Effects of Context(s) on Political Radicalisation

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This thesis is submitted in partial fulfilment for the degree of Doctor of Philosophy

April 2022

Psychology Lancaster University

Postgraduate Research Degrees

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Chapter 1 - Kordoni, A., Taylor, P., & Conchie, S. (2022). "*It Depends on the Context.*" A Conceptual Framework of Context Interdependency on Radical Endorsement.

Conception of paper: Anastasia Kordoni, Paul Taylor, Stacey Conchie

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Contribution of principal author: 85%

Chapter 2 - Kordoni, A., Conchie, S., Taylor, P., McCulloch, K. C., & Richardson, B. (2022). Using Contexts to Understand When and Why Surveillance and Privacy Violations Lead to Pro-Radical Action.

Conception and design of study: Anastasia Kordoni, Paul Taylor, Stacey Conchie

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Contribution of principal author: 85%

Chapter 3 - Kordoni, A., Taylor, P., Conchie, S., & McCulloch, K. C. (2022). How do Social Inclusion/Exclusion and Radical Narratives Shape Radical Endorsement?

Conception and design of study: Anastasia Kordoni, Paul Taylor

Acquisition of data: Anastasia Kordoni, Kathleen C. McCulloch

Data analysis: Anastasia Kordoni

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Acknowledgements

First and foremost, I thank my supervisors, Professor Paul Taylor and Professor Stacey Conchie, for their meticulous feedback, helpful guidance, and precious experience. This PhD would not have been possible without their human support and supervisory advice.

I also thank Dr Kathleen C. McCulloch and Professor Mark Levine for their valuable comments and words of encouragements. I much appreciate their support and benefited from many discussions with my friends and colleague students, Shirly Ma and Lisa Lin, who have been with me during the whole process to share ideas and challenge me. I also thank Dr Christiana Iordanou for her kindness and optimism.

A special thanks to my partner who supported me throughout these years with all his patience and love, and my family for making this journey easier for me. I also thank my friends, especially Sofia Ellina, Dimitris Kanelis, and Rafael Savva who were always believing in me, making me laugh and having so much coffee with me during these years.

This research was supported by a full teaching scholarship from the Faculty of Science and Technology at Lancaster University. I thank Clare, Nadine, and Kay for their help and for making my PhD experience as enjoyable as possible.

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Abstract

Understanding the drivers of political radicalisation is necessary to predict and plan for radicalised responses. While the radicalisation literature shows an increasing interest in the ways context elicits radicalised behaviours, empirical research in this area remains limited. Additionally, while this literature categorises context into individual, group, and mass level, it has rarely systematically tested how a combination of these categories affect radical behavioural outcomes. In this thesis, I argue that accounting for the interdependency between different context categories can explain the heterogeneity of radicalisation processes and outcomes. I draw on contextual challenges that are prevalent in our social reality to examine how individuals' online/offline societal experiences, alongside broader categories of socio-political contexts and national cultural references, drive radical endorsements. More specifically, I use this context interdependency to examine both radical shifts and the underlying processes that direct these shifts. In doing so, I propose a conceptual framework which identifies the biopsychosocial mechanisms that are likely to stimulate radical action (Chapter 1).

A contextual approach to political radicalisation assumes that different sets of context categories interact in diverse ways and are likely to instigate psychological processes that drive different forms of radical outcomes. To investigate this assumption, I explored how context interdependency affects physio-cognitive and group processes to elicit support for radical actions. Using big data (Google search data) and two different experimental designs (with the general population and students from the UK and USA), I showed how combining online societal experiences and socio-cultural contexts predicts radical shifts in response to practices of surveillance and privacy violation over time (Chapter 2). Extending this research, five experiments were carried out to show

that radical endorsement-as measured with response to hate speech, Brexit, vote denials in European elections, and climate change- are predicted by a combination of online/offline societal experiences, socio-political and national cultural contexts and determined by physio-cognitive processes, identity processes and individual belief systems (Chapter 3). Theoretical implications for the importance of context in shaping political radicalisation and practical implications for explaining radical shifts are provided (Chapter 4).

Introduction

Political radicalisation is an inherently disruptive process that challenges social order and affects social relationships, norms, and behaviours. As such, how people endorse radical behaviours has been at the epicentre of scientific and policy research. While this research has identified many contributing factors to radicalisation, ranging from intra-individual to global ideological forces (e.g., Ferguson & Binks, 2015; Ferguson & McAuley, 2020), the contextualisation of emergent radicalised behaviours has been problematic. There has been a transition from examining radicalisation in the total absence of context to identifying context-specific factors that define radicalisation per se (Crenshaw, 2009). For example, in cases of individual drivers to radicalisation, such as loss of life, the effect of context was implied but not tested, whereas in case of contextual drivers, such as an experienced grievance or foreign policy, only the impact of this specific context was examined (McCauley, 2018). Yet, radicalisation is dependent on the socio-cultural, political, and historical contexts in which it is placed (Benevento, 2021), and so, such an approach ignores how these contexts *in combination* affect the emergence of radical behaviour.

An evaluation of indicators to radicalisation can only be reliable when accounting for the interdependency between the contexts in which radicalisation takes place (Gill, 2015). This is because the systematic isolation of an individual or group experience from the immediate contextual influences and the broader socio-political situation excludes social interactions, as well as socio-political and cultural interpretations of this experience, which are predictive of the subsequent behaviour (Friemel, 2008). Indeed, in a recent meta-analysis and content analysis of radicalisation processes since 2014, Du Bois et al. (2019) found different clusters of online, societal, political, and cultural contexts and pointed to the need for interconnection among these

contexts within research as a limitation. As such, researchers have called for more empirical research on how incorporating such contexts predicts radical shifts over time (e.g., Benevento, 2021).

This call has informed the two main research questions (RQ) of this thesis: (1) how combining immediate (online/offline) societal, socio-political contexts, and national culture influences radical endorsement, (2) how interdependency between these contexts (context interdependency) affects the psychological processes that promote different forms of radical endorsement.

One difficulty in investigating how context interdependency affects radical endorsement (RQ 1) relates to how context is defined. The term is used in different ways in different disciplines and even by individual scholars. Some scholars refer to online contexts and the cyberspace, which are distinct from the physical space (external environment) because their inherent characteristics, such as anonymity and disembodiment, lead to self-representations independent of offline identities and physical appearances (McKenna & Bargh, 2000). In this way, context can be described as the "context of practice", which emphasises the point that context is "where things happen" (Hopkins, 2008). In social psychological research, contexts are selected or constructed by abstracting from situations and isolating phenomena in order to understand them (Mitchell, 1987) better. Depending on what a researcher aims to explain, context can be social based on group relationships (Stuart et al., 2019), or a psychological situation (e.g., privacy concerns) (Masur, 2018), a task (e.g., Cyberball-a virtual ball tossing game, Williams et al., 2000), or even a national culture (e.g., British culture, Revell & Bryan 2018).

In radicalisation research, defining contexts has followed a similar notion. That is contexts are defined in either more literal, "localised" terms or more broadly and metaphorically depending on the research questions. Contexts are described as trigger points, push factors (e.g., McCauley & Moskalenko, 2011), and endemic factors (Youngblood, 2020) to introduce aspects of the social and political domain, national and international policies, and an individual or group experience. While this approach to context can be explained by the need to identify "indicators" that would be statistically associated with radicalisation to be used by intelligence services, it neglects the explanatory power of concurrent contextual influences and politics (Kudnani, 2012). Thus, questions, such as what kind of political circumstances, combined with what kind of political narratives, are likely to promote what kind of radicalised behaviours remain under-investigated.

This thesis defines *context* as a system that includes multiple context categories. Our approach is in line with the notion of "*nested contexts*" (Mitchell, 1987) that places narrower contexts, such as a face-to-face situation, within a wider context, such as the social environment, and that within a wider context, such as the socio-political system, in a form of concentric circles. Here the action and the context, as well as the individual and the context, are not considered independent. Instead, we agree with Howarth et al. (2013) that "nested contexts" consist of physical aspects of the environment, social aspects, such as social norms and institutions, historical aspects containing representations and discourses, and ideological aspects imposing certain ideas over others. Similarly, we conceptualise context as a system comprising immediate (online/offline) societal experiences, the prevalent socio-political situations, and national culture as distinctive and interdependent context categories. These categories

have derived from collecting and grouping the contextual factors reported in the social psychological research on radicalisation (which will be explored in the next section).

Immediate societal experiences reflect social practices that an individual has experienced or perceived that have been experienced by people in the same or a different group. A social practice produces and reproduces norms, values, and rules through social processes leading to a specific social order (Bjerre, 2015; Bourdieu, 1998; Hansen et al., 2018). The word "immediate" implies temporal proximity, namely a societal experience at present or a revival of a previous experience at present. These practices are perceived to be immediate societal experiences as they pertain to group dynamics through which a specific behaviour is experienced at present, e.g., being excluded by members of a group to which you belong (national group), as in Chapter 3. Similarly, online exposure to political narratives from different political groups (Chapters 2 & 3) is a societal experience that can become salient online at present and rely on different interpretations of group dynamics. Given this combination of its spatio-temporal and psychological components, immediate societal experiences would be the narrowest circle of the "nested contexts."

Socio-political situations are about political institutions, events of the state and other political formations whose political decisions and actions have consequences for the whole society, such as, Brexit and climate change. As with immediate societal experiences, socio-political situations are not independent from the individual and group dynamics. How individuals and social groups position themselves towards these socio-political situations determines how these situations are perceived and influence behaviour. The difference between this "circle" of context and the previous one (other than the temporal variation) is that this broader context allows these socio-political issues to be discussed and debated with a larger social group, sometimes the society as a

whole (e.g., Howarth, 2013). By contrast, an immediate societal experience might not be communicated at all or might be communicated when the opportunity occurs, starting with a narrower network of people.

In the conceptualisation of context as a system, *national culture* is the broadest context that includes the others. National culture is a system of shared meanings within a nation. It reflects interconnected mental representations that are shared by national groups and transcend the individual. National culture is about the norms, values and customs shared by a national group, which shape their behaviour and beliefs about what is important. Research on collective action and culture posits that culture is a system of shared meanings linked to enacting group identities (van Zomeren & Louis, 2017). Building on this, Thomas et al. (2019) have shown that national culture shapes mobilisation processes in solidarity with refugees differently from one country to another. Thus, this thesis proposes a conceptual framework of radical endorsement where context is treated as a system of multiple context categories. This system comprises the immediate (online/offline) societal experiences, the prevalent socio-political situations, and national culture as distinctive and interdependent context categories. By investigating the combined effects of these context categories, this thesis captures the spatiotemporal - and psychological dimensions that these categories reflect. For example, exposure to a radical rhetoric (societal experience) for Brexit policy (socio-political situation) captures spatiotemporal. In contrast, affective reactions to this rhetoric touch on the psychological dimensions of the context of Brexit.

This thesis examined behaviours that reflect the initial steps of radicalisation. Applying a contextual approach at the beginning of a radicalisation process is beneficial for at least four reasons. First, political radicalisation is open to everyone and, thus, not arbitrarily attached to specific populations and identities. This thesis provides evidence

for context functionality in line with this principle by examining different contextual influences across populations. Second, investigating how ordinary individuals may endorse radical action provides a better understanding of the underlying influence processes and their interdependence with different context categories compared to the investigation of this interplay on a minimal sample of known extremists (McCauley & Moskalenko, 2008). In other words, the latter is likely to be more restrictive in its capacity to identify the breadth of potential influence processes to radicalisation.

Third, primary level counter-radicalisation interventions seek to reduce the likelihood of radicalisation among the general population. This means that they seek to forestall processes that are likely to initiate radical shifts, especially those which tend to be linked with violence. Thus, identifying which combinations of context categories facilitate the spread of specific radicalised ideas and actions over others can benefit these interventions. Forth, political radicalisation cannot be understood without examining the group processes in place (Crenshaw, 2009; Smith et al., 2020). That is, intergroup and intragroup dynamics affect how context experiences are interpreted, as well as how influence evolves to predict behaviour. At the initial steps of radicalisation, the potential exposure to various radical groups, and the variety of individual group memberships represent a fruitful source for examining enactment that aligns with the positions of these respective groups. By examining the group processes that elicit radical endorsements, this thesis provides a venue for investigating defensive mechanisms to radical influence (Trip et al., 2019) that are unlikely to be identified after an individual has adopted a radical ideology or has acted upon it.

Overall, this thesis aimed to offer insights into the functional role of context to political radicalisation. Although there is extensive research on how contexts distinctively affect radicalisation processes, empirical evidence on concurrent

contextual influences remains sparse. To explore this, I investigated what kind of context categories combined significantly impact radical endorsement. Driven by the notion that radical endorsements are actions for a request for urgent societal change (Capelos et al., 2017), this thesis provided evidence on the way context interdependency elicits different forms of radical support when radical alternatives are salient. In this way, it contributes to the broader theoretical understanding of how contextual experiences interfere with influence processes to instigate different radical endorsement forms and provides practical policy recommendations.

Specifically, it informs counter-radicalisation programmes that tend to target contextual factors. By identifying the effects of context interdependency and the processes through which this interdependency predicts the direction of a radical endorsement, this thesis illustrates differences from what we have come to understand as risk factors. While a specific experience can be considered to put an individual or group at risk of radicalisation when systematically tested within a context system, there is little to no evidence of how the same experience affects radical endorsements when placed in a different context system. There is a debate concerning the degree to which counter-radicalisation programmes should focus on targeting risk factors in a more locally relevant way or draw from experiences in other countries (Hardy, 2019). This thesis aimed to provide new evidence for this debate.

Overview of Thesis Chapters

Since this thesis aimed to examine context interdependency by focusing on different context categories, the decision was made to submit this thesis in the alternative format. This format facilitated the investigation of context interdependency more systematically and allowed papers to be written in a format suitable for

publication. The first goal of this thesis was to examine how immediate (online/offline) experiences, broader socio-political situations, and cultural references in the aggregate affect radical endorsement. The second aim was to investigate the psychological processes underpinning the relationship between context interdependency and radical support.

Chapter 1

Chapter 1 introduces a conceptual framework for the research questions. First, I present a conceptual framework of context interdependency to radical endorsement and outline how thinking about the context has evolved in radicalisation literature. I then unpack each component process of the proposed framework. I emphasise the theoretical models that informed my investigation in different levels of processing, as well as the criteria that need to be satisfied for these processes to develop. This Chapter illustrates how context interdependency is conceptualised and assessed in this thesis and the different routes through which influence is likely to emerge to instigate radical support. It finishes with the implications of this framework. This Chapter will be submitted to the *Journal for Deradicalization*. The following Chapters provide an empirical test of the proposed framework.

