.

Future Research: Foreign (Fusion) Fighters

The main contributions of this thesis have been to propose an additional layer of explanation of terrorism and radicalisation with insights garnered from social and evolutionary psychology. The thesis looks to the *capacity* and *tendency* for individuals to categorise and adhere to group boundaries, and to favour ingroup members to the detriment of outgroup members (and possibly to themselves). It has addressed certain underdeveloped features of radicalisation, including the problem of torn identity, identification with the Muslim Umma (which sheds light on perceptions of conflict), and identification with the *suffering* of the Muslim Umma (which sheds light on perceptions that violence is just, urgent, and moral). It further proposes that the pre-radicalisation phase is useful for understanding the path of later radicalisation as an individual seeks to improve their social identity status. It indicates that groups are important *prior* to radicalisation and the way in which social identity progresses (in terms of social identity strategies) may also influences features of radicalisation, such as the drive towards active social learning about religion. Active social learning about Islam in this case may provide an individual with ammunition for positive differentiation, for example. This thesis also proposed that the cognitive mechanism of parochial altruism, present in all humans, promotes our (ancestral and current) propensity towards groupishness; the tendency to favour ingroups and disfavour outgroups. Parochial altruism is triggered by certain cues, and predicts particular behavioural outcomes associated with those cues. The concept therefore, offers an interesting lens through which to view the radicalisation process and investigate why individuals become involved in terrorism. The thesis also generated new data using a novel experimental paradigm. It indicated individual variation in parochial altruistic attitudes and behaviours that may be useful for understanding radicalisation, and also showed that a non-terrorist sample could be utilised for investigating features of

radicalisation (such as the propensity to categorise into 'us' and 'them' and to behave in an aggressive, costly-to-self way to benefit the ingroup).

The project was an ambitious one and it has several important limitations, which have been acknowledged throughout the thesis, and in this chapter. Perhaps the best way forward with regards to the type of approach pursued and proposed here is to conduct empirical research that compared (parochial altruistic) attitudes and behaviours of terrorists, extremists, complicit communities and the wider society. Conducting an experimental paradigm such as an improved version of the one conducted here, with prison populations (which are hotbeds of radicalisation), may provide very interesting comparisons.

Perhaps more pressing research is concerned with the individuals who have travelled to places like Syria, and most recently Iraq, to join ISIS. There is a serious concern, demonstrated by new government and police policy, that those who fight abroad are vulnerable to further radicalisation and pose a significant security threat to their home countries, and to those countries to which they have access (Malik 2014; Sen 2013; Norton-Taylor 2013; Cilluffo et al. 2010; Watts 2008). With one in nine Western foreign fighters returning to their respective countries and participating in domestic terrorist attacks – attacks that are often more lethal than those perpetrated by non-foreign fighters, such as the 7/7 bombings, and 9/11 – it seems that returning foreign fighters may well present a real threat outside the realm of the conflicts they choose to travel to (Cilluffo et al. 2010; Travis 2008; Hegghammer 2013). A better understanding of *why* foreign fighters may pose an increased risk to security at home is needed, which goes beyond improved operational skills. We need to understand how perceptions, and attitudes are affected by experiences of intergroup conflict. In short, what changes and why? What kinds of environments and situations are more or less likely to lead to these changes? We need to understand how an already radicalised individual, may become *more* radicalised by their experiences as foreign fighters. How can fighting abroad influence the way individuals perceive relations between Muslims and the West, taking them from *not* legitimising terrorism at home before their foreign

fighter experience, to justifying, legitimising, and potentially participating in attacks on the West? Why do they pose more of a threat than non-foreign fighters in committing acts of terrorism? Why might waging jihad in Syria or Iraq influence an individual towards seeing non-combatant (Western) non-Muslims as legitimate and justifiable targets for violence?

Witnessing, experiencing, and participating in the horrors of war as a self-styled soldier of Islam, may drive normal psychological mechanisms of parochial altruism to influence perceptions, attitudes, and behaviours of increasing hostility towards non-Muslims, both inside and outside zones of conflict. Further research might involve a project that looks to the recent theoretical insights garnered from the theory of Identity Fusion (Swann, Gómez, Dovidio, et al. 2010), in conjunction with the evolutionary concept of Parochial Altruism (Choi & Bowles 2007) to shed light on the psychology of the returning foreign fighter. Specifically, such a project would aim to investigate why foreign fighters may return home with perceptions that all Muslims are at risk on the basis of identity fusion. Personal experiences of threat may be projected onto the wider Muslim group, possibly enhancing an individual's intent to commit terrorism in the West. An experimental paradigm, not dissimilar to the one conducted here, may be altered to include traumatic/conflictual experiences (such as paintball) to investigate how trauma, and fusion might influence perceptions, parochial altruistic attitudes, and behaviours. The results of such a project may prove relevant and important at a time when hundreds of young British Muslims have travelled to warzones to perform jihad, witnessing, experiencing, and partaking in the horrors of war, perhaps to return to the UK as battle-hardened, and more violent than ever.

This project has proposed that radicalisation and terrorism are *inter*group phenomena that are influenced by normal psychological processes and mechanisms. Perceptions of conflict and terrorist grievances can be understood in terms of evolutionarily relevant threats, and parochially altruistic responses (including, but not limited to, violence and hostility). The identification process begins *pre*-radicalisation, and identification with the Muslim Umma continues throughout the process. For some

perhaps, identification will lead to internalisation and projection of Muslim suffering via fusion. The project has proposed some important features of variation in social identity and parochial altruism that may be useful for inhibiting radicalisation. Despite the preliminary nature of the work undertaken in this thesis, it offers a potentially fruitful research agenda that may be used to enhance our understanding of radicalisation and involvement in violence, even beyond terrorism.

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Appendix 1: Introductory Information: 7/7 Bombers, Lee Rigby Killers, Al Muhajiroun, Choudary and Bakri.

Mohammad Sidique Khan	Leader of July 7 bomber cell. Second generation Pakistani Muslim. Lived in deprived area of Leeds. 30 years old, married, daughter. Teaching assistant at a primary school. Educated to degree level. Highly Westernised and integrated (went by 'Sid' as a youth). Little interest or knowledge about religion as a youth. Became involved in Mullah Boys (a local gang). Involved in racial tensions, fights. Involved in events benefiting local Muslim community. Began to follow Wahhabism once in gang and at university. Fought with father about this. Followed rituals, norms, tenets closely. Involvement in terrorism began with petty fraud to help Pakistani Muhajideen, he was known in relation to other 'known' terrorists. Allegedly involved in radicalising the youth he mentored. Travelling to Pakistan and Afghanistan for training and jihad.
Shazhad Tanweer	July 7 bomber. Aged 22. Second generation Pakistani Muslim. Lived in deprived area of Leeds. Unmarried, no children, secret girlfriend. Friends with Khan. Highly Westernised, integrated. Keen sports player (cricket, football, martial arts), often playing in mixed groups at the local park. Studious and quiet. Involvement in Mullah Boys, arrested for disorderly conduct (Mullah Boys were involved in racial fights at this time). Attended camping trips with Khan. Travelled to Pakistan (and Afghanistan) with Khan.
Hasib Hussein	July 7 bomber. Aged 18. Second generation Pakistani Muslim. Lived in deprived area of Leeds. Unmarried, no children. Friends with Khan. Highly Westernised, integrated. Liked sports (cricket, football), and had been part of teams. Not particularly academic or religious. Went to Hajj and returned religiously observant (prayer, robes, beard). Involved in racial tensions at school. Support of Al Qaeda and 9/11 (martyrs). Joined Khan and Tanweer later (Khan refers to him in a covertly recorded conversation with Omar Bakri).

Germaine Lindsey	July 7 bomber. Aged 19. Jamaican decent. Lined in Buckinghamshire. Very good bright student. Christian until 14 when he converted to Islam with his mother. Took evening courses in Arabic and Islam. Got involved in gangs, got in trouble at school (possibly including weapons offences). Distributed extremist material at school. Married Samantha Lewthwaite (the Black Widow). Did not know Khan and the other bombers well. The way these men met is speculated only.
Michael Adebolajo	Lee Rigby killer. 28 years old. Nigerian decent. Married with children. Sociology student at Greenwich University. Middle class family. Bright and well integrated as a youth. Christian, converted to Islam during involvement in Nigerian gang (inter-racist). Got into trouble with the gang, knives and theft. Preoccupied by racism (appeal of Wahhabism). Involved with al Muhajiroun and Anjem Choudary. Became more religiously observant. Involvement in preaching, protesting. Would go on to attempt to join ah Shabab and wage jihad in Somalia. Was prevented by arrest and deportation.
Michael Adebowale	Lee Rigby killer. 22 years old. Nigerian decent. Married with children. Bullied at school. Football fan (Arsenal). Attended a local college (Greenwich University at one point). Involvement in gangs, which included being a victim of a stabbing, and witness to a murder. Became Muslim (like gang-mates). Sent to juvenile detention centre. Became religiously observant. Preaching and protests.
Anjem Choudary	Islamist extremist based in UK. Aged 47. British Muslim, Pakistani decent. Married with children. Early years – Westernised (known as 'Andy'), failed his first year at university due to heavy partying. Solicitor by training, but unemployed. Lives in London. Co-founder of al Muhajiroun (banned in the UK under several guises). Has been associated with many known terrorists (including Adebolajo). Involved in recruitment and training of Muslims fighting abroad. Critic of Western foreign policy, particularly Wars in Iraq and Afghanistan. Praises terrorist acts (and terrorists) and calls on Muslims to defend themselves by whatever means (including refusing to help police). Links to the Sharia Project (and Muslim Patrol).

Omar Bakri Muhammad	Aged 56. Currently lives in Lebanon. Syrian by birth. Founder of UK Hizb ut-Tahrir and co-founder of al Muhajiroun. Supports and advocates terrorism. Promotes idea of covenant of security – Muslims encouraged to fight abroad in war zones, but not in UK, although this was retracted due to wars in Iraq and Afghanistan.
Al Muhajiroun	(The Emigrants). UK based transnational Islamist organisation with links to terrorism. Aim to restore Islamic Caliphate and implement Sharia in the UK (and globally). Banned in the UK. Supported terrorist attacks (i.e. 9/11). Co-founded by Anjem Choudary and Omar Bakri Muhammad. Adebolajo (and Khan) had ties to al Muhajiroun and Choudary.
Ayman al Zawahiri	Al Qaeda leader (was second-in-command to Osama bin Laden before his death).
Osama bin Laden	Former leader of Al Qaeda, now deceased.

Appendix 2: Glossary

Acronyms	**Term**
SIT	Social Identity Theory
SCT	Self-categorisation Theory
SIDC	Social Identity Complexity
IDF	Identity Fusion Theory

Term	**Explanation of term**
Compartmentalisation	Identification strategy in which different groups become primary identities according to different contexts.
Complicit Community	Community from which terrorist groups arise, recruit, radicalised and are supported, if not passively.
CONTEST	UK's counter-terrorism policy.
Dominance	Identification strategy in which one group membership is primary above all others.
Extremism	Beliefs and views that are outside of the norm, not moderate and perhaps uncompromising.
Halal	Permissible in Islam.
Hareem	Forbidden in Islam.
Identity Fusion	Sense of oneness with a group. Porous boundaries between 'I' and 'We'.
Intersection	Identification strategy in which the primary identity occur at the intersection of two or more group memberships (i.e. British Muslim).
Islamism	A political ideology with the goal of creating a state/society that conforms to Sharia Law. Religious arguments are used to further political goals (Precht 2007)
Jihad (Lesser/Defensive)	*Jihad of the sword* - armed struggle to defend Islam and Muslims. (Silke 2008)

Jihad (Greater)	"To strive" to be a good, devout Muslim (inner struggle) (Precht 2007)
Jihadist	Those who justify, advocate, use violence to
Kuffar	Unbeliever – non-Muslim
Legitimacy	Social identity term in which social identity status is perceived as positive of negative relative to another group is appropriate and accepted (or not).
Lethal Mindset Model	Integration of social and evolutionary psychology theory and methods applied to terrorism research to explain features of radicalisation.
Merger	Identification strategy in which all group memberships are considered primary (i.e. a person in the world).
Parochial Altruism	The capacity and tendency to incur a personal cost whist performing acts which may be detrimental to an outgroup is someway, but that benefits the ingroup. May include violence and hostility, but also includes other attitudes and behaviours.
Permeability	Social identity term in which a group membership is perceived to allow members to leave the group and join a new group, or not.
Positive Differentiation	Process of social identity in which ingroups are biased towards to increase perception of status of ingroup relative to an outgroup. Outgroups may be biased against to enhance the positivity of the ingroup relative to the outgroup.
Pre-Radicalisation	Phase in which individuals seek self-identification associated with background features that may increase susceptibility to extremism (i.e. identity crisis).
Prevent	UK Counter-Terrorism policy to inhibit radicalisation.
Radicalisation	A process by which increasingly extremist beliefs are adopted which may include (but not necessarily) the support, advocation, and/or willingness to use violence to effect changes in society (Precht 2007).
Saliency	Social identity term in which a group membership is important and prominent in an individual's self-concept.
Security	Social identity term in which the status quo between relevant groups is considered liable to change or not.

Self-concept	An organising structure that contains information about the self, and influences attitudes, emotions, perceptions, and behaviours in a given situation.
Social Change	Social identity strategy in which status of an ingroup is enhanced (maintained) by actively changing the status quo of relevant groups. Includes violence and terrorism, but other non-violent/aggression action.
Social Creativity	Social identity strategy in which status of an ingroup is enhanced (maintained) via social comparison with alternative outgroups, alternative attributes, or reattribution of ingroup/outgroup characteristics.
Social Identity	Social identity is the part of self-concept that is derived from group memberships, and the emotional and value attachment to that group membership.
Social Identity Complexity	Also referred to as multiple group membership management styles
Social Identity Status	How positive or negative relative to an outgroup one perceives their ingroup as being.
Social Identity Theory/Approach	Major social psychological theory
Social Mobility	Social identity strategy in which individuals can leave or psychologically distance themselves from a negative and low salience group membership.
Terrorism	Rational and deliberate strategy of (symbolic) violence (or threat of violence) against civilians that is politically inspired, to communicate a message to a wider audience.
Terrorist	Sub state actors who engage in terrorism.
Muslim Umma	The worldwide Muslim community (all Muslims).