Chapter 2

Chapter 2 includes three pre-registered studies that examine context interdependency in relation to surveillance and privacy violations. Study 1 was a lab experiment testing how context interdependency, as defined by surveillance practices and online exposure to a terrorist message, predicts compliance or reactivity to societal expectations. This study further identified the underlying biopsychosocial mechanisms that drive the behavioural outcome. Study 2 used a quasi-experimental online design to

examine how context interdependency, as defined by institutional violations of privacy protection and online social interaction, influences group level processes in support for radical action against institutional violations of privacy protection in both the US and the UK. By combining survey data with qualitative data, Study 2 also investigated public perceptions regarding the different forms of action against institutional privacy violations. Study 3 used big data to investigate how real-life events of privacy violation affected online search behaviours for different material, actions, and groups (including radical) associated with privacy violations cross-culturally and over time. To examine the context-behaviour relationship, the quantitative analysis included mixed effect modelling (Study 1). Study 2 used structural equation modelling to identify relationships between group processes and radical action. Qualitative data were used for the creation of a new measurement for the perceived attributes of actions against institutional violation of privacy protection. Study 3 included time series analysis for predicting behavioural trends over time. This Chapter will be submitted to the *Journal of Personality and Social Psychology.*

Chapter 3

Chapter 3 consists of five pre-registered experiments (one lab experiment and four online experiments) that examine the effect of context interdependency defined by social inclusion/social exclusion and exposure to radical and terrorist messages. These societal context categories were chosen because they are frequently experienced as a result of authority surveillance, and so they can provide additional evidence on the way the different combinations of context categories facilitate radical endorsements. Using physiological, eye-tracking data and self-reports collected in the UK and the US, these studies investigated how physio-cognitive responses, identity processes, and individual belief systems influence the relationship between context interdependency and radical

endorsement. Social inclusion and exclusion are also theorised to instigate political radicalisation (Bal & van den Bos, 2017). The five experiments reported here tested the context interdependency between social inclusion versus exclusion and radical versus terrorist rhetoric concerning a hate speech incident (Study 1), a non-specified context (Study 2), Brexit (Study 3), vote denial in European elections (Study 4), and climate change (Study 5). Mixed effect modelling was used to examine the direct effects of context interdependency on radical endorsements (Studies 1 & 2). Path analysis and moderated models were used to examine the processes that drive radical influence and the factors that facilitate different forms of radical endorsement, respectively (Studies 3 to 5). The Chapter will be submitted to the *Journal of Experimental Social Psychology.*

Chapter 4

The final Chapter of this thesis presents an overall discussion of findings regarding the research questions posed in this introduction. As a more focused discussion of each paper is provided in the corresponding Chapters, Chapter 4 focuses on emerging themes across Chapters, their implications with the proposed framework in Chapter 1, and the impact of this research. It finishes with the overall limitations of the research rather than individual study limitations, which are presented in the respective Chapters, and future directions in the investigation of the effect of context and influence processes to early stages of political radicalisation.

All studies presented in this thesis were pre-registered and granted ethics approval by the Faculty of Science and Technology Research Ethics Committee (FSTREC) at Lancaster University (ref. code: FST19004). Data and analysis code can be found at: https://osf.io/29x5n/?view_only=a83257a63d004b11af21b46cac226e59

Chapter 1

"*It Depends on the Context.*" A Conceptual Framework of Context Interdependency on Radical Endorsement

Abstract

We propose a conceptual framework of context interdependency for explaining variation in radical endorsements at early stages of radicalisation. Previous research suggested that radical behaviour is context dependent. We argue that a context is a system of different concurrent categories that in combination shape radical endorsement. These categories consist of immediate experiences, socio-political situations, and national cultural references. By accounting for the interdependency between these categories, we can identify what kind of category combinations matter for different forms of radical behaviour. Different combinations affect the nature of the processes through which radical endorsements occur. They engineer potential courses of radical action by (i) influencing physio-cognitive responses, (ii) initiating processes of identity adoption or adherence and (iii) infiltrating action through existing belief systems. We suggest that conceptualising context as a system is key to ensuring clarity and consistency in investigating radicalised behaviours.

Keywords: context, radicalisation, conceptual framework

"*It Depends on the Context.*" A Conceptual Framework of Context Interdependency on Radical Endorsement

The spread of far-right movements, as well as successful movements against discrimination, social injustice, and climate change, suggests that political radicalisation is likely to escalate. Despite their ideological differences, these movements share common characteristics that relate to the fact that they: i) capitalise on psychosocial mechanisms to gain and maintain support, ii) use the Internet as a means of influence, and ii) depend on the prevailing socio-political situation, and adapt to it (Feddes et al., 2020). While much research has focused on the means of influence to radicalisation (e.g., Odağ et al., 2020), as well as the psychological processes associated with their influence (e.g., McCauley & Moskalenko, 2017), the impact of context on radicalisation has received relatively less attention. Context is predominantly investigated as either micro-, meso- or macro-level events. Albeit effective in examining such a complex phenomenon, this decomposition overlooks the influence of context interdependency on the evolvement of radicalisation. Since any given societal experience is understood through the broader socio-political and cultural contexts in which it occurs, not accounting for context interdependency may mislead research on the potential causes and consequences of radicalisation (Benevento, 2021). It can also affect risk assessment tools and subsequent interventions (Knudsen, 2020). Thus, the purpose of this chapter is to examine the role of context interdependency in political radicalisation. We present a conceptual framework that investigates how societal experiences (online/offline), along with the prevailing socio-political situation and national cultural references affect radical endorsement, as well as the underlying processes that determine the forms of radical behaviour to be endorsed.

Specifically, we aim to provide a new way of thinking about the effect of context interdependency on radicalisation by proposing an integrated framework of different context categories and influence processes. This framework ensues from the notion that any individual act is placed within the immediate context, but also experienced and assessed on the basis of the broader context(s). This means societal, social, cultural contexts are not only used to inform social reality but are also influenced by an individual's capacity to deliberately influence social reality by adapting their behaviour, emotions, and values to the contexts encountered (Bandura, 1986). We propose that this interdependency between different contexts plays a functional role in the ways psychological processes influence radical endorsements because it determines the availability of information sources, facilitates or hinders social interaction, and forms the belief systems that appraise the immediate experiences.

First, we describe the main concepts that are investigated in this thesis. Then, we provide an overview of the proposed conceptual framework, discuss how the framework is informed by, and contributes to, existing literature in this area, and provide a more detailed account of the different components of this framework.

1. Setting up the Scene – Definitions and Distinctions between Concepts

Table 1 presents the definitions for all concepts discussed in this thesis and how they were operationalised across the studies. Following the definitions of context, immediate societal experiences, socio-political situations and national culture, which have been discussed in the Introduction, this section further describes the definitions, commonalities and differences in conceptualising political radicalisation, radicalism, and terrorism, as per Table 1. The rest of the concepts are discussed in more detail in the respective sections of Chapter 1, where we explain the proposed framework.

Table 1

Overview of the definitions and operationalisations of the main concepts of this thesis

Term	Definition	Operationalisation
1. Context	A multi-layered system of context categories that encompasses immediate societal experiences, socio-political situations, social relations, and national cultural references.	Examined with the effect of concurrent societal experiences (practices, such as social exclusion, and exposure to radical rhetoric) that are embedded within a socio-political situation (privacy violation, Brexit, climate change) cross-nationally.
2. Context interdependency (see Section 2)	The combination of specific context categories (immediate societal experience, socio-political situation, national culture) that mutually facilitate specific forms of radical influence.	Investigated in Chapters 1 and 2 by examining the effects of a context system on radical behaviour and then changing one layer of the same system to examine whether this change drives differences in radical behaviour.
3. Immediate societal experiences	Societal practices that have been physically or psychologically experienced at present by an individual or perceived to be experienced by other ingroup members.	1) By being informed of being under surveillance or privacy is protected (Chapter 2-Study 1). 2) By exclusionary and inclusionary experiences (Chapter 3). 3) By exposure to terrorist and radical messages (Chapters 2 and 3).
4. Socio-political situations	Issues of the state that are debated in a given society and position individuals along with a group membership dimension.	By the subject-matter that frames the design of each study: 1) Surveillance, privacy violations (Chapter 2). 2) Hate speech, Brexit, the European elections, climate change (Chapter 3).

Table 1 (*Continue*)

Term	Definition	Operationalisation
5. National culture	The values and attitudes shared by individuals from a specific country that shape their behavior and beliefs about what is important.	1) Cross-country comparisons (Chapter 2-Studies 2 and 3). 2) Testing the same context system in different countries (Chapter 3-Study 5). 3) Testing the effect of national identification on shaping a belief system using a national identification scale (Chapter 3- Studies 3 to 5).
6. Political radicalisation	Contextual multi-level processes by which people come to adopt an ideology that advocates for urgent, transformational changes in the socio-political order and induces actions to this end (Prentice & Taylor, 2018).	Radical endorsements across Studies as a proxy of the effect of context interdependency on radicalisation.
7. Radical endorsement	An act of support for a direct form of political action that aims for swift change against the status quo in order to bring progress and has complex psychological properties that may or may not lead to actual action (Capelos et al., 2017).	1) Joining a forum for pro-radical action (Chapter 2-Study 2). 2) Online searching for pro-radical groups and materials (Chapter 2-Study 3). 3) Online support for radical campaigns (Chapter 3-Studies 2 to 5).
8. Reactionist endorsement	An act of support for a direct form of political action that aims for returning to how things used to be in the past (Capelos et al., 2017).	Online support for a reactionist campaign (Chapter 3-Studies 3).

Table 1 (*Continue*)

Term	Definition	Operationalisation
9. Activist intention	Willingness to support normative- consistent with social standards- actions for social change.	Activism and Radicalism Intention Scale (Moskalenko & McCauley, 2009).
10. Radical intention	Willingness to support non-normative- inconsistent with social standards- and sometimes violent actions for social change.	Activism and Radicalism Intention Scale (Moskalenko & McCauley, 2009).
11. Radical rhetoric	Online narratives from radical groups that aim for swift social change and propose certain forms of direct actions which are neither normative nor necessarily illegal (Capelos et al., 2017). The component of violence is not a given as it is with terrorist rhetoric.	Short messages that include narratives in line with the definition (Chapter 2-Study 2, Chapter 3- Studies 1 to 5).
12. Terrorist rhetoric	Parts of online narratives from religiously motivated terrorist organisations.	Short messages that include narratives from religiously motivated terrorist organisations as published online (Chapter 2-Study 1, Chapter 3- Studies 1 and 2).
13. Symbolic threat	Threats against one's belief system, values, and social norms (Stephan & Stephan, 2000).	1) A short terrorist message that includes elements of threat against the Western values (Chapter 2-Study 1). 2) A short radical message that includes elements of threat against socio-political matters that support the status quo (Chapter 3- Studies 1 and 2).
14. Realistic threat	Threats against one's existence and welfare (Stephan & Stephan, 2000).	A short terrorist message that includes elements of death threats (Chapter 1-Study 1).

Table 1 (*Continue*)

Term	Definition	Operationalisation
15. Ideology	A set of ideas and beliefs that people use to figure out how the social world works, what their place is in it and what they ought to do (Hall, 1992).	Political orientation scale (Carney et al., 2008). System justification scale Kay & Jost, 2003. Anti-egalitarianism scale (Radinowitz's (1999). SDO(Pratto et al, 1994). Democratic governance scale (Inglehart et al., 2014).
16. Structural determinants (see Section 3)	The mechanisms that enable radical influence.	Socialisation: Measured with vicarious interaction (see Term number 3). Group processes: Identity construction measured with the identification scale (Cameron, 2004), the identity fusion pictorial scale (Swann et al., 2009), latent constructs (i.e., influence processes-Chapter 2).
17. Collective action (see Section 4.3)	Any action undertaken by individuals or psychological group members to either challenge or support the status quo (Thomas et al., 2022).	By individuated acts of pro radical support with collective consequences: 1) Joining a forum for radical action (Chapter 2). 2) Support for radical campaigns (Chapter 3).
18. Influence processes	A latent construct of processes that determine the direction of a radical endorsement.	Consensualisation, social validation measured with self-reports (Chapter 2-Study 2).

Table 1 (*Continue*)

Term	Definition	Operationalisation
19. Identity fusion (see Section 4.3)	A form of alignment with a social group while retaining a sense of personal agency and channelling it into pro-group action (Swann & Buhrmester, 2014).	Identity fusion Pictorial Scale (Swann et al., 2009).
20. Vicarious interaction (see Section 5).	Indirect interactions in online settings in the form of watching videos (Smith et al., 2020) or observing online discussions and narratives (Osatuyi, 2015).	1) Exposure to radical rhetoric in the form of website news reports (Chapters 2 and 3). 2) Quasi-experimental by informing participants about the group's online activity (Chapter 2, Study 2).

In early research, radicalisation was defined in context-specific terms. It investigated radicalisation processes in specific contexts and claimed to establish causality of these processes without testing them in different contexts. This early work guided subsequent radicalisation research leading to the problem of self-reference in defining radicalisation (Githens-Mazer, 2012). Since 9/11, the "push" in investigating radicalisation has focused on terrorist attacks by extreme religiously motivated groups (e.g., ISIS, Al Qaeda, Al-Shabaab). This focus on Jihadist radicalisation resulted in a restricted definition of radicalisation associated with Jihadist terrorism. For example, initial government reports defined radicalisation as a signifier of Islamist political violence providing a specific view of Muslim communities in the West (Schmid, 2013). As a socio-political concept, radicalisation has mostly been defined a posteriori, based on conceptual models that were developed across the last 20 years to describe adherence to specific groups and acts of political violence or terrorism. As of early 2011, Githens-Mazer conducted a systematic review to explore how radicalisation has been defined. They found that in over a hundred books, journal articles, government papers and documents, working papers, and think-tank reports that were directly relevant to the study of radicalisation, more than half did not offer any definition of radicalisation. Most of those which did mention a definition tended to either define radicalisation in context-specific terms or via the total absence of context (Crenshaw, 2009).