Appendix 3: Ethical Approval

University of Edinburgh

School of Social and Political Studies

RESEARCH AND RESEARCH ETHICS COMMITTEE

Ethical review form for level 2 and level 3 auditing

This form should be used for any research projects carried out under the auspices of SSPS that have been identified by self-audit as requiring detailed assessment - i.e. level 2 and level 3 projects (see http://www.sps.ed.ac.uk/research/ethics). This form provides general School-wide provisions. Proposers should feel free to supplement these with detailed provisions that may be stipulated by research collaborators (e.g. NHS) or professional bodies (e.g. BSA, SRA). The signed and completed form should be submitted, along with a copy of the research proposal (or a description of the research goals and methodology where this is unavailable) to the relevant person:

- For staff applying for external funding, the PI should submit the form to Research Office
- For Postdoctoral Fellows, the Mentor should submit the form to Research Office
- For PG Research (PhD or MSc by Research), the Supervisor should submit the form to Director of the Graduate School.
- For UG Dissertations, the Supervisor should submit the form to the Programme/Dissertation Convenor.

Research and Research Ethics Committee will monitor level 2 proposals to satisfy themselves that the School Ethics Policy and Procedures are being complied with. They will revert to proposers in cases where there may be particular concerns of queries. For level 3 audits, work should not proceed until Research and Research Ethics Committee (or the Director of Graduate Studies, in the case of postdoctoral research) has considered the issues raised. Level 3 applications should be submitted well in advance of a required date of approval.

Research Office may monitor the implementation of arrangements for dealing with ethical issues through the lifetime of research projects. Please ensure you keep a record of how you are addressing ethics issues in the course of your research (e.g. consent forms, disclosure processes, storage of data, discussion of ethical issues by project advisory board). Do contact the Research Administrator if any unanticipated ethics issues arise in the course of your research/after the completion of your project.

SECTION 1: PROJECT DETAILS

1.1 Title of Project: **The Social Identity Theory of Radicalisation and Intergroup Conflict.**

1.2 Principal Investigator, and any Co-Investigator(s) (Please provide details of Name, Institution, Email and Telephone)

Zoey Reeve, University of Edinburgh, Z.Reeve@sms.ac.ed.uk, 07834083427

Dominic Johnson, University of Edinburgh, dominic.johnson@ed.ac.uk, 0131 650 3937

1.4 Does the sponsor require formal prior ethical review?
~~YES~~ NO
If yes, by what date is a response required

1.5 Does the project require the approval of any other institution and/or ethics committee?
~~YES~~
NO

If YES, give details and indicate the status of the application at each other institution or ethics committee (i.e. submitted, approved, deferred, rejected).

1.6 This project has been assessed using this checklist and is judged to be
LEVEL2 (for information to Research Ethics Committee)

~~LEVEL 3 (for discussion by Research Ethics Committee)~~

1.7 If Level 3, is there a date by which a response from the committee is required?
Name…… Signature……

PLEASE ATTACH A COPY OF THE RESEARCH PROPOSAL (OR ALTERNATIVELY A DESCRIPTION OF THE RESEARCH)

Please find attached the document entitled 'Ethics proposal and additional information' which includes all relevant information for the purpose of ethical review. Below is a breakdown of the document into the most important and relevant parts, which are highlighted for your ease of reference.

Research Proposal: **Pages 2-18**

Instruction and Consent Pages: **Page 19**

Thank you and debrief: **Page 23**

IAT content: **Pages 26-34**

Prime Content: **Pages 35-38**

Fixed Questions: **Pages 39-40**

Survey Questions: **Pages 41-53**

Dictator Game: **Pages 53-54**

SECTION 2: POTENTIAL RISKS TO PARTICIPANTS

2.1 Is it likely that the research will induce any psychological stress or discomfort?

YES NO

If YES, state the nature of the risk and what measures will be taken to deal with such problems.

Some images may be mildly upsetting to participants, but less so than images commonly seen in newspapers and on television news (e.g. we do not have any images of dead or mortally wounded people). As with television news, however, participants will however, be made aware of these potentially upsetting images in advance, during briefing, and their right to withdraw at any time will be emphasised.

2.2 Does the research require any physically invasive or potentially physically harmful procedures? YES NO

If YES, give details and outline procedures to be put in place to deal with potential problems.

2.3 Does the research involve involve sensitive topics, such as participants' sexual behaviour, illegal activities, their experience of violence, their abuse or exploitation, their mental health, or their ethnic status?

YES NO

If YES, give details.

Whilst we ask about ethnic status, we do so as a control variable in an anonymous setting. It is standard practice in many political psychology experiments to ask a participant's ethnicity.

2.4 Is it likely that this research will lead to the disclosure of information about child abuse or neglect or other information that would require the researchers to breach confidentiality conditions agreed with participants?

YES NO

If YES, indicate the likelihood of such disclosure and your proposed response to this.

If there is a real risk of such disclosure triggering an obligation to make a report to Police, Social Work or other authorities, a warning to this effect must be included in the Information and Consent documents.

2.5 Is it likely that the research findings could be used in a way that would adversely affect participants or particular groups of people?

YES NO

If YES, describe the potential risk for participants of this use of the data. Outline any steps that will be taken to protect participants.

2.6 Is it likely that participation in this research could adversely affect participants in any other way? YES NO

If YES, give details and outline procedures to be put in place to deal with such problems.

2.7 Is this research expected to benefit the participants, directly or indirectly?

~~YES~~ NO

If YES, give details.

2.8 Will the true purpose of the research be concealed from the participants?

YES ~~NO~~

If YES, explain what information will be concealed and why. Will participants be debriefed at the conclusion of the study? If not, why not?

Within the experimental paradigm there may be cause for some deception (we have designed different ways of investigating the effects of priming IAT responses, one of which includes deception and is considered the more powerful and preferred design). We therefore outline this method here in case we use it.

In order to prime participants (towards thinking of themselves as members of a group) in a way that is personal and salient to them, we will ask them a series of questions. Participants will then be presented with a priming page that stipulates that their answer place them in a particular category of people (the "Reds", rather than the "Blues"). In fact, this is not the case, and the text is generic across all participants. The difficulties of investigating social identity in a population that includes many differing groups (such as an online sample) means that this deception is necessary to induce a more general level of social identity that can be experienced across many different groups. The prime itself will only marginally refer to the groups, which are entirely arbitrary. We will state that this is to reduce any bias, when in fact we are simply trying to establish a generic group identity in participants that is vague and arbitrary. To clarify: participants will have a series of demographic questions to answer before they can proceed to the rest of the test. These questions will include a set of personality questions (pages 39-40) that we will then use later in analysis, but that are, nevertheless, irrelevant to the prime participants'' will soon receive. Participants will be told that in the basis of their answers, they are in the Red group (as opposed to the Blue group). The primes will then either present a story about intergroup conflict, or intergroup cooperation between Red and Blue groups (see pages 35-38), or a neutral prime. Upon reading this text and looking at the image, participants will continue with the rest of the test. Although it is questionable as to whether it is truly necessary to debrief participants of this very slight and arbitrary deception, we have in place, appropriate text which will enlighten them (page 23).

SECTION 3: POTENTIAL RISKS TO THE RESEARCHER/S

3.1 Is the research likely to involve any psychological or physical risks to the researcher, and/or research assistants), including those recruited locally?

~~YES~~ NO If Yes, explain what measures will be taken to ensure adequate protection/support.