One common aspect of many radicalisation definitions is that it is a process, of which the sequential order of the events, the endpoint, and the use of violence within are to be determined. Early 'process' definitions described radicalisation as a series of steps towards becoming a terrorist (Moghaddam, 2005; Prevent Strategy, Home Office, 2011). In this case, the linearity of steps is explicit, and terrorism is the endpoint. Similarly, others defined radicalisation as a gradual conversion process to violence (e.g.,

Doosje et al., 2016; Maskaliūnaitė, 2015) or a process that regards the use of violence as a legitimate method of conflict resolution (Bermingham, 2009). In other definitions, radicalisation is a process of incrementally adopting an extremist political or religious ideology that increases the risk of engaging in violent extremism or terrorism (Brighton, 2007; Horgan, 2009; Vidino, 2011). Gradually, radicalisation as a process abandoned the linearity assumption (Horgan, 2009; McCauley & Moskalenko, 2008) and shifted toward more abstract definitions, such as changes in beliefs, feelings and behaviour in the direction of increased support for a political conflict that involves individuals, groups, societies and states (McCauley & Moskalenko, 2010, 2011). An increase in the available data from different contexts and sources led to the realisation that the context is not only about "localising" radicalisation but also about determining how social phenomena are interpreted and radicalised behaviours are endorsed.

This shift toward seeing context as a function led to definitions that increasingly focused on context and included different endpoints. For example, many distinguished between radicalisation of opinion and radicalisation of action (e.g., Hafez & Mullins, 2011; Leuprecht et al., 2010; McCauley & Moskalenko, 2017a; Taylor & Morgan, 2006; Feddes et al., 2020); the first relating to attitudes and beliefs that deviate from those of mainstream society, and the latter relating to a range of radical actions. Van San et al. (2013) defined radicalisation as a process where "ideals have gone adrift," while Bal & Van den Bos (2017) as the issue of what leads people to reject the mainstream status quo and start engaging with radical groups and associated radical behaviour. Feddes et al. (2016) refer to radicalisation as normative or non-normative, non-linear forms of actions that may (or may not) include the intention to use violence and are triggered by situational factors (Feddes et al., 2016). Neumann (2013) stated that radicalisation as a process can lead to non-violent, legal, violent or illegal activities

and whether for good or bad is to be judged in the long term. These definitional transformations of radicalisation amplified their contextual dependency and opened the way for an integrative, dynamic examination of the relationship between contexts and groups.

For this thesis, I define *political radicalisation* as contextual multi-level processes by which people come to adopt an ideology that advocates for urgent, transformational changes in the socio-political order and induces actions to this end (Prentice & Taylor, 2018). Based on this definition, radicalised behaviours are neither necessarily illegal (Veldhuis & Staun, 2009) nor violent (Capelos et al., 2017). This conceptualisation of radicalisation as processes that look for a profound transformation of the socio-political system is closely link to the concept of radicalism. Calhoun (1987) defined radicalism as a political orientation towards challenging the status quo, while Wolfe (1923) as desiring and advocating for speedy, profound, innovative reform or revolution that either affects certain aspects of social relations or involves the entire social order. Although radicalism does not hold a uniform conceptualisation, many scholars agree that radicalism is not inherently associated with violent methods. Yet, its empirical measurement in psychosocial research tended to be restricted to behavioural indicators of predominantly illegal and violent actions. For example, much research on radicalisation adopted Moskalenko and McCauley's (2008) definition of intentions of radicalism being the readiness to participate in illegal and violent actions. Albeit useful in radicalisation research to terrorism, this definition hinders understanding of more recent expressions of radical political preferences that do not necessarily lead to violence.

Capelos et al. (2017) built on these earlier definitions of *radicalism* and defined it as a complex system of emotions, change-promoting values and attitudes, and

political actions that denote a desire for swift change *against the old*. The authors emphasised that to understand radicalism, we need to distinguish it from *reactionism*, which was defined as a desire for change towards the old, *against the new* (returning to the way things were in the long past). In this sense, radical actions are actions that disrupt the status quo aiming to achieve progress. Recent research found that actions against oppression and racial discrimination that are perceived to be constructively disrupting, namely both non-normative and non-violent, tend to gain more support than either of these forms separately (Shuman et al., 2020). In tandem, Van den Bos (2018) has argued that radical ideas and actions are not necessarily anti-social or a bad thing but can give rise to positive change (e.g., universal suffrage). This thesis adopts the definition of radicalism provided by Capelos et al. (2017) that radicalism is associated with a desire for swift change that is not inherently violent.

In line with this notion, what is called "radical" is a matter of context. This will vary in terms of place and time. For example, democratic ideals may be unquestionable today, but were "radical" before the 18th century when most people would consider democracy the worst form of government (Burgess, 2007). In this sense, categorising an individual, group, intention or behaviour as 'radical' or 'radicalised' is not a politically neutral activity but rather defined from a medley of context and ideological dynamics among actors at a given point in time. This means that a spatio-temporal component along with psychosocial factors determine the definitions of these dynamic concepts. As such, *radical endorsement* is used in this thesis to describe a legal act of support for a specific form of political action that i) aims for swift change against the status quo (non-normative), ii) the direction of change is towards the new against the old, iii) has complex psychological properties that may or may not lead to actual action (Capelos et al., 2017), when these components are salient in a given socio-political situation at a

given of time. By contrast, *reactionist endorsement* is used in this thesis to reflect a legal act of support for a specific form of political action that aims for change against the status quo. However, the direction of change is towards the old rather than the new.

This definition of radicalism and radical endorsement differs from activism. According to Moskalenko and McCauley (2008), *activism* is about engaging in political action that is legal and non-violent contrary to radicalism, which is illegal and violent. In this way, the authors perceived radicalism as an extreme form of activism for social change. Indeed, both activism and radicalism are associated with a desire for change. However, the direction of this change for activism is not always specified. Here, we agree with Capelos et al. (2017) that the difference between activism and radicalism is not to be determined in terms of the nature of the intended or actual behaviour (whether legal, illegal or violent), but rather in relation to the specific act for swift change, the element of urgency and the consequences of this act. Activism is seen as a political style that promotes normative action for social change but does not necessarily reflect a desire for swift change. For example, in response to the financial crisis in Greece in 2011, protesting in many cities against the financial crisis was an activist act. Blocking the road tolls by protesting and demanding open tolls for all citizens due to the increase in prices (the "We don't pay" movement, (https://www.theguardian.com/world/2011/jul/31/greece-debt-crisis-anti-austerity) was a radical act. Although both were legal, the former reflected collective action for social change, but there was not a specified course of action to achieve a change even partially. The latter is considered a radical action since it supported a specific form of action (not paying for the road toll) that was against the status quo (paying road toll tickets is normative), aiming to promote equal financial relief for everyone. In a similar vein, *activist intention* is the intention to donate money to an organisation that supports

privacy protection and awareness, which differs from a *radical intention* to donate to hacktivist groups (which may or may not be associated with violence, see Chapter 2). This conceptual distinction was adopted for the behavioural measurements of this thesis.

Moreover, a distinction needs to be made between radicalism and terrorism. . *Terrorism* is an extreme form of radicalisation (Moskalenko & McCauley, 2008) that adopts the use of illegal forces, threats, and extreme violence to intimidate or coerce governments and civilians due to political motives (Loza, 2007). A radical act or intention differs from a terrorist in that it does not aim to intimidate by using violence. This difference is prevalent in *terrorist and radical rhetoric*, the narratives used by terrorist and radical groups to exert influence.

Terrorist rhetoric constitutes a complex social threat that includes both personal and collective elements (Fritsche et al., 2011; Fritsche & Fischer, 2009). Personal threats impede the satisfaction of individuals' personal needs and goals, whereas collective threats are threats against the group they belong to. In this way, terrorist rhetoric creates an internal tension between people's need for existential security and the maintenance of fundamental democratic values (Canetti-Nisim et al., 2009). Correspondingly, the intergroup threat theory (ITT, Stephan et al., 2009) distinguishes between realistic and symbolic threats. *Realistic threats* are defined as the real and perceived threats against people's economic, material, physical well-being, and safety (Stephan & Stephan, 2000), whereas *symbolic threats* are referred to threats against the ingroup's moral and belief systems and their worldview (Duckitt, 2001; Stephan et al., 2002). Symbolic and realistic threats have been extensively examined to predict negative attitudes toward the outgroup (e.g., Berrenberg et al., 2002; Sidanius et al., 1992; Stephan et al., 1998). The outcomes of these negative attitudes involve

ethnocentrism, intolerance, hatred, and dehumanisation of the outgroup (Skitka et al., 2004), as well as harassment, retaliation, sabotage, and warfare (Stephan et al., 2009). Thus, this thesis examines the influence of realistic and symbolic threats derived from terrorist rhetoric, which are different from the influence of a radical rhetoric aiming for swift change.

That is not to say that radical rhetoric does not include symbolic threats. While realistic threats are strictly defined as threats against people's existence and, therefore, more likely to be found in terrorist rhetoric where the use of violence is embedded, symbolic threats allow multiple meanings across different audiences due to their inherent ideological component. *Ideologies* are social constructions aiming to establish expectations and prompt action (Matusitz, 2015). They usually involve symbolic emotions experienced by individuals as a result of their membership in a specific group usually vis a vis another group (Matusitz, 2015). For example, Halfmann (2003) defined terrorist attacks as symbolic acts of violence against powerful enemy symbols to expose the enemy's weakness and manipulate people's political behaviour (Tuman, 2009). In this way, symbolic threats can become a useful influence by making people reject one ideological reality to accept another. The use of symbolic and rigid narratives (Hafez & Mullins, 2015), challenging the status quo, the rejection of political practices and intolerance of ambiguity are commonalities between terrorist and radical narratives (McClosky & Chong, 1985). However, radical groups tend to adopt a belief system where political action is not violence-oriented and violence is not explicitly justifiable (Richards, 2014). Investigating context systems that account for these differences in rhetoric, ideological references, intentions and actions may provide a better understanding of how different context categories come together to promote radical

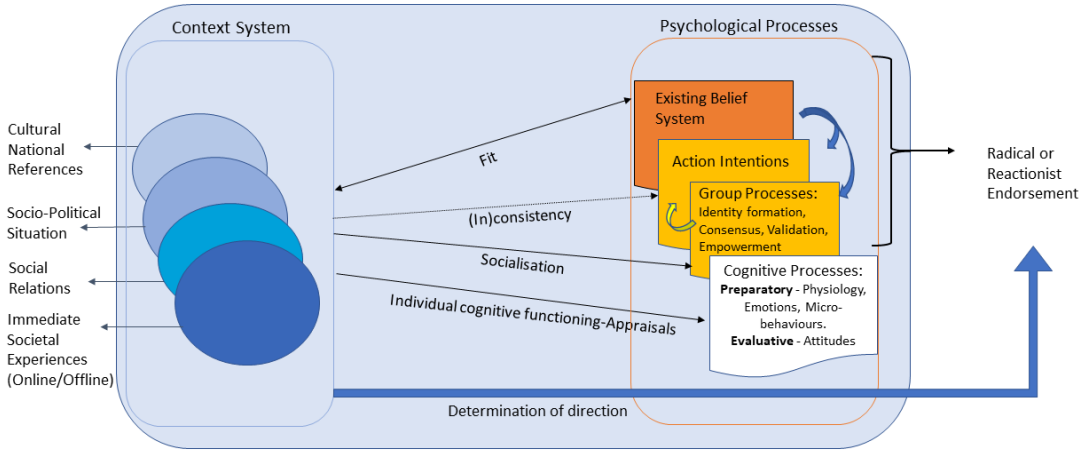
endorsements of swift change for progress or reactionist endorsements for returning to the way things used to be in the long past.

2. Overview of the Proposed Framework

Figure 1 presents the conceptual framework that is proposed to guide the investigation of radical endorsement.

Figure 1

Conceptual Framework of Context Interdependency on Radical Endorsement



Note. Different classes in psychological processes do not imply an ordering in the way psychological processes unfold. Although it is reasonable to assume that the psychological class of physio-cognitive processes precedes group-level processes, this framework follows a holistic perspective by focusing on the processes that are expected to be involved in radical endorsements rather than the order of their occurrence.

The model in Figure 1 adopts an interactive approach, where radical endorsements are hypothesised to be the outcome of an immediate context category that comprises an individual's online/offline experience of a societal practice in relation to the socio-political situation which is salient at the time, and national cultural references.

Instead of separating these into levels, we treat them as a multi-layered system within which the individual is embedded followed by an opportunistic exposure to radical rhetoric. That is, we accounted for the possibility of online exposure to one or more existing radical alternatives to examine how this *vicarious interaction*- observing other's narratives without directly communicating with them- affects radical endorsements. Second, we explored how physio-cognitive and group processes develop from within this interdependency to elicit radical endorsements. In this way, we use the behavioural outcome as a proxy of the effect of context interdependency on radicalisation.

Context interdependency occurs when the co-presence of context categories (immediate societal experience, socio-political situation, national culture) creates a sphere of mutual influence on behaviour. The co-presence is psychological rather than spatiotemporal. The immediate societal experience comprises psychological interpretations that are influenced by the prevailing socio-political situations, which embody national cultural constructs. These interpretations are associated with individuals' worldviews, the social appropriateness of their responses, and group dynamics (Howarth et al., 2013). In this way, context interdependency derives from the fact that changing one context category can change the whole context system and as a result the subsequent behaviour. For example, Study 3 (Chapter 3) expected that in the socio-political context of Brexit (socio-political situation), an immediate experience of being excluded from the national group combined with exposure to radical rhetoric for Brexit (immediate societal experiences) may trigger online support for a reactionist campaign. Replacing social exclusion with inclusion is expected to introduce a new context system associated with different group dynamics, which may lead to support for a different campaign (see Chapter 3).

This example implies that for context categories to be interdependent, they need to be relevant to each other. Indeed, Koudenburg et al. (2019) suggested that the integration of relevant socio-political contexts, group dynamics and individual experiences is needed to understand how people develop polarised or radicalised behaviours towards socio-political situations, such as immigration. In this case, the interpretation of context categories is associated with the role of others. Actions of others are a crucial aspect of the immediate experience because they can reinforce the societal influence on individual behaviour or promote divergent views (Gillespie & Cornish, 2010a). Consequently, the (psychological) presence of others can contest context categories, which may affect the direction of the behavioural change.

Study 2 of Chapter 2 examined the influence of a context system in a similar way. It investigated how exposure to institutional privacy violations, combined with vicarious interaction relative to privacy protection, influences engagement with a pro-radical forum that aimed for action against these violations cross-nationally. Studies 3 to 5 of Chapter 3 followed a similar approach where i) immediate societal experiences of inclusion in or exclusion from the national group were placed within a socio-political situation of national interest (e.g., Brexit, climate change, European election vote), ii) they were combined with radical narratives in response to these situations, and iii) subsequently drove support for relevant radical campaigns.