SECTION 4: PARTICIPANTS

4.1 How many participants is it hoped to include in the research? **As many as possible. We initially hope to have at least 100 people to enable reasonable statistical analyses.**

4.2 What criteria will be used in deciding on the inclusion and exclusion of participants in the study? **The briefing will warn that participants must be 18 years or over to partake, and also warn them (as noted above) that those who might be offended can opt out.**

4.3 Are any of the participants likely to:

be under 18 years of age? ~~YES~~ NO

be looked after children (including those living in local authority care or those living at home with a legal supervision requirement)? ~~YES~~ NO

be physically or mentally ill? ~~YES~~ NO

have a disability? ~~YES~~ NO

be members of a vulnerable or stigmatized minority? ~~YES~~ NO

be unlikely to be proficient in English? ~~YES~~ NO

be in a client or professional relationship with the researchers? ~~YES~~ NO

be in a student-teacher relationship with the researchers? YES ~~NO~~

be in any other dependent relationship with the researchers? ~~YES~~ NO

have difficulty in reading and/or comprehending any printed material distributed as part of the research process? ~~YES~~ NO

be vulnerable in other ways? ~~YES~~ NO

If YES to any of the above, explain and describe the measures that will be used to protect and/or inform participants.

The anonymity of the experiment means this should not cause any problems.

Do the researchers need to be cleared through the Disclosure (Protecting Vulnerable Groups) Scheme? See http://www.disclosurescotland.co.uk/pvg/pvg_index.html ~~YES~~ NO

Will it be difficult to ascertain whether participants are vulnerable in any of the ways listed above (e.g. where participants are recruited via the internet)? YES ~~NO~~

If YES, what measures will be used to verify the identity of participants, or protect vulnerable participants?

It is technically true that it is not possible to ascertain participants' vulnerability, but this is true of any such experiment and anonymity and debriefing measures have all been designed to minimise these issues. Also, we explicitly request that only those who are 18 years or older may take the test.

4.4 How will the sample be recruited? **Advertised on social networking sites, advertisements, word of mouth, email.**

4.5 Will participants receive any financial or other material benefits because of participation?

YES NO

If YES, what benefits will be offered to participants and why?

Participants will be offered money in return for their time and participation. This is standard procedure for experimental research using student participants.

Before completing Sections 5 & 6 please refer to the University Data Protection Policy to ensure that the relevant conditions relating to the processing of personal data under Schedule 2 and Schedule 3 are satisfied. Details are Available at:

www.recordsmanagement.ed.ac.uk

SECTION 5: CONFIDENTIALITY AND HANDLING OF DATA

5.1 Will the research require the collection of personal information from e.g. universities, schools, employers, or other agencies about individuals without their direct consent?

YES NO

If YES, state what information will be sought and why written consent for access to this information will not be obtained from the participants themselves.

5.2 Does the research involve the collection of sensitive data (including visual images of respondents) through the internet? YES NO

If YES, describe measures taken to ensure written consent for access to this information.

5.3 Will any part of the research involving participants be audio/film/video taped or recorded using any other electronic medium?

YES NO

If YES, what medium is to be used and how will the recordings be used?

5.4 Who will have access to the raw data? **Zoey Reeve and Dr. Dominic Johnson**

5.5 Will participants be identifiable, including through internet searches? YES NO

If YES, how will their consent to quotations/identifications be sought?

5.6 If not, how will anonymity be preserved?

No names or identifying data will even be collected. We have, however, been considering offering a reward to both online and laboratory samples. This is important in order to encourage and motivate patient participation in what is quite a long experimental survey. To make both the online and laboratory studies as alike as possible, we plan to offer an electronic voucher (e.g. Amazon), the winning of which is either based on participant performance (or a random draw). Since the study is completed online, in order to send the winning participants the vouchers, we would require them to leave an email address. We will only need to use the *winning* email address(es) which will be linked to a participant number, and since winning may be based on performance (e.g. did they complete all aspects of the study? Were there few mistakes? Was there any cheating?), and not on any interpretation of scores (which will happen at a later date anyway), anonymity will be maintained. As soon as we have sent the winning vouchers, all email addresses will be deleted from the system.

5.7 Will the datafiles/audio/video tapes, etc. be disposed of after the study? YES☒ ~~NO~~ ☐

5.8 How long they will be retained? **Until the project is completed and the research papers written up.**

5.9 How will they eventually be disposed of? **Files will be deleted.**

5.10 How do you intend for the results of the research to be used? **In support or not, of theory and written up in PhD thesis and journal articles.**

5.11 Will feedback of findings be given to participants? YES☒ ~~NO~~ ☐

If YES, how and when will this feedback be provided?

Participants will be invited to return to the website where findings will be reported.

SECTION 6: PARTICIPANT INFORMATION AND CONSENT

6.1 Will written consent be obtained from participants?

~~YES~~☒ NO

☐If YES, attach a copy of the information sheet and consent forms.

In some contexts of ethnographic research, written consent may not be obtainable or may not be meaningful. If written consent will NOT be obtained, please explain why circumstances make obtaining consent problematic.

This study will be an online survey. This allows an internet browser window to be presented before the test briefing participants about the study, and the potential discomfort they may experience. If they have understood and accepted this information, they will then be asked to click on a button to proceed signifying their consent to participate in the survey.

Administrative consent may be deemed sufficient:

a) for studies where the data collection involves aggregated (not individual) statistical information and where the collection of data presents:

(i) no invasion of privacy;

(ii) no potential social or emotional risks:

b) for studies which focus on the development and evaluation of curriculum materials, resources, guidelines, test items, or programme evaluations rather than the study, observation, and evaluation of individuals.

6.2 Will administrative consent be obtained in lieu of participants' consent?-YES☐ NO ☐

N/A

If YES, explain why individual consent is not considered necessary.

In the case of research in online spaces or using online technology to access participants, will consent be obtained from participants?

If YES, explain how this consent will be obtained. **Participants are briefed before agreeing to take part in the study. This briefing contains the usual consent requirements: an introduction to the study itself; the voluntary nature of participation; the confidential and anonymous nature of the study, the age that participants must be (18 or over); and a statement emphasising the right to withdraw at any time. Finally, participants click an icon after having read a statement that explicitly refers to their agreeing to participate having provided their informed consent.**

If NO, give reasons.

6.3 In the case of children under 16 participating in the research on an individual basis, will the consent or assent of parents be obtained?

YES☐ NO ☐

N/A

If YES, explain how this consent or assent will be obtained.

If NO, give reasons.

6.4 Will the consent or assent (at least verbal) of children under 16 participating in the research on an individual basis be obtained?

YES☐ NO ☐

N/A

If YES, explain how this consent or assent will be obtained.

If NO, give reasons.

6.5 In the case of participants whose first language is not English, will arrangements be made to ensure informed consent?

YES☐ NO ☐

N/A The test will only be available in English to discourage non-English speakers who are not fluent to not take part. It is also standard web practice to provide main pages of international sites in English. We also ask people if English is their native language.

If YES, what arrangements will be made?

If NO, give reasons.

6.6 In the case of participants with disabilities (e.g. learning difficulties or mental health problems), will arrangements be made to ensure informed consent?
YES☒ NO ☐

N/A

If YES, what arrangements will be made?

If NO, give reasons.

6.7 Many funders encourage making datasets available for use by other researchers. Will the data collected in this research be made available for secondary use?
~~YES~~☒ NO ☐

If YES, what arrangements are in place to ensure the consent of participants to secondary use?