On the other hand, the degree of relevance between context categories may vary. Since the influence capacity of a context system is linked with psychological interpretations, context categories that differ in their subject may be relevant in relation to the mental interpretations they elicit. Pre-existing representations, previous experiences, and memory may play a role in these different interpretations (Stark et al., 2018). Research on implementation science has suggested that two or more seemingly

irrelevant contextual categories may combine to create powerful effects, or potentially relevant contextual categories may combine to generate weak effects (Nilsen & Bernhardsson, 2019). Accordingly, conflict elaboration theory (Moscovici, 1981) suggests that an influence attempt towards a specific environmental issue may be indirectly successful by driving attitudinal and behavioural changes towards another environmental issue (Perez & Mugny, 1996). The cyberspace can further question the boundaries between context categories and their perceived relevance. Study 1 (Chapter 2) and Study 1 (Chapter 3) examined the possibility that when seemingly irrelevant context categories are combined, they may drive compliance with societal expectations and radical preferences, respectively. Study 1 (Chapter 2) investigated the effect of authority surveillance on a University campus and exposure to terrorist rhetoric on behaviour. Study 1 (Chapter 3) investigated the effect of social inclusion and exclusion in a student group in relation to a hate speech incident and exposure to terrorist rhetoric. While these context categories seem irrelevant, they may share common mental representations as authority surveillance has increased due to terrorist threat (Bloss, 2007), and hate speech incidents are associated with terrorist rhetoric (Piazza, 2020). Since context variation is inherent to the proposed framework, it allows the examination of context categories with different degrees of (ir)relevance.

As shown in Figure 1, this framework consists of three main components: the context system, the psychological processes, and the radical outcome. The arrows between the context system and psychological processes depict the mechanisms that transform contextual influences into psychological processes to radical endorsement. The context system encompasses the categories (depicted with blue circles) that were previously identified when reviewing the core psychosocial models of radicalisation (Section 3). According to this framework, radicalised behaviours can be the outcome of

immediate context categories that involve an individual's online/offline experience of a societal practice in relation to the socio-political situation, which is salient at the time, and national cultural references. This is a multi-layered system where individuals are embedded, and psychological concepts are inextricably linked to the contexts in which they appear (Yee & Thompson-Shill, 2016).

This framework emphasises the social origins of a radical behaviour rather than its purely psychological origins. Although psychological processes are necessary for a radical transition and the context provides foundational components for this transition, the framework supports the notion that the contextualisation of these processes precedes. Psychological processes vary as a function of contexts and contexts provide scope and meaning to psychological processes that regulate behaviours (Moscovici, 1981). As such, psychological processes develop within a context system (reflected with the blue background of the model) that predicts *what kind* of behaviour will be endorsed, whilst psychological processes determine *how* it will be endorsed.

The context system initiates the psychological processes for successful influence. Different classes of psychological processing are represented in Figure 1 with different square boxes. Previous research has shown that in order for people to start engaging in a radical influence attempt, they need to be exposed to radical rhetoric (Bal & Van den Bos, 2017). In this sense, exposure to radical rhetoric is considered to be an immediate societal experience. This radical rhetoric needs to aim to solve a perceived/experienced injustice (Bal & Van den Bos, 2017), satisfy specific psychological needs (Doosje et al., 2016), and to be associated with individual's pre-existing belief system or self-defining identities (van Stekelenburg & Klandermans, 2007). If none of these assumptions is satisfied, an individual is unlikely to either engage in an influence attempt or be influenced by it. When combined with other

societal experiences within a socio-political situation, radical rhetoric creates appraisals for the radical group's identity and provides a foundation for an inter- or intra-group distinction (represented by the social relations component). Although the radical identity emerges from immediate societal experiences, the socio-political situation influences how this identity is understood, and, thus, what action needs to be taken.

Psychological processes include a pre-existing belief system, action intentions, group processes and physio-cognitive processes, which represent the different classes of psychological functioning that regulate human behaviour. Given that the influence capacity of a context system is associated with an individual's pre-existing belief system (van Stekelenburg & Klandermans, 2007), the first arrow represents the mechanism of appraising whether the radical group's rhetoric in relation to a socio-political matter fits within one's belief system. Consistency between one's belief system and the context categories is likely to drive a radical endorsement of the same (ideological) direction. Inconsistency between one's belief system and the context categories is less likely to drive similar outcomes. This belief system is a system of collective meaning, shared beliefs and values that individuals hold, such as anti-egalitarianism, system justification, and democratic governance (Moscovici, 1981). These beliefs emerge from everyday experiences, a variety of socio-political situations, and interpersonal or intergroup communication (Wagner & Hayes, 2005). This means the context system shapes belief systems. In parallel, this belief system constrains how relations within the system are interpreted. This is because individuals do not operate in a vacuum, but with perceptions and convictions about the world. As such, an individual's belief system absorbs individual qualities, organises social relationships (Staerklé, 2009), and guides intentions and behaviours (Jost et al., 2009). This dynamic

relationship between a belief system and a context system is presented in Figure 1 with a bidirectional arrow.

This framework assumes consistency between intention and behaviour. According to the theory of planned behaviour (Ajzen, 1991), intentions are the most proximal determinant of future behaviour. Given this, if a context system drives behavioural preferences of a specific form, it should drive similar forms of action intentions. Gollwitzer (1993) argued that when the opportunity occurs or situational cues become salient, the intention to perform certain kinds of goal-directed behaviour increases the likelihood of this behaviour to be endorsed. Contextual influences drive intentions to reach a goal, which then drives the behaviour related to this goal (Gollwitzer & Brandstätter, 1997). Yet, intentions are not always transformed into behaviour (Webb & Sheeran, 2006). McCauley and Moskalenko (2011) suggested that radicalisation of opinion does not necessarily lead to radicalisation of action. This framework examines whether a context system drives action intentions and behaviour in a similar direction but further investigates the processes that may lead to different intentions and their relationship with behaviour.

When a radical rhetoric along with the other context categories satisfies basic psychological needs, provides a conflict resolution, or is in line with one's belief system, this "matching" may prompt processes of constructing and re-constructing identities. By triggering certain forms of group processes, the context system provides the foundation for either adhering to existing radical groups or adopting a new shared identity between radicals and non-radicals. This links to changes in the direction of action intentions (represented by a yellow arrow in Figure 1) and radical endorsement (e.g., Smith et al., 2020). The development of these group dynamics is associated with processes of consensualisation and validation (e.g., Smith et al., 2015), and identity

fusion (Swann et al., 2009), respectively. While these processes will be discussed in more detail in the next section, the transition from context components to group processes is achieved though *socialisation* (Thomas et al., 2022). This mechanism is represented in Figure 1 with the third arrow that links the context system with group processes. Socialisation reflects a process of social interaction where group members communicate with each other, agree, challenge, and negotiate ideas. This can be online or offline. Through social interaction, group members give meaning to a challenging situation (Reynolds et al., 2010). Especially in online settings, individuals tend to bring in offline experiences to communicate and become a group with like-minded others or use social interaction to affirm their system-rejecting ideological stance (Joinson & McGinn, 2015). The context system has the capacity or affordances (especially the cyberspace) to facilitate socialisation as a transformative mechanism, even when social interaction is not direct but in the form of videos or news media platforms (vicarious interaction, Smith et al., 2020). As an enabling mechanism for radical endorsement, social interaction is further discussed in Section 4.

The last class of psychological processes includes physiological and cognitive processes prompted by the context system. Whereas the previous class is associated with collective or group-level processes, this class is associated with individual differences and cognitive processing. Physiological processes, such as heart rates, and cognitive processes, such as vision, are sensory activities, automatic in nature, that serve as a preparatory mechanism to social influence that can be carried over from one context to the next. Upon exposure to societal (online/offline) experiences, the immediate response is physiological. For example, it can be an automatic increase or decrease in heart rates (Seery, 2013). In that sense, bio-signals can indicate the exposure experience by means of societal practice. In parallel, the individual activates cognitive

processes, such as information processing about the source of influence and the socio-political situation, and emotional appraisals. Automatic processes *prepare* the individual to engage with or reject an influence attempt.

When these automatic processes are activated from societal practices experienced in (cyber)-physical spaces, they spread to their related psychological concepts (Landau et al., 2010). This means automatic sensory responses have emotional meaning and may affect perceptions and attitudes. Indeed, automatic cognitive processes can activate representations of different categories of people, which may influence decision-making about these people (Bargh et al., 2012). Thus, cognitive processes entail an *evaluative* mechanism that permits the formation of attitudes towards others. In the proposed framework, a context system sets all these different processes into motion suggesting a "full body" experience. Hence, the context system initiates processes of physiological adaptability, appraisals and information processing that facilitate engagement with a radical influence attempt and provide the foundation for the relationship between group processes and context system to influence radicalised behaviours.

To summarise the model depicted in Figure 1, when an individual is exposed to a societal practice, such as a surveillance practice, social inclusion/exclusion (online or offline), this experience is placed within a broader socio-political context that defines its interpretation along with national culture inferences. Instead of examining these by separating them into levels, we treat them as a multi-layered system within which opportunistic exposure to radical rhetoric is likely to occur. Via vicarious interactions, people are likely to be exposed to one or more existing radical alternatives, which provides the basis for the development of the psychological processes, especially those associated with the (perceived) actions of (dis)similar others. Then, these group

processes and one's belief system determine the direction of the behavioural outcome (e.g., Michinov et al., 2004). A step-by-step account of this framework and the expected outcome in each step is presented in Table 2.

Table 2

A Step-by-step Presentation of the Conceptual Framework

Step	Process	Expected Outcome
1) Context Interdependency	When an individual experiences a societal practice (online/offline), this is placed within the salient socio-political situation and filtered by cultural underpinnings.	• Individual may become susceptible to influence or search for audience to communicate this experience.
Criteria Satisfaction: Exposure to Different Types of Radical/Extremist Rhetoric		
2) Induction of Radical or Terrorist Message	Online media and their features permit exposure to radical or terrorist messages that call for support for a specific action.	• The individual may or may not engage with radical support/action.
3) Automatic Adaptation to Influence Attempt	Physiological and socio-cognitive activity in response to the immediate experiences.	• Increased/decreased heart rates, cognitive biases, feelings.
4) Elaboration on Experience and Message	Process of appraisal: • Consistency between radical rhetoric and individual's belief system • Emotional reaction to the content of the message	• The radical group gains attention because of positive feelings or a moral obligation to enact.
Criteria Satisfaction: Address the Perceived Injustice		
5) Identity Construction or Adherence	Processes of a shared identity: • Social validation • Internalisation/Consensus Processes of adherence: • Identity fusion	• Adoption of a radical identity.
6) Action Intention & Behaviour	Identity construction or adherence triggers action intentions.	• Radical endorsement.
Criterion Dissatisfaction:	System justification.	• Inaction/No radical endorsement.

Note. These processes have been suggested based on existing research on these different classes of processing. Our aim is to explore how context interdependency affect these processes and subsequent behaviours.

3. The Evolution of the Role of Context in Radicalisation Research

In early models of radicalisation, context has been used to frame a series of steps that describe how members of Islamic organizations mobilise to perpetrate terrorist acts, such as in Moghaddam's (2005) staircase model. Although these models recognise the role of context by placing aspects of injustice as drivers of radicalisation and transition to radicalism, their focus is on individual vulnerability, leaving the effect of context underexplored. In the following years, the rise of extreme right-wing groups, single-issue radical groups, and online and offline radical movements, led to conceptual models that describe how radicalised individuals adhere to specific groups and endorse specific acts of political violence or terrorism, which fails to test for the validity of cause-effect relations to radicalisation (Hafez & Mullins, 2015). Thus, the influence of context interdependency on early stages of radicalisation had been neglected.

At the same time, Wiktorowicz's (2005) research was the first to identify the functional role of context as an instigator of radical endorsement. His research on social movement identified four stages in the radicalisation process and had a similar foundation with the staircase model, such that radicalisation is a process driven by group-based grievances. In this body of research, the salient socio-political context creates a cognitive opening to new ideas that are facilitated by social interactions with activists and leads to the acceptance and adoption of the new ideology that becomes a rational choice to enact.

Building on this research, personal factors, social, political, and organizational contexts became relevant when describing the process of engaging with terrorist groups (Taylor & Horgan, 2006). Personal factors include changes in the immediate environment and personal responses to these changes. Social, political, and

organizational changes involve the broader political context and terrorist movement. Indeed, this body of research showed changes in the immediate environment to be more influential at initial stages of radicalisation (Taylor & Horgan, 2006). Yet, the impact of the cultural context remained under-investigated within this body of work. Silber and Bhatt (2007) investigated Jihadist plots in the US, Europe, Canada and Australia, and their research corroborated that contextual factors contributed to a cognitive opening to influence, self-identification with the group, and adoption of its ideology (indoctrination). However, they did not examine changes in these processes in relation to cultural differences. Despite this research placing context in the centre of radicalisation processes, it was still lacking an investigation of the ways (online/offline) societal, socio-political, and cultural contexts in combination affect radical endorsements.

This shift towards seeing context as an instigator of radical support introduced new conceptualisations of radicalisation that focused on changes in beliefs, feelings, and behaviour in the direction of increased support for a political conflict that involves individuals, groups, societies, and states (Feddes, et al., 2020; McCauley & Moskalenko, 2010, 2011, 2017a). Experiences of social exclusion and discrimination (Coolsaet, 2016; Feddes et al., 2020; McCauley, 2018; Piazza, 2006), relative deprivation (Doosje et al., 2013), grievances (Ferguson & McAuley, 2020; Moghaddam, 2005), and injustice (Bal & Van den Bos, 2017; Blackwood et al., 2013; Doosje et al., 2013; Ferguson & McAuley, 2020; Horgan, 2008; Silke, 2008) were identified as contextual factors that drive radicalised behaviours. Accordingly, community support for radical groups (Burgess et al., 2007), authority confrontation (e.g., Ward et al., 2014), online exposure to propaganda (Feddes et al., 2020), and online and offline social interaction (e.g., Smith et al.,2015; Thomas et al., 2014) have

been evidenced as antecedent factors to radicalisation. On a political level, foreign policy (McCauley, 2018), government action (Crenshaw, 1981) and government policies, such as Prevent policy by the UK government, treated specific communities in the aggregate "at risk" (Lakhani, 2012; Vermeulen & Bovenkerk, 2012), have been found to contribute to radicalisation. An increase in the available data from different contexts and sources reinforced the realisation that multiple contexts are involved in radicalisation, and that these contexts do not solely reflect where an action takes place or emerges, but also shape radicalised actions directly.

What remains unclear is how these contextual influences (refer to here as context categories) interact to shape behaviour. For example, how social exclusionary experiences (*societal category*) affect radical endorsements (*outcome behaviour*) in relation to different government policies (*socio-political category*)? Are there differences in radical endorsement due to national cultural variation (*national culture category*)? The proposed framework suggests that specifying and testing for different context category combinations provides a better understanding of how different influence processes (e.g., physio-cognitive reactivity, identification with the radical group) develop and the effect of this on radical endorsements.

This typology of context categories has derived from a review of the core models of radicalisation that dominated social psychological research in this field from 2003 to 2020. This timeframe has been chosen because much of the research on radicalisation followed the attacks of the 9/11 and further increased in the following years due to terrorist acts (especially homegrown) in Western societies, such as in Europe (e.g., Spain, 2004, 2017; the UK, 2005, 2017; Norway, 2011; France, 2015), the USA (Massachusetts, 2013), Canada (e.g., Ottawa, 2014), and Australia (e.g., Melbourne, 2014). We included original models that i) entail both psychological and

social components in their theorising for radicalisation, ii) determine how radicalisation is conceptualised and examined in psychological research over the years. We excluded pre-existing theories that were subsequently adjusted to study radicalisation and terrorism, such as the terror management theory (Greenberg et al., 1986). In other words, this review was not intended to be exhaustive. Instead, it focused on those models that have been largely cited and discussed in social psychological reviews of radicalisation (e.g., Feddes et al., 2020; van den Bos, 2018). We started with "process" models of radicalisation (e.g., Moghaddam, 2005) and shifted to motivational models (Feddes et al., 2015) and group dynamics (Smith et al., 2020). This data is presented in Table 3.

Table 3

Overview of the radicalisation models relevant to the context category typology

Primary Citation	Radicalisation Model	Contextual Factors	Contexts
Borum (2003)	Four Stage Process of Ideological Development	• Economic: Poverty, unemployment, poor living conditions-sense of injustice about economic deprivation. • Social: Government-imposed restrictions on individual freedoms, lack of order or morality. The information individuals have been exposed to and their assumptions. • Life experiences. • Ideology.	Social and economic deprivation
Wiktorowicz (2005)	Model of Joining Extremist Groups/Social Movement	• Personal life events: Loss of job, blocked mobility, death in the family or victimisation by crime, religious seeking. • Social or Cultural: Sense of cultural weakness, racism, humiliation. • Political: Repression, torture, political discrimination. • Socialisation with members of extremist groups.	Individual and social (particular events and situations)
Moghaddam (2005)	Staircase Model to Terrorism	• Perceived injustice due to political and economic conditions-feelings of relative deprivation • Personal or collective identity threats. • Internationalisation of trade and mass communications. • Societal anxiety that cultural and linguistic systems are being swept away. • "Us" versus "Them"	Wider context of internationalisation of trade, cross-national borders, cultural context, global context

Table 3 (*Continue*)

Primary Citation	Radicalisation Model	Contextual Factors	Contexts
Taylor & Horgan (2006)	A Conceptual Framework for Addressing Psychological Process in the Development of the Terrorist	• Personal- psychological and environmental context of individual experiences-immediate experiences: (Perceived) Negative contact with security forces, peer pressure, family, early experiences, dissatisfaction with current persona, isolation. • Socialisation • Immediate political or ideological context	Personal contexts, social/political/ organisational context- refers to individual's external social context concerned with political expression and ideology, terrorist movement
Silber & Bhatt (2007)	NYPD Radicalisation Model	• Economic: Losing a job, blocked mobility. • Social: Alienation, discrimination, racism – real or perceived. • Political: International conflicts. • Personal: Death in the close family.	N/A
Precht (2007)	Model of Radicalisation Process	• Background: Identity crisis, personal trauma (childhood or war experiences), racism, experience of discrimination and relative deprivation, experiences of social exclusion, alienation, social dissatisfaction, being unemployed. • Trigger: Militant ideology, foreign policy and culture, the group, spiritual leader. • Opportunity: Meeting places, the Internet and satellite channels.	N/A

Table 3 (*Continue*)

Primary Citation	Radicalisation Model	Contextual Factors	Contexts
Sageman (2008)	Four Prongs to Radicalisation	• Moral outrage: A reaction to perceived major moral violations, like killings, rapes, or local police actions. • Personal experience: Discrimination, unemployment. • Friends, relatives. • Differences in welfare policy. • Mobilisation through networks.	Context relative to cognition

McCauley & Moskalenko (2008, 2011, 2017; also McCauley, 2018, McCauley & Segal, 2009)	Two Pyramid Model of Radicalisation	• Individual:
		  ○ Personal victimisation.
		  ○ Political grievance: Response to political trends or events.
		  ○ Recruiting from the network of friends, lovers, and family.
		• Group:
		  ○ Social interaction
		  ○ Culturally determined arguments
		  ○ Rewards of group membership: Status, security.
		  ○ Group processes: group consensus, outgroup threat, withing group competition.
		  ○ Competition with state power
		• Mass:
		  ○ Patriotism and nationalism, war, opposition politics.
		  ○ Social marginalization and political exclusion.
		  ○ Dissatisfaction with government due to residential segregation, educational and occupational discrimination.
		  ○ Foreign Policy.
			Political context

Table 3 (*Continue*)

Primary Citation	Radicalisation Model	Contextual Factors	Contexts
Kruglanski et al. (2014)	The Quest for Significance Model of Radicalisation	• Individually based significance loss due to general, economic, social, and political conditions, stigma, failure, loss, humiliation, social interaction-Internet, friends, school, co-workers. • Socially based significance loss: Political and/or economic instability (anomie), collective discrimination, collective humiliation. • Ideology (framing historical events).	Societal context, different temporal orders, personality, culture or situational factors
Hafez & Mullins (2015)	The Radicalisation Puzzle	• Individual grievance: Economic marginalisation, cultural alienation, victimisation, disagreements regarding foreign policies, personal disaffection, loss, crisis. • Networks: Pre-existing kinship and friendship between ordinary individuals and radicals. • Support structures: The Internet, social media, prisons. • Securitisation, foreign policies.	N/A
Feddes et al. (2015)	Three-level Model to Radicalisation	• Personal: Identity, relative deprivation, feelings of exclusion, feelings of humiliation, direct experiences with discrimination, racism, and exclusion, confrontation with death, problems at home, loss of a job, dropping out of school, confrontations with authorities. • Social: Social networks (friends and people that are important to individuals), being exposed to propaganda. • National: National conflicts, government policies.	N/A
Bal & van den Bos (2017)	System Rejection Model of Radicalisation	• Perceptions and experiences of individual or group unfair treatment. • Social polarisation. • Availability of a radical group.	Societal systems e.g., law, government, education

Table 3 (*Continue*)

Primary Citation	Radicalisation Model	Contextual Factors	Contexts

Smith et al. (2020)	Schematic Model of Social Psychological Processes of Radicalisation	• Distal factors (before the start of group socialisation):
		  ○ Personal Risk Factors: Marginalisation, social isolation, mental health, family breakdown, drug addiction, awareness of salient intergroup/political context, perceptions of grievance (discrimination, humiliation), normative conflict.
		• Proximal Factors:
		  ○ Presence of likeminded others, absence of deterrents, freedom of speech.
		• Illegitimate treatment by state or authority, violence by outgroup, human rights violations.
			Intergroup context and Intragroup context (social interaction), socio-political context

Notes. Column "Contexts" refers to those contexts that have been explicitly mentioned in the papers.

The analytic focus was on identifying themes across the data organised by an underlying central idea. For this, we collected all contextual factors that are discussed in the radicalisation models and context references explicitly made in the model description, which are presented in Table 3. To create the typology, each publication was read thoroughly, and the contextual factors found were gathered, compared and categorised into common themes. This means that the themes presented here do not necessarily correspond with the distinctions and categories presented in the models, but rather with patterns of underlying shared meaning relative to the conceptualisation of context as a system. While not all models emphasise the same factors and may disagree on the linearity or other characteristics of the process, there is consensus on the significance of certain factors, such as experiences of relative deprivation. However, this does not mean that these factors are conceptualised on the same level of analysis across models. For example, consequences of government policies can be personally experienced (McCauley & Moskalenko, 2008) or reported as a factor on the national level (Feddes et al., 2015).

In reviewing the summary of the contextual factors, we identified two underlying themes that can afford these conceptual discrepancies: (i) whether a contextual factor is reported to be personally experienced or perceived to affect important aspects of self-definition, and (ii) whether it refers to the "surroundings" of a contextual experience. The first theme, referred to as *immediate societal experiences*, is associated with those societal practices, life events, and targeted policies that have been personally experienced or perceived to have direct consequences for one's personal or social identity. That is, this category includes not only individual life events, such as losing a job, but also group-based experiences, such as discrimination and social exclusion. In other words, this theme entails motivating factors for radicalisation, either

experienced or perceived. “Immediate” here implies a proximal dimension. Given that most of these factors have been identified and examined a posteriori based on case studies with already radicalised individuals who may or may not have committed violent actions, it is hard to determine when a situation was experienced or perceived and for how long. However, all models ascribe value to the temporal dimension of the experience and mention that even though they may have happened in the long past, these experiences can be brought back up in the present via networks and communication. Thus, this context category encompasses in an immediate sense the actors involved, psychosocial processes, and exposure to radical ideological voices.

The second theme is about *situating* these experiences. Socio-political phenomena (including political decisions for national matters) that affect larger parts of a society than a specific group or community or even affect the society as a whole are represented by this theme, named *socio-political situations*. This category includes references to social and political matters, including competition with state power, foreign policy, economic and political stability, and social polarisation. This category frames societal experiences. It provides a surrounding where immediate societal experiences are inhabited. This category integrates all contextual factors that frame the relationships between immediate societal experiences and actors (individuals or groups), making these relationships' social and political components explicit. Although the models in Table 3 tend to distinguish between social and political contexts to represent something broader than a personal life event or experience, it is not clear what determines this distinction. This is different from saying that contextual factors described as social in the models are apolitical or that political factors have no social roots. Case studies and empirical evidence from which these models originate make this

connection explicit (e.g., McCauley & Moskalenko, 2011; van den Bos, 2018). Thus, it was decided to include both social and political contexts in the same category.

In reviewing the radicalisation models, we identified another theme- that of *national cultural references.* The third theme is extensively discussed but rarely explicitly mentioned as a concrete contextual factor. Only Feddes et al. (2015) explicitly refer to this context category in their conceptual model. Yet, most of these models, especially those that provided a conceptualisation of radicalisation to explain homegrown terrorism have associated national culture with radicalisation (e.g., Hafez & Mullins, 2015; Kruglanski et al., 2014). This is in the form of cross-country comparisons (Moghaddam, 2005) and national identity implications and influences (e.g., Kruglanski et al., 2014). McCauley and Moskalenko (2008) showed that undermining the national identity of certain groups, reinforced the idea that they are inherently different and detached them from their national group. In this way, national identity can encourage intergroup conflicts leading to radicalised responses in Northern Ireland and the US (McCauley & Moskalenko, 2011). This context category is distinctive from the previous one because it encompasses all those upper-level values, beliefs, traditions, and historical foundations that constitute a national identity.

Group dynamics are embedded in the radicalisation models presented in Table 3. Moghaddam (2005) argued that an "us versus them" way of thinking is a critical element of the radicalisation process. Indeed, many of the presented contextual factors result from intergroup conflicts reflecting a psychological definition of a *social context* based on group memberships (Smith et al., 2020). The context category typology adopts social context as a distinctive category that is qualitatively different from immediate societal experiences and the socio-political situation because it is directly associated with the relationship between groups of actors *per se* rather than the content of an

experience or institutional practice, respectively. Although the social context is categorised separately for analytical purposes, research on the radicalisation models has shown that group dynamics are integrated into the other context categories and obtain meaning from them.

In this way, group dynamics shape the processes that determine social influence. Kruglanski et al. (2014) suggested that group dynamics are the vehicle whereby the individual becomes familiar with a group's ideology. Smith et al. (2020) showed that a group identity shapes intragroup dynamics and facilitates influence by means of social interaction (online or offline). In this review, group identity and socialisation are key factors in determining how the radicalisation process advances. They collectivise experiences (Smith et al., 2020) and facilitate adherence with radical groups (Bal & van den Bos, 2017). That is to say, a distinction between "us versus them" provides a structure to the social context, whereas group processes relevant to these identities determine how a growing sense of collective meaning leads to action. Hence, social context, immediate societal experiences, socio-political situations and national references can be seen as motivating contexts. Group processes and social interaction can be seen as the *structural determinants*, namely the mechanisms that enable radical influence (McCauley & Moskalenko, 2011).

4. Physio-Cognitive and Group Processes to Radicalisation

The model that is most widely used for identifying social psychological mechanisms to radicalisation (and one of the most widely cited according to Ferguson and McAuley, 2020) is the Pyramid Model (McCauley & Moskalenko, 2008). This model proposes a distinction between *Individual mechanisms*, such as personal grievances; *Group-level mechanisms,* such as polarisation, perceived loss of group

status and power, intergroup and intragroup competition, and group isolation; and *Mass-level mechanisms* such as extreme emotional experiences relative to outgroup derogation and committing violence. The model suggested that Individual and Group mechanisms facilitate radicalisation of action, whereas Mass mechanisms lead to radicalisation of public opinion, and hence, they function as a means of social influence (Leuprecht et al., 2010; McCauley, 2013; McCauley & Moskalenko, 2014). McCauley and Moskalenko (2017) rejected universal models of radicalisation. Instead, they drew on theories of radicalisation, such as the social movement theory (Wiktorowicz, 2005), to identify the underlying processes associated with each mechanism level. For example, they mention that Individual and Group level mechanisms are associated with strong, negative emotions, such as anger, hate, fear, and structural conditions, such as one's socio-economic status.

Doosje et al. (2016) added to this previous research by providing empirical evidence on the fact that structural conditions and feelings of relative deprivation proposed by the Pyramid Model (McCauley & Moskalenko, 2008) are not sufficient to lead to radicalisation without motivational imbalance, namely an extreme urge to satisfy a psychological need (Kruglanski et al., 2017). Four psychological needs were identified: a need for positive identity and belonging, a need to restore justice, a need to pursue excitement, and a quest for significance (Feddes et al., 2020; Kruglanski et al., 2014). Those seeking to address an injustice were found to justify the use of violence (Doosje et al., 2013). When combined with perceived symbolic threats -threats to one's values and belief system (Stephan & Stephan, 2000) - the need for identity and the need for justice elicited support for violent organisations but no support for non-violent organisations (Feddes et al., 2020). Given this, the authors concluded that joining a radical group satisfies these needs. While the focal point of this previous research, both

on mechanisms and need satisfaction, was the generic process of radicalisation, much of it was associated with the threat posed by Jihadism. It is, therefore, proposed here that testing these mechanisms and needs in combination, across contexts, and in relation to different radical sources will allow us to explain radical outcomes by being sensitive to the complex interaction between these variables and the diverse ways this interaction drives the radicalisation of different people.