SECTION 7: Unplanned/unforeseen problems

7.1 Is the research likely to encounter any significant ethical risks that cannot be planned for at this stage?

~~YES~~☒ NO

☐If YES, please indicate what arrangements are being made to address these as they arise in the course of the project.

SECTION 8: CONFLICT OF INTEREST

The University has a 'Policy on the Conflict of Interest', which states that a conflict of interest would arise in cases where an employee of the University might be "compromising research objectivity or independence in return for financial or non-financial benefit for him/herself or for a relative or friend." See:

http://www.docs.csg.ed.ac.uk/HumanResources/Policy/Conflict_of_Interest.pdf

Conflict of interest may also include cases where the source of funding raises ethical issues, either because of concerns about the moral standing or activities of the funder, or concerns about the funder's motivation for commissioning the research and the uses to which the research might be put.

The University policy states that the responsibility for avoiding a conflict of interest, in the first instance, lies with the individual, but that potential conflicts of interest should always be disclosed, normally to the line manager or Head of Department. Failure to disclose a conflict of interest or to cease involvement until the conflict has been resolved may result in disciplinary action and in serious cases could result in dismissal.

8.1 Does your research involve a conflict of interest as outlined above ~~YES~~ ☒ NO ☐

If YES, give details.

Appendix 4: Recruiting for the Experimental Paradigm

£10 IN CASH WITH THE CHANCE TO WIN UP TO £20! Participants wanted for computerised experimental research study!

We're recruiting undergraduate students (18 years and over, English as a main language, normal/corrected-to-normal vision, only) to participate in a fun research experiment taking approximately 1.5 hours. You'll be told more when you come along, but we're basically getting you to do some stuff on a computer and then play a game. There will also be a selection of yummy COOKIES for your consumption!

This is a great opportunity to earn some easy cash and meet other students. We'll be running the experiment on Tuesday 13th, Thursday 15th, and Friday 16th of September, 2011. You can choose to come along for the morning slot, at 11am-12.30pm, or the afternoon slot at 2pm-3.30pm. Late entrants can't be accepted sadly, so try and be on time!

If you don't get a chance to reserve a spot, you can try your luck and come along to the Crystal Macmillan Building, Basement Undergraduate Computer Lab.

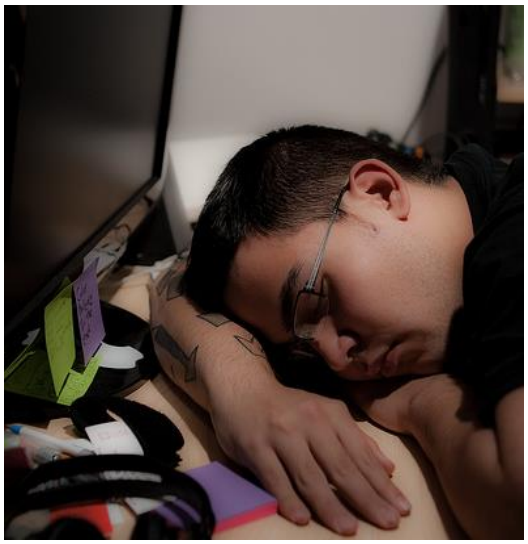
For further information, and to reserve your preferred time and date slot, please email: Z.Reeve@sms.ed.ac.uk

Thanks!

Zoey

JOB TITLE:	Experiment participant
JOB DESCRIPTION:	You will participate in a fun computerised task, and a survey.
PERSON SPECIFICATION:	We need native English speakers (e.g. English as the first or main language), who are aged 18 years or over. You must also have normal, or normal-to-corrected-to normal vision.
JOB TYPE:	One-off research participant
CLOSING DATES:	Please email the address below to confirm that you meet the specified criteria, and to register.
SALARY:	£10 for 1.5 hours (refreshments too!)
LOCATION:	Edinburgh University
SPECIFIC LOCATION:	Crystal Macmillan Building, Undergraduate Computer Laboratory, Basement.
CONTACT:	Z.Reeve@sms.ed.ac.uk

Is This You……?



Procrastinating/hungover?

Bored?

In need of an easy tenner?

Do you feel like doing something fun, useful, AND getting paid for it?

We'll give you, £10 in cash! And the chance to win a further £10!

All you need to do is take part in our computerised study. You'll be given a series of tasks to complete that involve you looking at words and pictures, and categorising them. We'll then get to you do a fun task, and complete a set of survey questions.

We'll even throw in some refreshments!

When? 12th September – 16th September, everyday at 11am-1pm, and 2pm-4pm, 2011. You can choose whether you want to take part in a morning, or afternoon session.

Where? Crystal Macmillan Building, Basement – Undergraduate Computer Laboratory.

Requirements? You should be a native English speaker (so English should be your mother tongue, or your main language). You should be18 years or over. You also need to have normal, or normal – to – corrected vision (i.e. glasses/contact lenses).

Contact: Z.Reeve@sms.ed.ac.uk Please email to confirm that you meet our requirements, and to register your place. If there isn't enough time to email – just come along and we'll try to find you a space!

Tear off slips: Easy tenner! 12th-16th September 11am-1pm, or 2pm-4pm
Z.Reeve@sms.ed.ac.uk

Appendix 5: Behavioural Game Cards

See overleaf

X001

X001

X001

X001

X001

X001

This is called the LottoKitty Game. The prize is up to £20 and you will be playing against the group in the other room.

You will see that attached to this ID card, you each have ten tickets. These are your lottery tickets. At the end of the session, a researcher will pull one of these tickets out of a box and this ticket will be the winning ticket.

These tickets are as of yet unassigned, meaning that you may decide who each ticket belongs to. You may however, only assign **up to 4** of these tickets to yourself. The remaining tickets must be assigned to your, or the other group. You may also void other group tickets in return for spending one of your own. Your options are as follows (please note, the researchers will be examining your tickets for evidence of cheating):

- You may assign **up to 4 tickets** to yourself by writing *self* on the line provided. If your *self* ticket is pulled out of the box, you will win the entire £20 prize.
- You may assign **as many tickets** as you wish to your group by writing your *group ID* on the line provided. Your group ID is either *X* or *Y*. If a ticket with your *group ID* is pulled from the box, the members of your group will each win a share of the £20 prize.
- You may assign **as many tickets** as you like to the other group by writing *their group ID* on the line provided. If your group ID is X, their group ID is Y, and vice versa. If a ticket with *their group ID* is pulled from the box, the members of the other group will each win a share of the £20 prize.
- You may choose to **void 2** of the other groups' tickets. To do this, you must put a cross through **1** of the tickets you allocate to your group. If you choose to void 2 of the other groups' tickets, the researchers will remove 2 of the other groups' tickets from the box before drawing the winning ticket. By choosing this course of action, the chances of the other group providing the winning ticket is reduced.
- You may choose to **void 5** of the other groups' tickets. To do this you must put a cross through **1** of the tickets you have allocated to yourself. If you choose to void 5 of the other groups' tickets, the researchers will remove 5 of the other groups' tickets from the box before drawing the winning ticket. By choosing this course of action, the chances of the other group providing the winning ticket is reduced.

X001

X001

X001

X001

X001

366

Appendix 6: Pre-IAT Primes

Prime text

[Prime Page Conflict]

Thank you for your answers.

Research has indicated that people can be split into two distinct groups based on the answers you gave to the last few questions on the previous page. Without wishing to bias the experiment, we will refer to these groups only as the Red's and the Blue's. Based on your answers, you belong to the Red's. Other people belong to the Blue group. In situations of difficulty research has suggested that these two distinct groups (Reds, Blues) will play a major role in the way society will develop.