The rest of this section describes the physio-cognitive and group processes that are examined within this thesis. More specifically, I elaborate upon the physio-cognitive responses (including heart rate reactivity, emotional reactions, attention, and decision-making) that influence radical endorsement. I, then, outline the influence capacity of one's pre-existing belief system to determine radical endorsement and summarise the theoretical drivers of identity processes which informed the conceptual framework presented in Figure 1.

4.1. Physio-Cognitive Adaptation to Context

The first response to an immediate societal experience is physiological, which happens automatically, and shapes social behaviours to context demands. The serotonin transporter gene polymorphism (5-HTTLPR) has been linked to reactivity to social threat (Chang et al., 2016), such that it induces more discriminatory behaviours towards threatening outgroups (Cheon et al., 2014). Changes in testosterone have been associated with intergroup threats (Diekhof et al., 2014; Reimers & Diekhof, 2015), and changes in oxytocin are linked to aggressive reactions to outgroups (De Dreu et al., 2010). In addition to neurological reactions, research also reports cardiovascular changes. Racial discrimination has been shown to lead to lower Heart Rate Variability (Hill et al., 2017). Violation of beliefs on the fairness of the social system (Townsend et

al., 2010), social rejection (Mendes et al., 2008), as well as stereotype threat (Allen & Friedman, 2016) lead to changes in cardiovascular responses that increase feelings of threat. Indeed, appraisal theories of emotion posit that people's emotional states function as a combination of physiological changes and cognitive interpretations of their meaning based on a given context (e.g., Lazarus, 1991). Thus, physiological reactions triggered by context categories indicate the emotional experience of these context categories and regulate human adaptability to their influence.

The biopsychosocial model of challenge and threat (BPS, Blascovich, 2008a; Blascovich & Tomaka, 1996) posits that when people find themselves threatened by a specific societal experience, their heart rate increases and provides behavioural and cognitive flexibility to cope with this experience (Hildebrandt et al., 2016; Thayer & Lane, 2000, 2009). According to this model, threatening (or challenging) situations produce physiological, affective, and behavioural responses, whereby physiological responses are considered to be the manifestation of the psychological state of threat or challenge (Mendes et al., 2007). Physiological responses, especially heart rates, are a valuable index for assessing and predicting people's emotions in relation to situational cues or experiences (Kim et al., 2004; Verma & Tiwary, 2014). This suggests that emotion regulation can occur without conscious control (Bargh & Williams, 2007) and that priming situational cues or experiences can influence emotional reactivity, as shown by changes in heart rates. For example, participants primed with a goal to change showed decreased cardiovascular emotional reactivity on a stressful task, measured as a change in heart rates from baseline, compared to the control group (Williams et al., 2009). As such, physiological arousal and emotions that arise in a threatening situation usually have a functional meaning (Oatley & Johnson-Laird, 1987).

The functional meaning of physiological arousal is related to cognitive activation. Research showed a link between heart rates and prefrontal cortical activity involved in sustained attention and executive function (e.g., Elliot et al., 2011). Physiological arousal has been associated with increased attention to a specific task (Oatley & Johnson-Laird, 1987) or threat, which results in motor responses and behavioural change (Yiend & Mackintosh, 2005). While this evidence suggests that physiological responses are important tools to study cognitive functioning, such that the primacy of physiological responses can be assumed, it does not reject the capacity of perceptual experiences of threat to influence cognitive processes directly. Indeed, threat perceptions can affect information processing and subsequent behaviour (Bargh et al., 2012) and drive attentional biases (e.g., Gotlib et al., 2004). This thesis adopts a context perspective that supports the notion that physiological and cognitive responses vary as a function of the psychological states of threatening experiences (e.g., Klorman, 2000). In this way, it assumes a synergistic relation between physiological responses and cognitive processing without asserting the primacy of physiology or cognition (in line with Williams et al., 2003). People will be more physiologically aroused and display more cognitive processing due to a threatening situation, which, in combination, influence attitude formation and processes of context reappraisal.

Emotional states are associated with physiological responses to threatening situations and a process of appraisal of the persuasive message disseminated by radical groups. Exposure to a persuasive message evokes emotional reactions, such as joy or sadness, which are contagious in both online and offline environments (e.g., Kramer et al., 2014) and effective in social influence (Van Kleef et al., 2010). The functional perspective of emotions (Van Kleef, 2009) suggests that when individuals become recipients of the expression of emotion through the interaction of any type, they make

inferences (i.e., reversed appraisals) on the cause of that emotion (Hareli & Hess, 2010). If the emotional expression is considered appropriate for the proposed course of action, individuals adjust their behaviour accordingly, and social influence is achieved (Van Kleef et al., 2011). This is because emotions are relevant to a situation an individual might experience or in response to personally relevant events (Lazarus, 2001; Nabi, 1999). For example, a radical narrative that expresses anger due to injustice and proposes a specific course of action to resolve the injustice can motivate an individual to participate in this course of action when they share the same feelings of injustice (Iyer et al., 2007).

More specifically, research on emotional reactions to radical narratives has been dominated by the investigation of the influence capacity of negative feelings to motivate pro-radical action or action intentions (e.g., Becker et al., 2011). For example, radical intentions can be sparked by contempt (Tausch et al., 2011), disgust (O'Gorman, 2010), hate and humiliation (Lindner, 2001), while dehumanisation of the outgroup has been associated with collective violence (Staub, 1989). Yet, another body of research suggests that similar actions may be triggered by hope (Greenway et al., 2016), pride (Tausch & Becker, 2013) or may enable a sense of excitement and strength associated with the identity dynamics in a given societal context (Drury & Reicher, 2005). Selvanathan and Lickel (2019) found that anger for injustice and positive emotions for a protest facilitates participation in the protest. The conceptual framework proposed in this thesis adopts this functional perspective of emotion: feelings can be interconnected with physiological reactions to assess societal experiences and persuasive characteristics of radical rhetoric. This thesis extends this previous research by investigating how positive emotions interrelate with context interdependency and identity influences to promote radical endorsements.

4.2. Pre-existing Belief System and Radical Influence

While societal practices tend to affect physio-cognitive processes, an individual does not experience these practices in a vacuum. Instead, pre-existent perceptions and convictions give meaning to these societal experiences and support the endorsement of (radical) behaviour. According to the social representations theory (Moscovici, 1984, 1988), pre-existing representations affect subsequent representations, which are functional to our understanding of the social world. This happens through processes of objectification and anchoring. Objectification puts new information or situations into reality. Anchoring includes a cognitive component, where the new information or situation becomes embedded in pre-existing representations, and a social component, where social groups and their interaction gives meaning to the new representations (Moscovici, 2008). When these representations are not perceived as functioning properly, namely in accordance with the principles inhabited to them, new information regarding violations can reshape intentions and behaviours associated with them (Kadianaki & Gillespie, 2014).

This transformation of intentions and behaviours occurs due to the context. Flament (1994) argued that a social representation changes due to social practices. Following this, several social representation approaches emphasised the role of social and historical contexts, traditions, ideologies, and institutional practices in modifying representations, which may affect behaviour (Elcheroth et al., 2011). To evoke action for social change, interpretations and expectations of these representations must be communicated and contested in talk, text, and practice among individuals. This provides a shared understanding of reality and increases the chances of enactment. For example, scepticism for the legitimacy of the police was found to derive from a previous police-citizen experience (Jackson et al., 2013) and in turn, shaped law-breaking behaviours

through identification processes (Tyler, 2003). That said, the relationship between representations and behaviour is not necessarily causal or direct; social representations (and their embedded belief system) may determine and be determined by a behaviour (Roland-Lévy, 1996) or may affect intentions that encourage specific behaviours. Thus, cultural and socio-political contexts form social representations of institutional practices and their individual components (i.e., ideological beliefs) that may encourage or forestall radical endorsements depending on their (in)consistency with the proposed radical action.

As shown in Figure 1, the proposed framework conceptualises socio-political beliefs as an important component in psychological functioning. It expects a dynamic relationship between these beliefs and context interdependency, where socio-political beliefs influence how a context system is interpreted, and this context system shapes socio-political beliefs. Within this context system, exposure to a radical narrative induces new information or a different situation into reality (in line with objectification). This narrative may drive radical endorsements in combination with other societal experiences, group interactions (in line with anchoring) and broader socio-political situations. The direction of the radical endorsements is determined by the (in)consistency between an individuals' existing belief system and contextual influences and operationalised through group processes.

4.3. Group Processes to Radicalisation

As Figure 1 suggests, a significant factor alongside context categories is the interaction with context actors, the role of others in an influence attempt. Kelman (1961) showed that social influence arises from group interaction and persuasive communication in the form of compliance, identification, and internalisation.

Compliance occurs when an individual accepts influence from another individual or group or seeks to gain approval from the influencing agent. Identification occurs when an individual adopts behaviour derived from another person or a group because this behaviour is associated with a satisfying self-definition anchored in the relationship with this person or group and a sense of social belonging. Internalisation occurs when the induced actions are consistent with the individual's value system (Kelman, 1961, 1974). Research on minority influence has shown that a minority group can exert influence when it consistently supports an alternative viewpoint (Moscovici, 1980). The conversion theory (Moscovici, 1980) suggests that this alternative viewpoint induces a socio-cognitive conflict that is resolved with a partial or indirect acceptance of a minority's confrontational positions, when these positions are perceived to reflect the social reality. This acceptance is a form of validation of a minority's position (Forgas & Williams, 2001; Mugny & Papastamou, 1982). In this way, social validation can encourage identification with a new group (Smith et al., 2012).

Additional empirical evidence on the group processes that drive support for radical actions exists from research on collective action. Driven by participation in protests, collective actions have been initially defined as actions directed to improve a group's interests (Wright et al., 1990). Other definitions refer to collective actions as being actions of political solidarity (Becker, 2012a) or allyship (Louis et al., 2019). *Collective action* has been defined as any action undertaken by individuals or psychological group members to achieve group goals in a political context (van Zomeren, 2016, p. 105). Driven by the fact that different contexts may appeal to distinct dynamics to engage individuals in collective action and that this collective action can take different forms, Thomas et al. (2022) defined collective actions as any actions that either challenge or aims to support the status quo. Similarly, Wright et al. (1990)

distinguished between normative and non-normative forms of action. Normative collective actions include any actions that conform to the norms of the dominant social system, such as peaceful protests. Non-normative collective actions include actions that violate these norms. Non-normative actions are frequently endorsed to oppose the dominant societal norms and values, such as civil disobedience (Martin, 1986). Thus, the terms "non-normative" and "radical" tended to be used interchangeably in social psychological research on collective action. This is in line with the definitional approach adopted in this thesis. As discussed in Section 2, support for radical action was considered to be support for any action (e.g., by joining relevant forums in Chapter 2 or supporting campaign in Chapter 3) that was non-normative (at the time the study was conducted) and aimed for a swift change of the social system, such as getting the government in court (Chapter 3). By contrast, activist action is considered to be normative action about social change.

Among the variables that stand out as collective action predictors are injustice, identity, and efficacy. These variables were first proposed in Gamson's (1992) work on collective action frames. Since then, they have been developed and integrated into solid predictive models (e.g., Sturmer & Simon, 2004; van Zomeren et al., 2008; Tausch et al., 2011; van Stekelenburg & Klandermans, 2013; see Thomas et al., 2022 for a review of various models) leading to van Zomeren's et al. (2008) meta-analysis that injustice, social identity, and efficacy are key drivers of collective action. Together these variables constitute the *social identity model of collective action* (SIMCA; van Zomeren et al., 2008). This model predicted participation (or intention to participate) in normative and non-normative collective action in contexts where pre-existed identities became prevalent to promote action. It proposed that belonging to a specific social group predicts collective action intentions directly or indirectly through feelings of injustice

and the perceived efficacy of the group to collectively address this injustice (van Zomeren et al., 2008). In this case, a pre-existent social identity facilitates feelings of injustice when new policies or resource allocations affect this specific identity and provides a basis for group efficacy (Mummendey et al., 1999; Postmes et al., 1998; Smith & Spears, 1996; Tropp & Wright, 1999). When people's social identity is salient, and there is an intergroup comparison over incidental disadvantages, joining a collective action reflects an attempt to defend or protect violated values (Fattori et al., 2015; Kelly & Breinlinger, 1996; Mazzoni et al., 2015; van Stekelenburg et al., 2009; van Zomeren & Spears, 2009).

Further research showed that when this identity is associated with low pragmatic estimates of group success to achieve the collective goals (low efficacy), people tend to endorse non-normative collective actions or aggressive actions (van Zomeren et al., 2013). Non-normative actions reflect the rejection of the current status quo (Tausch et al., 2011). For example, intentions to engage with non-normative collective action were found when British Muslims were exposed to British foreign policy towards Muslim countries (Tausch et al., 2011). Non-normative action intentions can be sparked by extreme emotions, such as contempt (Tausch et al., 2011), disgust (O'Gorman, 2010), hate and humiliation (Lindner, 2001). Dehumanisation of the outgroup (Staub, 1989) and subjective feelings of relative deprivation (Obaidi et al., 2019) have been further associated with collective violence. Thus, a socio-political situation makes an identity salient, strengthening feelings of injustice and initiating an appraisal of the group's efficacy that, in combination, drive different forms of collective action.

However, this evidence does not explain how new identities are formed to induce collective action in response to a perceived injustice. This has been addressed by the *encapsulated model of social identity in collective action* (EMSIMCA, Thomas et

al., 2009a). This model suggests that feelings of injustice and perceptions of efficacy form a collective identity associated with collective action (Thomas et al., 2012). Feelings of injustice are accentuated by allegations of corruption (Della Porta & Vannucci, 1997), which in turn facilitates radical forms of action (Thomas & Louis, 2014). Smith et al. (2015) refer to a normative conflict between how things are and how things ought to be that encourages the formation of a new shared identity. Specifically, the Identity-Norm Nexus (Smith et al., 2015) posits that experiences of grievance induce a normative conflict between the way things are and things should be- a conflict between descriptive and injunctive norms (Cialdini et al., 1990) - that motivates individuals to communicate these experiences. Through social interaction, individuals can reach a common consensus about their experiences (Smith & Postmes, 2009, 2011), validate a shared reality (Hardin & Higgins, 1996), and thus, establish a new shared identity. If extreme voices within the group induce norms of change that are consistent with this identity, they will likely gain support (Smith et al., 2020). In this case, collective action is motivated by a socio-political situation and enabled by social interaction.

Group identity is a core determinant of engaging in collective actions in response to a perceived unjust treatment. Much research has explored the influence of a politicised identity on collective action (Thomas et al, 2012; van Zomeren et al., 2008; Simon & Klandermans, 2001; Stürmer & Simon, 2004). Its development is associated with the internalisation of group norms and goals, an urge to get involved, and an awareness that the power struggle needs to involve third parties or the society (Simon & Klandermans, 2001). Identification with a social movement predicts collective action intentions in support of this movement (e.g., Guimond & Dube-Simard, 1983; Kelly & Breinlinger, 1995; Leach et al., 2007; Stürmer & Simon, 2004). Stronger group

identification leads to a greater perception of collective disadvantage and injustice (Mummendey et al., 1999; Smith & Spears, 1996; Tropp & Wright, 1999). The significant role of a politicised identity is apparent on research pointing to a reverse relationship between politicised identity and collective action, where the latter predicts the former (Becker et al., 2011; DeWeerd & Klandermans, 1999; Drury & Reicher, 1999, 2005; Kelly & Breinlinger, 1995; Reicher, 1996; Simon & Klandermans, 2001; Turner et al., 1994). Not only a politicised but also an opinion-based shared identity, i.e. an identity that derives from shared opinions among ingroup members rather than social categories like gender or ethnicity or social movement affiliations (Bliuc et al., 2007), are associated with normative and radical collective action efforts (McGarty et al., 2009; Thomas et al., 2014). Thus, a shared identity becomes the foundation for action.

Collective action has been associated with beliefs about the pragmatic estimates of the group to achieve collective goals (van Zomeren et al., 2004). Bandura (2000) refers to this as collective efficacy, the extent to which the ingroup is perceived capable of bringing about the desired change. Collective efficacy can empower and facilitate engagement in collective action (Selvanathan & Lickel, 2019; Thomas et al., 2022). Saab et al. (2015) used the term political efficacy to describe the extent to which a group perceives that they can achieve social or political change and distinguish this from identity consolidation efficacy, which is associated with consolidating an effective oppositional movement. Political efficacy, in this sense, is also different from perceptions about the lack of efficacy of the political system (Spears, 2010). These different forms of efficacy influence different collective action efforts. The stronger the perceived collective efficacy, the more likely people are to participate in normative collective action (e.g., Hornsey et al., 2006; Kelly & Breinlinger, 1996). The lower the perceived collective efficacy, the more likely people are to endorse non-normative

actions (Tausch et al., 2011). A lack of efficacy in the political system can facilitate engagement in political violence (Spears, 2010). With social interaction, political efficacy increases commitment to extremism (Thomas et al., 2014). This evidence suggests that the relationship between efficacy and group processes is dynamic (Thomas et al., 2022; van Zomeren et al., 2010) and determines which actions will be endorsed based on the prevalent socio-political contexts in a collective action influence attempt (Klandermans, 1997).

The impact of injustice, identity, and efficacy on driving collective action has led to the formation of a new integrative conceptual model of collective actions named MOBILISE (Thomas et al., 2022). In this model, the three factors of injustice, identity and efficacy are combined in a latent psychological construct of group consciousness that influences how individuals can affiliate with larger movements (Thomas et al., 2022). This model assumes no directionality in the relationships among injustice, identity and efficacy and emphasises that individual differences and life experiences communicated with social interaction trigger those psychological processes that initiate group consciousness. This psychological construct is transformed by social interaction to either promote or undermine certain forms of collective action. Notably, this model refers to life experiences and social interaction to group formation as a function of the socio-political and economic situations in which they occur. This is in line with this thesis approach that different context categories come together to drive support for radical actions.

Morality is a key component of individual differences in MOBILISE and previous models of collective action (e.g., Milesi & Alberici, 2018). Engagement in collective actions is related to the integration of personal and movement's moral principles, which influence perceptions of injustice, therefore fostering collective actions in response to a

moral duty (Skitka et al., 2005; Van Zomeren et al., 2011; Zaal et al., 2011). That is, systemic grievances reflect the violation of moral standards by the "other" (Zaal et al., 2015) and initiate a moral obligation to enact. This moral obligation has been associated with collective action directly (Vilas & Sabucedo, 2012) and through politicised identity (Alberici & Milesi, 2016). The *axiological-identitary collective action model* (AICAM, Sabucedo et al., 2019) posits that a politicised identity and ideological self-placement initiate a moral obligation to enact, which in turn influences normative and non-normative collective action intentions. By contrast, Alberici and Milesi (2018) showed that moral obligation is more closely involved in politicising a group identity. Additional research suggested that moral conviction precedes moral obligation (Sabucedo et al., 2018). Suppose moral convictions are about what is wrong and what is right in a similar way to a normative conflict being about what is done and what should be done (Smith et al., 2015), whereas moral obligation is about felt to comply with what is perceived to be right. In that case, moral convictions are embedded in perceptions of injustice, and moral obligation may motivate the formation of a relevant politicised identity. Chapter 2 investigates the possibility of *perceived injustice influencing moral obligation to enact, which in turn may facilitate the formation of a shared identity*.

Moreover, several studies have suggested that perceptions of illegitimacy precede collective action (Ellemers, Wilke & van Knoppenberg, 1993; Turner & Brown, 1978). Indeed, perceived illegitimacy of a socio-political situation has been identified as a significant predictor of endorsement of violent and non-violent actions (Drury & Reicher, 1999; Iyer et al., 2007; Thomas & Louis, 2014). The more rightful the state is perceived in exercising political power, the more the perceived legitimacy it incurs (Gilley, 2006). Political research has identified three subgroups of state legitimacy: state legality, justification views and acts of consent (Beetham, 1991). State

legality is associated with perceptions that political power is exercised consistently with rules and laws, whereas views of justification refer to conformity with shared principles, the moral justification of the ways power is exercised (Gilley, 2006). In this way, the former refers to the perceived efficacy of authority actors to legitimately exercise their duties, and the second to the rules that govern most aspects of social and political life, such as human rights and democratic values (Beetham, 1991; Habermas, 1975). Thus, *state legality and justification views of state legitimacy consist of the belief system that supports group processes to collective action.*

Decreased confidence in law and legal authorities can lead to increased disobedience to the police and the law (Tyler, 1998). Such scepticism, named legal cynicism (see Gau, 2015), has been found to play a key role in shaping law-breaking behaviours through identification processes (e.g., Tyler, 2003). In parallel, police legitimacy is associated with beliefs of validity of the ways the police exercise their power as a legal authority (Bradford et al., 2013b; Papachristos et al., 2012), as well as feelings to defer to the police (Tyler, 2006). This is due to their link with coercion (Bittner 1970; Brodeur, 2010; Loader & Mulcahy, 2003), and the frequency of police-citizen interactions (Jackson et al., 2013). The less the perceived legitimacy of the police, the more tolerated violence can be (Jackson et al., 2013). In line, the perceived illegitimacy of force by the police has been associated with the radicalisation of crowd dynamics (Drury & Reicher, 2005) by emphasising its role on the formation of a shared identity before opposing the police (Drury & Reicher, 1999; Reicher & Stott, 2011; Stott & Drury, 2000). Therefore, *these beliefs about the law and the police (their legitimacy) facilitate the formation of a shared identity that may drive pro-radical actions*.

To mobilise collective action, these beliefs and ideas need to be communicated. This communication is achieved through social interaction, both offline and online. Social interaction can foster group processes that enable a psychological transformation of a shared identity to encourage or discourage certain forms of action (Thomas & McGarty, 2009). The functionality of online communication media has facilitated social interaction and become the vehicle for orchestrating collective actions and influencing wider audiences worldwide (e.g., Postmes et al., 2001). Indeed, many studies accentuate the capacity of computer mediated communication to influence activist actions (e.g., Kende et al., 2016; McGarty et al., 2014; Reicher & Levine, 1994b; Schumann, 2015; Spears & Postmes,2015; Thomas et al.,2015) leading to the conclusion that psychosocial predictors of collective action intentions online do not significantly deviate from those offline (Spears & Postmes, 2015).

Contrary to a "slacktivism" effect that present action online is negatively associated with future short-term action on a similar issue offline (Schumann & Klein, 2015), offline actions have been found to be influenced by participation in online discussions (Alberici & Milesi, 2012, 2013; Kende et al., 2016). The frequency and quality of involvement in these discussions can affect the ways politicised identities are dynamically constructed (e.g., Hopkins & Kahani-Hopkins, 2009; Postmes et al., 2005; Reicher et al., 2006) and socially affirmed (Kende et al., 2016; McGarty et al., 2014; Reicher, 1984; Simon & Klandermans, 2001). According to the social identity model of deindividuation effects (SIDE model, Spears & Lea, 1992), group identification and identity salience are enhanced by online anonymity (Lee, 2007; Postmes et al., 2001; Sassenberg & Postmes, 2002), online depersonalisation (Lee, 2004), and perceived online uniformity (Lee, 2004; Wodzicki et al., 2011), which, in turn, can facilitate collective action efforts. That is, the affordances of computer mediated communication

provide an opportunity for like-minded people to collectivise the changes they want to see in the world (Smith et al., 2015), find relevant materials (Geschke et al., 2019), create a stronger link between collective efficacy and action intentions (Alberici & Milesi, 2012), and mobilise resistance to out-groups (Spears et al., 2002).

This role of social interaction in transforming group identity has been emphasised in radicalisation research. Smith et al. (2015) refer to *situated social interactions* as the key component for people to develop a new shared identity or adhere to an existing one that includes a set of radical norms. Through social interaction, individuals can develop a new shared identity that is defined by a shared opinion about a social change and how it can happen, they internalise these group norms, reach a consensus and a sense of shared goals and plan for action (Smith et al., 2015). These processes are described as collectivisation, validation, consensualisation (or politicisation in MOBILISE, Thomas et al., 2022) and activation that guide collective actions (Smith et al., 2015; Thomas et al., 2022). These intragroup processes enhance the influence of radical voices from within the group, which re-constructs the shared identity (Smith et al., 2020). Thus, the perceived or experienced injustices provide a *motivating context for people to come together and develop a shared identity, while social interaction (including vicarious interaction) is the enabler that transforms these processes into collective action efforts.*

A different way to think about group processes to radicalisation is to neither create a new shared identity nor rely on pre-existed ones, but rather adopt an existing radical group's identity. Consistent with the notion that context determines group processes, Bal and Van den Bos (2017) suggested that when people experience or perceive an unfair treatment, they tend to reject the mainstream status quo, and instead adhere to a radical group that rejects the status quo to restore justice. This framework

adds to the importance of social interaction, albeit indirectly. Adherence to a radical group is possible when this alternative group is available. In this case, individuals identify with the radical group and become more rigid in reactions, especially when they perceive the radical ideology to be threatened (Bal & Van den Bos, 2010). This process leads to increasing forms of radicalisation. By contrast, when the radical group is not available, individuals tend to experience negative emotions due to the injustice. When the opportunity occurs, they express these feelings behaviourally through social interaction or justify the system when this opportunity does not occur (Bal & Van den Bos, 2017).

Additional studies on the identity processes showed that an unfair treatment leads to more alignment with extremist political leaders, which in turn leads to intentions of violent actions against the political outgroup (Kunst & Obaidi, 2020). Identification with these groups satisfies the fundamental need to belong (Baumeister & Leary, 1995). This group identity may overtake (Ellemers, 2012) or fully integrate with the personal self, a phenomenon often referred to as *identity fusion* (Swann et al., 2009). When fused with the group, individuals show an increased commitment to the group, to the extent that they may be willing to die for their group (Swann et al., 2010) or support extreme behaviours for the benefit of the group (Gomez et al., 2011; Swann et al., 2012). In contexts of uncertainty and mortality (Castano et al., 2002; Hogg et al., 2008), this fusion may occur for violent groups who become more influential due to their structural characteristics (Weinstein et al., 2007), namely their high entitativity and clear behavioural norms (Hogg et al., 2010), their consensus, close boundaries, and hierarchical structure (Kruglanski et al., 2006). As a result, identity fusion with a radical group may lead to compliance with the group's means to achieve its goals because it satisfies their psychological needs shaped by immediate and broader contexts.

This literature contributed to the conceptualisation of the proposed framework in the following ways. First, it supported the notion that the co-existence of various contexts influences how group processes develop to drive support for pro-radical action. This research emphasised that socio-political situations and experienced injustices can motivate change-seeking, whereas other practices may reinforce the group processes that drive radical change, such as social interaction. Second, a key assumption of this literature that is included in the conceptual framework of Figure 1 is that pre-existing beliefs, such as legitimacy beliefs, can influence how identity dynamics develop (Chapter 2) and how people prefer to endorse certain forms of action over others in response to different context interdependencies (Chapter 3). A third contribution is psychological empowerment as a contributing factor to group processes. Whether in the form of perceptions of collective efficacy (Chapter 2) or efficacy of a communicative message to create feelings of empowerment (Chapter 3), this component encourages group processes to radical support.

Forth, the framework proposed in this thesis examined the influence of identity processes on radicalisation in two ways: by adopting the identity of an existing radical group and by supporting radical action that emerges from a new shared identity. Smith et al. (2020) suggested that investigating group dynamics, especially how intragroup processes and intergroup relations develop within the social context, can provide insights into where and how different risk factors become integrated to elicit radicalisation processes. Chapter 2 tested an integrative model of online support for pro-radical action in response to institutional violations of privacy protection that investigated, alongside a belief system and core assumptions of collective action, processes of validation and consensualisation on a new shared identity. Chapter 3 tested, alongside a belief system, processes of adherence with an existing identity as a

driver of radical preferences. By examining these identity processes in relation to context interdependency, we can shed light on how group processes unfold to predict radical endorsements, as well as how they intertwine with the different mechanisms presented in Figure 1.