Below is an extract taken from a newspaper. The real group identification is replaced by [Reds] and [Blues]. You will be tested on your recall of this article at the end of the test.

"Yesterday, several [Red's] were critically injured in clashes with the [Blue's]. The violence has been steadily escalating for several days and there is a very strong likelihood of continued conflict. The fights finally transpired after months of oppressive tension said to have been enhanced by distrust and aggression between the [Red] and [Blue] communities. One [Red] told us, 'It was a massacre. It is now only a matter of time until the [Red's] and [Blue's] go to war with each other. We are embracing our differences and this is the only way for us to succeed'."

[Prime Page Cooperation]

Thank you for your answers.

Research has indicated that people can be split into two distinct groups based on the answers you gave to the last few questions on the previous page. Without wishing to bias the experiment, we will refer to these groups only as the Red's and the Blue's. Based on your answers, you belong to the Red's. Other people belong to the Blue group. In situations of difficulty research has suggested that these two distinct groups (Reds, Blues) will play a major role in the way society will develop.

Below is an extract taken from a newspaper. The real group identification is replaced by [Reds] and [Blues]. You will be tested on your recall of this article at the end of the test.

"Yesterday, several [Red's] were critically acclaimed in collaboration with the [Blue's]. The profits have been steadily escalating for several days and there is a very strong likelihood of continued cooperation.

The successes finally transpired after months of encouraging trading said to have been enhanced by trust and friendship between the [Red] and [Blue] communities. One [Red] told us, 'It was a triumph. It is now only a matter of time until the [Red's] and [Blue's] unite fully with each other. We are embracing our similarities and this is the only way for us to succeed'."

[Prime Page Neutral]

Thank you for your answers.

Please read the story below. You may be given a memory task at the end of the test.

"Yesterday, several paintings were critically situated in accordance with the exhibitions' interior. The content of the exhibition has been steadily escalating for several days and there is a very strong likelihood of continued/further additions.

The exhibition finally transpired after months of artistic discussions said to have been enhanced by feedback and musings between the artists and exhibition managers. One artist told us, 'It was a process. It is now only a matter of time until the artwork goes on show. We are embracing our approach and this is the only way for us to succeed'."

[No Prime]

[Continue]

Prime images

Neutral Image	http://www.flickr.com/photos/juska/2168538179/sizes/m/in/photostream/
Conflict Image	http://www.flickr.com/photos/juska/2168538179/sizes/m/in/photostream/
Cooperation Image	http://www.flickr.com/photos/juska/2168538179/sizes/m/in/photostream/

Appendix 7: IAT Items

IAT word lists

Kin vs Non-Kin IAT

CONCEPT:	Kin vs Non-Kin
ATTRIBUTES:	Protection vs Danger
SUB-GROUP 1:	Kin items
SUB-GROUP 2:	Non-kin items
SUB-GROUP 3:	Protection items
SUB-GROUP 4:	Danger items

ONSCREEN CATEGORY NAMES:	Family
	Stranger
	Protection
	Danger

Family	**Stranger**
Mother	Male
Father	Female
Brother	Public
Sister	Stranger

Family	Guest
Grandparents	Newcomer
Son	Visitor
Daughter	Person

Protection	**Danger**
Protect	Harm
Support	Violent
Secure	Anger
Shield	Abuse
Innocent	Deadly
Save	Guilty
Defend	Attack
Shelter	Dangerous
Help	Destroy

Ingroup vs Outgroup IAT

CONCEPT:	Ingroup vs Outgroup
ATTRIBUTES:	Protection vs Danger
SUB-GROUP 1:	Ingroup/'Us' items
SUB-GROUP 2:	Outgroup/'Them' items
SUB-GROUP 3:	Protection items
SUB-GROUP 4:	Danger items

ONSCREEN CATEGORY NAMES:

Us

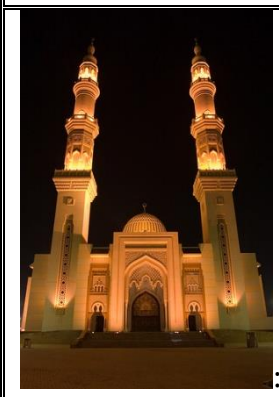
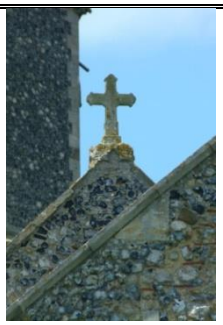
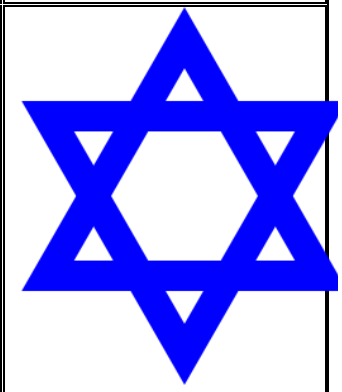
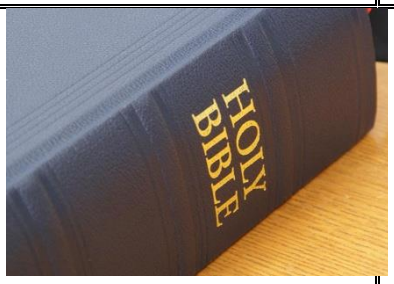
Them

Protection

Danger

Us	**Them**
Us	They
We	Them
Ours	Theirs
Ourselves	Themselves
Members	Non-members
Insiders	Outsiders

Religion IAT

MUSLIM	CHRISTIAN	JEWISH
 :		
		
		

http://www.flickr.com/photos/francoisroche/2557262041/

http://commons.wikimedia.org/wiki/File:Flag_of_Muslim_League.png

http://www.flickr.com/photos/krisdye/3207678100/

http://images.google.co.uk/imgres?imgurl=http://www.theage.com.au/ffximage/2005/11/16/cleric_narrowweb__300x437,0.jpg&imgrefurl=http://archiearchive.wordpress.com/2007/06/10/sheik-fehmi-naji-el-imam-australias-new-mufti/&usg=__oMrDgAu8Senhw6iKO8JDpdhVPUc=&h=437&w=300&sz=16&hl=en&start=35&tbnid=mvzHQpQvncJVUM:&tbnh=126&tbnw=86&prev=/images%3Fq%3Dfree%2Bmuslim%2Bcleric%2Bimages%26gbv%3D2%26ndsp%3D18%26hl%3Den%26sa%3DN%26start%3D18

http://www.freefoto.com/index.jsp

http://upload.wikimedia.org/wikipedia/commons/f/f9/Gold-colored_small_Saint_Benedict_crucifix.jpg

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http://en.wikipedia.org/wiki/File:Menorah_0307.jpg

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http://www.flickr.com/photos/don-piefcone/2455789353/

http://www.flickr.com/photos/lawriecate/3370866111/

Appendix 8: Mandatory and Survey Questions

Mandatory Questions

1. Age	Dropdown box
2. Occupation	Dropdown box
3. Sex	Radio buttons
4. Ethnicity	Dropdown box
5. County of birth	Dropdown box
6. Country grew up in	Dropdown box
7. Postcode	Freeform text
8. Is English your native language?	Radio buttons
9. Pre-Prime Question	Radio buttons

Bravery Personality Questions

To what extent to you agree or disagree with the following statements? (5 point likert scale)

I have taken frequent stands in the face of strong opposition
I don't hesitate to express an unpopular opinion
I call for action while others talk
I can face my fears
I speak up in protest when I hear someone say mean things
I am a brave person
I avoid dealing with uncomfortable emotions
I avoid dealing with awkward situations
I do not stand up for my beliefs
I don't speak my mind freely when there might be negative results

Harm Avoidance
To what extent do you agree or disagree with the following statements? (Likert scale)

I would never go hang gliding or bungee jumping.
I would never make a high risk investment.
I avoid dangerous situations.
I take risks.
I seek danger.
I am willing to try anything once.
I enjoy being reckless.
I do dangerous things.
I know no limits.
I let myself go.

Survey Questions

1. The Self-Report Altruism Scale (Rushton et al. 1981).
2. Social Dominance Orientation (Pratto et al. 1994).
3. Reciprocity
4. Fairness
5. Risk-taking
6. Nurturance
7. Confidence
8. Emotional Instability
9. Religiosity
10. Social Desirability

1. The Self-Report Altruism Scale

How often do you tend to perform the following actions? Tick the appropriate box for each action. (5 point likert never-once-more than once-often-very often).

I have helped push a stranger's car out of the snow.

I have given directions to a stranger.

I have made change for a stranger.

I have given money to a charity.

I have given money to a stranger who needed it (or asked me for it).

I have donated goods or clothes to a charity.

I have done volunteer work for a charity.

I have donated blood.

I have helped carry a stranger's belongings (books, parcels, etc.).

I have delayed an elevator and held the door open for a stranger.

I have allowed someone to go ahead of me in a lineup (at Xerox machine, in the supermarket).

I have given a stranger a lift in my car.

l have pointed out a clerk's error (in a bank, at the supermarket) in undercharging me for an item.

I have let a neighbour whom I didn't know too well borrow an item of some value to me (e.g., a dish, tools, etc.).

I have bought 'charity' Christmas cards deliberately because I knew it was a good cause.

I have helped a classmate who 1 did not know that well with a homework assignment when my knowledge was greater than his or hers.

I have before being asked, voluntarily looked after a neighbour's pets or children without being paid for it.

I have offered to help a handicapped or elderly stranger across a street.

I have offered my seat on a bus or train to a stranger who was standing.

I have helped an acquaintance to move households.

2. Social Dominance Orientation

To what extent do you agree or disagree with the following statements? (7 point likert scale 1 – disagree strongly, 7 – agree strongly).

Some groups of people are simply inferior to other groups

In getting what you want, it is sometimes necessary to use force against other groups

It's ok if some groups have more of a chance in life than others

To get ahead in life, it is sometimes necessary to step on other groups

If certain group stayed in their place, we would have fewer problems

It's probably a good thing that certain groups are at the top and other groups are at the bottom

Inferior groups should stay in their place

Sometimes other groups must be kept in their place

It would be good if groups could be equal

Group equality should be our ideal

All groups should be given an equal chance in life

We should do what we can to equalize conditions for different groups

We would have fewer problems if we treated people more equally

Increased social equality

We should strive to make incomes as equal as possible

No one group should dominate in society

3. Reciprocity

To what extent do you agree or disagree with the following statements? 1 = strongly disagree, 7 = Strongly agree.

If someone dislikes you, you should dislike them.

If a person despises you, you should despise them.

If someone says something nasty to you, you should say something nasty back.

If a person wants to be your enemy, you should treat them like an enemy.

If someone treats me badly, I feel I should treat them even worse.

If someone treats you badly, you should treat that person badly in return.

If someone has treated you poorly, you should not return the poor treatment. (R)

If someone important to you does something negative to you, you should do something even more negative to them.

A person who has contempt for you deserves your contempt.

If someone treats you like an enemy, they deserve your resentment.

When someone hurts you, you should find a way they won't know about to get even.

You should not give help to those who treat you badly.

When someone treats me badly, I still act nicely to them. (R)

If someone distrusts you, you should distrust them.

If someone does me a favour, I feel obligated t o repay them in some way.

If someone does something for me, I feel required to do something for them.

If someone gives me a gift, I feel obligated to get them a gift.

I always repay someone who has done me a favour.

I feel uncomfortable when someone does me a favour that I know I won't be able to return.

If someone sends me a card on my birthday, I feel required to do the same.

When someone does something for me, I often find myself thinking about what I have done for them.

If someone says something pleasant to you, you should say something pleasant back.

I usually do not forget if I owe someone a favour, or if someone owes me a favour.

If someone treats you w ell, you should treat that person well in return.

4. Fairness

To what extent do you agree or disagree with the following statements? (Likert scale)

I admit when I am wrong.

I treat all people equally.

I am a good listener.

I believe that everyone's rights are equally important.

I give everyone a chance.

I am committed to principles of justice and equality.

I believe that everyone should have a say.

I take advantage of others.

I treat others differently if I don't like them.

I would never take things that aren't mine.

I would never cheat on my taxes.

I return extra change when a cashier makes a mistake.

I would feel very badly for a long time if I were to steal from someone.

I try to follow the rules.

I admire a really clever scam.

I cheat to get ahead.

I steal things.

I cheat on people who have trusted me.

I would not regret my behaviour if I were to take advantage of someone impulsively

5. Risk-taking scale

To what extent do you agree or disagree with the following statements? 1 = strongly disagree, 5 = Strongly agree.

I enjoy being reckless.

I take risks.

I seek danger.

I know how to get around the rules.

I am willing to try anything once.

I seek adventure.

I would never go hang-gliding or bungee-jumping.

I would never make a high risk investment.

I stick to the rules.

I avoid dangerous situations.

6. Nurturance

To what extent do you agree or disagree with the following statements? 1 = strongly disagree, 5 = Strongly agree.

I have a soft heart.

I go out of my way for others.

I think of others first.

I will do anything for others.

I like to please others.

I wouldn't harm a fly.

I make enemies.

I oppose authority.

I believe that I am better than others.

I seek danger.

I put people under pressure.

I try to outdo others.

I believe only in myself.

7. Confidence

To what extent do you agree or disagree with the following statements? 1 = strongly disagree, 5 = Strongly agree.

I feel comfortable with myself.
I just know that I will be a success.
I seldom feel blue.
I like to take responsibility for making decisions.
I know my strengths.
I dislike myself.
I am less capable than most people.
I feel that my life lacks direction.

I question my ability to do my work properly.
I feel that I'm unable to deal with things.

8. Emotional Instability

To what extent do you agree or disagree with the following statements? 1 = strongly disagree, 5 = Strongly agree.

I seldom feel blue.

I am relaxed most of the time.

I feel comfortable with myself.

I am not easily bothered by things.

I take things as they come.

I often feel blue.

I am often down in the dumps.

I get stressed out easily.

I have frequent mood swings.

I feel desperate.

9. Religious Orientation Scale [neutralises particular religious affiliation]

Think about each of the following items carefully. Does the statement apply to you? To what extent do you agree or disagree? Likert Scale 1-5.

1. I enjoy reading about my religion.(I)
2. I go to [my place of worship] Church because it helps me make friends.(E)
3. It doesn't matter what I believe so long as I am good.(E)
4. Sometimes I have to ignore my religious beliefs because of what other people might think of me.(E)
5. It is important for me to spend time in private thought and prayer.(I)
6. I would prefer to go to [my place of worship] church more than once a week.(I)
7. I have often had a strong sense of God's presence.(E)
8. I pray mainly to gain relief and protection.(E)
9. I try to live all my life according to my religious beliefs.(l)
10. What religion offers me most is comfort in times of trouble and sorrow.(E)

11. My religion is important to me because it answers many questions about the meaning of life.(I)
12. I would rather join a [religious] Bible study group than a church social group.(l)
13. Prayer is for peace and happiness.(E)
14. Although I am religious, 1 don’t let it affect my daily life.(E)
15. I go to [my place of worship] church mostly to spend time with my friends.(E)
16. My whole approach to life is based on my religion.(I)

Social Desirability

Do you agree or disagree with the following statements?

I would never take things that aren't mine.
I would never cheat on my taxes.
I believe there is never an excuse for lying.
I always admit it when I make a mistake.
I rarely talk about sex.
I return extra change when a cashier makes a mistake.
I try to follow the rules.
I easily resist temptations.
I tell the truth.
I rarely overindulge.
I have sometimes had to tell a lie.
I use swear words.
I use flattery to get ahead.
I am not always what I appear to be.
I break rules.
I cheat to get ahead.
I don't always practice what I preach.
I misuse power.
I get back at others.
I am likely to show off if I get the chance.

Appendix 9: Experiment Briefing

Introduction

Hello, and thank you for choosing to participate in our study!

There are three parts to this study. First, you will be asked to answer a few mandatory questions. We need this information to help us understand how different people respond to our experiments. Be sure to answer each question! You may then be asked to read a short passage. Next, you will take part in the main experiment which is designed to measure your automatic responses to a series of different topics.

Your main task here will be to sort a series of words and/or images into the groups they belong to, as fast as you can. Some people may find a few of the images slightly unpleasant. If this is the case for you, you have the right to withdraw (or stop) your participation in the test.

We will then take you into a different room to participate in a game where you may have the chance of winning up to "20. We'll also give you cookies! Finally, we have a few survey questions we'd like you to answer to help our analysis.

Your participation is voluntary and very much appreciated, but should you wish to end the test, all you have to do is close the window. We won't be asking you for any contact details or identifying information so the whole test is completely confidential and anonymous.

In order to be taken to the experiment you must click the 'continue' button below. Please be aware that by clicking this button, you are indicating that you:

- Are 18 years of age or older,
- Have read and understood the above statements,
- Are providing your informed consent and agreement to participate in this study.

If you have been given a session code, please enter it here:

Appendix 10: IAT Instructions

Instruction Introduction

Implicit Association Test

The experiment will show you a series of words and/or images that belong to specific (and easily recognised) categories or groups. It is your task to categorise each word or image that is shown on the screen as fast and as accurately as you can. This shouldn't take longer than five minutes. The box below will show you what words you'll be categorising and which groups they belong to. We won't show the images here, but they'll be very easy to categorise!

[Word box: IAT items]

To perform this test, you will need to have your index or middle fingers at the ready! You will be using the 'E' key and the 'I' key on your keyboard.

A word or image will appear in the middle of your screen belonging to one of the two categories shown in the top right and left corners. Each word or image belongs to one group only. The aim of the test is for you to sort these words or images into the groups they belong to as quickly and as accurately as possible. To do this, place a finger on the 'E' and 'I' keys. When a word or image belongs to the group shown on the left, press the 'E' key. When the word or image belongs to the group shown on the right, press the 'I' key.

Remember to go as **fast** as you can, and be **accurate**! If you make an error, an X will appear. You can fix this error by hitting the correct key.

Within IAT Instruction 1

See above, the categories you will be sorting words or images into have changed. The items showing in the centre of the screen have changed too. The rules remain the same however. Here's a recap…

When the word or image belongs to the group on the left, press the ‘E’ key. When the word or image belongs to the group on the right, press the ‘I’ key. If you press the wrong key, an X will appear. Hit the correct key and the test will continue.

Remember to go as **fast** as you can, and be **accurate**!

Within IAT Instruction 2

Now that you have performed this task with separate groupings, it’s time to really put you to the test!

You now have two groups in both the right and left hand corners of the screen. This means that you will be sorting words or images into four different groups. Each word or image still only belongs to one group, but two of these groups will now share a key.

So, when a word or image belongs to one of the groups shown on the left, hit the ‘E’ key. When the word or image belongs to one of the groups shown on the right, hit the ‘I’ key.

Remember to go as **fast** as you can, and be **accurate**!

Within IAT Instruction 3

Your task here is to sort the words and images into the same four categories. Hit the ‘E’ key to sort words and images that belong in the groups on the left. Hit the ‘I’ key to sort words and images that belong to the groups on the right.

Remember to go as **fast** as you can, and be **accurate**!

Within IAT Instruction 4

You’ll notice that you now only have to sort words and images into two groups. They’ll be familiar to you as you’ve already completed a similar task. This time however, the positions of the groups have been switched.

The same rules apply though – hit the ‘E’ key when words or images belong to the category on the left, and the ‘I’ key when the words or images belong to the group on the right.

Within IAT Instruction 5

Once again, you will be sorting the same words and images into four different groups. Remember that each word or image belongs to only one group, but that two of those groups now share a key. Press 'E' for words and images belonging to groups on the left, and 'I' for words and images that belong to groups on the right.

An X will appear if you make a mistake. Hit the correct to continue with the test.

Remember to go as **fast** as you can, and be **accurate**!

Within IAT Instruction 6

You'll see that we'd like you to perform the same task again. The same rules apply – the 'E' key represents the groups on the left and the 'I' key represents groups on the right.

Remember to go as **fast** as you can, and be **accurate**!

Within IAT Instruction 7

You'll see that we'd like you to perform the same task again. The same rules apply – the 'E' key represents the groups on the left and the 'I' key represents groups on the right.

Remember to go as **fast** as you can, and be **accurate**!

Appendix 11: Thank you and debrief

Congratulations! You have successfully completed the test. Your results, and others', will help us to better understand the cognitive mechanisms involved in intergroup relations – how different groups of people interact with one another.

So, what was the experiment all about?

We each belong to many different social groups (male or female, gay or straight, nationality, race, religion, etc). These group memberships define us in many ways. This is particularly the case in situations of inter-group tension, such as competition for limited resources. In these situations, people tend to see each other, and themselves, as group members, or in terms of their social identities, rather than as individuals. So, for example, if you are a baker, in a room with a lot of other bakers and a similar number of butchers, and Fred (a baker) asks you if you know George, your response may very well be… 'George? Oh, George the *butcher*? Sure I know him!' These simple associations take place all the time, but can become significant drivers of misinterpretations and prejudice in times of inter-group competition.

The tests you have just completed measure your automatic associations on the basis of how quickly, and accurately, you performed each categorisation task. What we are looking for is how quickly you associated positive items with your own group membership, and how quickly you associated negative items with other groups of which you are not a member. The lotto-kitty game you played measures this tendency behaviourally so we can investigate whether your automatic association reflect your behaviour, which they may well not! The survey questions you answered will help us to understand what factors increase or decrease these tendencies.

You may remember being told that you belonged to the Red group early on in the test. Well, we actually made up this group, and your belonging to it, so that we could test your responses as a group member more effectively. We hope you don't mind!

If you are interested in what we find, watch this space and check the website in the future, and we will tell you about our results once we have analysed all our data!

Thanks again!