5. The Internet as the Medium for Radicalisation

There is an increased interest in radicalisation in virtual settings that facilitate diffusion of ideologies (Hafez & Mullins, 2015). Whether radicalisation is a process that unfolds online or offline is a matter of debate. Some research suggests that radical attitudes occur as a consequence of online contact with extremist material, pointing to online self-radicalisation (Lenz & Nustad, 2015). Other research casts doubt on the causality of exposure to online material on radicalisation, suggesting that this plays only a complementary role to individual offline experiences (Holt et al., 2017). The current view adopts an *onlife* approach that integrates elements that pertain to both the online and offline spheres (Floridi, 2015). Research on extremist offenders shows that online radicalisation contributed to offline interactions with individuals who have similar ideologies. In combination, online radicalisation and offline interactions facilitated the planning of a terrorist attack (Gill et al., 2017; Von Behr et al., 2013). It seems that on the Internet, individuals at risk can find their way to growing radicalisation echo chambers through algorithmic mechanisms that are directly connected to offline developments (Valentini et al., 2020). For example, this is in line with findings regarding the Islamic State, which as a multi-platform digital Caliphate, initiates and maintains radicalisation, but this activity is mutually dependent on offline spaces (Atwan, 2015).

Whether as reinforcing agent or driver of radicalisation, almost all studies ascribe a role to the Internet and social media in promoting radicalisation (Precht, 2008). Online communication media use networks organised by algorithms to ensure that people engage with like-minded others who share similar opinions or ideologies and can find materials that agree with their beliefs (Geschke et al., 2019). This leads to mobilisation through online interaction (Wakeford & Smith, 2019). Combined with the benefits of anonymity (Weimann, 2006), a degree of protection and security from detection (Gray & Head, 2009), non-censorship and no hierarchy in information that the Internet allegedly provides (Bartlett, 2011), the cyber space has become a source of non-relational, broader dissemination for ideologies and polarising opinions (Finnemore & Sikkink, 1998). In this way, computer mediated communication (CMC) creates opportunities that involve not only direct online interaction (Smith et al., 2020) but also vicarious interactions, such as watching YouTube videos or reading a group's rhetoric. Hence, CMC amplifies radicalising ideologies (Smith et al., 2020) because online interactions can normalise attitudes and behaviours that are deemed non-normative in the physical world (Bjelopera, 2013).

Integral to this conceptualisation is the idea that direct online or offline social interaction is key for promoting collective action (e.g., Thomas et al., 2016), including support for pro-radical action against socio-political situations of corruption or climate change (Thomas et al., 2022; Thomas et al., 2014). This thesis examines the capacity of vicarious interactions to promote support for radical action. Vicarious interaction is frequently referred to as "lurking." A lurker is a "*member of an online community or online social network who observes but does not actively participate*" (Osatuyi, 2015, p. 327). A lurker browses or reads content and observes online communities, especially those that offer valuable information (Bateman et al., 2011; Nonnecke et al., 2006).

Previous research has shown that observing other people's posts or online content influences one's attitudes and behaviours in relation to movements for social change (Bilali et al., 2017). Thus, vicarious interaction can cultivate social relationships and actions.

Notably, recent evidence suggests that "lurking" conveys information about the message and the communicators' identity, which is transmitted to the observers (Lee & Seltzer, 2018). Dai and Shi (2022) have shown that passive users may identify with the communicators with whom they share the same social categories. In this way, vicarious interaction facilitates identification based on context-dependent group categories. Passive members may see themselves as members of a social group rather than unique individuals (Dai & Walther, 2018). Baugut & Neumann (2019) investigated the intertwined influences of news media coverage and propaganda on individuals undergoing Islamist radicalisation and found that they affected radicalisation through coverage of intolerance and discrimination against the Muslim community in the West. This propaganda was frequently exaggerated by carefully select right-wing populism communicated to them through social media. Others have shown that this online activity enhances the formation of a shared identity by providing a sense of belonging (Odağa et al., 2019). Smith et al. (2020) conducted an automated linguistic analysis of Daesh supporters' tweets. They found that they adapt their linguistic style to the extremist language over time and that mobilising online interactions is associated with their linguistic conformity.

This research informed the proposed framework as follows. The Internet infrastructure makes the interaction between radical groups and users feasible directly, by actively searching for these groups and their rhetoric, and indirectly in the form of news or through social media activity. We leveraged this capacity of the Internet for

vicarious interactions to get new insights into the ways the immediate online experience of radical exposure intertwines with other context categories to determine radical behaviour. Participants in Chapters 2 and 3 are presented with an extract of radical or terrorist content published by national newspapers like it would be presented in a website or social media news post. Study 2 of Chapter 2 further uses a quasi-experimental design that resembles vicarious interaction capacity to indirectly inform and attract supporters for pro-radical action. These narratives are communicated through vicarious interaction and exemplify competing ideas and norms (Finnemore & Sikkink, 1998) to reconstruct social facts and practices (Payne, 2001), strengthening the influence outcome. For instance, research found that when a right-wing extremist group propagated the national identity through online videos, individuals high in uncertainty tended to identify more strongly with their national group, which, in turn, led them to be more attracted towards the extremist ideology than those low in uncertainty (Rieger et al., 2018). Thus, radicalisation is intensified by vicarious interactions, but the outcome of these interactions is likely to be shaped by how group processes are placed in context (Smith et al., 2020).

6. Implications and Conclusions

This paper proposes a conceptual framework that accounts for context interdependency and its influence on the biopsychosocial mechanisms that drive radical support. Instead of examining individual characteristics and a specific context separately, it follows a holistic approach that relies on the interdependency between individuals, groups, and different context categories to unravel how they shape radical endorsements. Theoretically, research on the proposed framework provides a better understanding of context function and emphasises the role of socio-cultural contexts in determining radical behaviour. Human activity involves complex and shifting divisions

of experience within cultures (Daiute, 2014). This means that to fully grasp radicalisation processes, we need to account for cultural influences on immediate societal responses. A major contribution of the proposed framework is that it does not only focus on cross-cultural variations in how group processes and belief systems develop but also provides new insights in the role of culture in the process of change (Cole, 1995). Similarities and differences in how people interpret immediate societal experiences and their belief systems cross-culturally can help investigate and coordinate actions that aim to mitigate risky online behaviours.

Empirically, applying the proposed framework provides evidence of how different context categories are interdependent to change behaviours over time. First, it facilitates a systematic examination of the effect of context interdependency across different social issues. By accounting for different context categories in combination, the proposed framework facilitates clarity in the way contextual influences are conceptualised and tested in radicalisation research. Second, it goes beyond a test of attitudinal or intentional responses for radical action by allowing the use of actual behavioural measurements of radical endorsement. Due to its adaptive nature, the proposed framework can be used to explain variation in radical responses, including online behaviours in situ. That is, it can be adapted to examine not only prevalent (online) behaviours but also behavioural trends in relation to real-life events longitudinally and cross-culturally. In this way, it adds ecologically valid evidence of potentially pro-radical involvement.

Practically, investigating how different combinations of context categories influence the processes that lead to various types of radical action can inform radicalisation interventions. A major criticism of current interventions in the UK is that they treat radicalisation as a risky psychological condition that can be identified based

on individual cognitive patterns, thus, neglecting the effect of context on radicalisation (Knudsen, 2020). A direct consequence is that these assessments tend to overlook the diversity in radical behaviours (as well as their social consequences) which emerge at the initial steps to radicalisation due to the variety of contextual influences available. The proposed framework informs diversity in radical endorsements by providing evidence on how context interdependency triggers influence processes to radicalisation across different levels of psychological functioning. In this way, it can further benefit assessment tools and programmes for mitigating radicalisation escalation. If a pattern of processes systematically leads to similar radical outcomes in some context combinations, but different radical outcomes in other context combinations; this variation can inform new policy on these respective contexts.

Chapter 2

Using Contexts to Understand When and Why Surveillance and Privacy Violations Lead to Pro-Radical Action

Chapter 1 provided a general overview of the thesis and proposed a conceptual framework to a radical endorsement that addressed the research questions: RQ1) how combining immediate (online/offline) societal experiences, socio-political situations, and national culture affects different forms of radical endorsement and RQ2) how context interdependency affects the influence processes that predict different radical endorsements. Driven by the events that dominated the socio-political reality at the time that the work reported here was carried out (e.g., the Facebook-Cambridge Analytica scandal, GDPR implementation during 2017-2019), Chapter 2 investigated the proposed framework in the context of online surveillance and privacy violation. Specifically, this series of studies was conducted the disclosure of the Facebook-Cambridge Analytical scandal, which raised questions about online surveillance practices and their social ramifications. Indeed, due to the increase in cyberattacks, fraud, and online terrorist activity, government initiatives for sophisticated, large-scale online surveillance has shown a rapid evolution over the last decade. Yet, the current state of surveillance technologies allows gathering an enormous amount of information that go beyond these security incidents and are frequently associated with personal data and transactions for both government and private sector purposes (e.g., Barbaro & Zeller, 2006). This has raised privacy concerns (Swire, 2001) and forced a debate about consolidating rather than agonising between security and privacy (Swire & Steinfeld, 2002).

Integral to this debate were people's behavioural responses to different surveillance practices. Initial empirical evidence suggested that although people tend to support surveillance, when surveillance practices are perceived to be intrusive, their use becomes less justified (Dinev et al., 2008). However, this body of research has predominantly focused on self-protective behaviours, such as using protective technologies, changing privacy-protection settings in social media accounts, or

investigating how self-protective measures regulate behaviours and interactions (Dinev et al., 2009). As such, other forms of action, such as radical actions, the underlying physio-cognitive and group processes, as well as the cultural variation that is likely to characterise these responses (Wu et al., 2019) have been overlooked. Thus, Chapter 2 examined the proposed framework to understand how these other forms of action may occur.

Abstract

Although practices of surveillance and privacy violations are likely to affect social behaviour, empirical research needs more evidence on the ways this effect changes due to the contexts in which these practices apply. This paper adopted a contextual approach that combined online practices of surveillance and privacy violation with another societal experience (e.g., exposure to extremist narratives, data breaching events), social context (online social interaction) and the national cultural context, to identify how they affect physio-cognitive functioning and group processes that mobilise online responses to surveillance and privacy violation. Study 1 (N = 59) used a biopsychosocial methodology to examine behavioural adaptability to online authority surveillance in the context of terrorist threat. Study 2 (N = 537) used a quasi-experimental design to investigate online support for pro-radical action against institutional privacy violations in the UK and the US. Study 3 utilised *Google search data* from 2016 to 2020 to explore changes in public engagement with surveillance and privacy violation topics, as measured through online searching behaviours, due to data breaching events that affected both countries. Results suggested that (1) compliance with surveillance practices is likely to be deliberate, (2) online support for pro-radical actions against privacy violations is driven by cross-cultural differences in the interface between online opportunities and group influences, and (3) public engagement with surveillance and privacy violation topics evolve differently over time and across countries. All studies were pre-registered under the Open Science Framework.

Keywords: surveillance, privacy violation, context, compliance, pro-radical support

Using Contexts to Understand When and Why Surveillance and Privacy Violations Lead to Pro-Radical Action

The proliferation of data breaches, increasing infringements of data protection laws (DLA Piper, 2021), and scandals such as the Facebook-Cambridge Analytica, attest to the misuse of personal information for political campaigning or private sector goals. People are increasingly becoming aware of the surveillance and misuse of their personal data, which affects their Internet-enabled actions and social relationships. For example, people were more likely to change the privacy settings in their Facebook accounts when they experienced a privacy violation or (Debatin et al., 2009). They also tended to increasingly participate in online political activities when they believed they were under online authority surveillance (Krueger, 2005). Yet, these studies examined the combined effect of surveillance and privacy violation with individual differences on online behaviour without accounting for other contexts that may influence the behavioural outcome.

We considered four context categories that are likely to affect responses to surveillance and privacy violations: cyber-physical, immediate societal experiences, social context, socio-political situation and national culture. Cyber-physical contexts refer to the designed capacities of an environment to shape communication and actions (Stuart et al., 2019). For example, social media platforms entail communication infrastructure which allows users and applications to connect and share content. In other cyber-physical contexts, communication can be achieved indirectly through videos. The immediate societal experiences are characterised by immediate (online/offline) individual experiences and group relationships characterise the social context. A socio-political situation reflects a major issue that affects the society as a whole, while the cultural context incorporates higher-level values, beliefs, customs, and ideas that are

shared among groups of people or generations. These contexts are linked in online activity (Wu et al., 2019), and so we examined how placing the investigation of surveillance and privacy violation within these different contexts predicts three different forms of online social behaviours: compliance with societal expectations (Study 1), joining a forum for pro-radical action (Study 2) and seeking information for radical topics and groups (Study 3). To understand how these different behaviours occur, we tested physio-cognitive processes (heart rates and motor-sensory control) and group processes linked to forming an emergent group identity. Both of these processes have been shown in other work to be increasingly important for regulating social behaviour (e.g., Hildebrandt et al., 2016; Spears, 2021).

Study 1 investigated the interactive effect of online authority surveillance and online exposure to a terrorist message (*immediate societal experiences*) on physiological and cognitive behavioural responses. Study 2 examined how institutional privacy violations (socio-political situation) instigate online group processes (*social context*) underpinning support for pro-radical action against privacy violation. Study 3 expanded the scope of this research by investigating the influence of societal events (e.g., data breaches) on mass-level behavioural transitions in online searches for surveillance-related topics and groups over time. Studies 2 and 3 explored transnational differences in the group processes and behavioural outcomes to assess for *national cultural context*.

Behaviours and Physio-Cognitive Processes to Surveillance and Privacy Violation

Research on the effects of surveillance practices and privacy violations on online behaviour is inconclusive. Some studies in organizational settings have found that computer-based monitoring increases productivity (Botan & Vorvoreanu, 2005) and

safety behaviour (D'Urso, 2006). In contrast, other research has reported decreased task performance (Kold & Aiello, 1997; Stanton & Barnes-Farrell, 1996) and deviant behaviours, such as deliberately altering monitoring software or avoiding monitoring (Martin et al., 2016). Another body of research suggests that privacy violations are likely to affect some online behaviours more than others. People with a negative privacy experience on a social media platform, such as receiving hostile status posts, tend to adjust the personal information they share online. However, they change neither the audiences of the content they share nor the topics of this content, leaving the psychological and social aspects of their online behaviour intact (Trepte et al., 2014). Similarly, in the aftermath of the Facebook-Cambridge Analytica scandal, although Facebook users refrained from taking self-protective measures, they did report harmful content to Facebook in order to disrupt it from spreading through their networks (Hinds et al., 2020). This evidence suggests that surveillance and privacy violations may lead to different online reactions, with the exact reaction dependent on the characteristics of the context that go along with surveillance or privacy violation. For example, differences in behavioural responses to receiving hostile posts may be associated with the social group who did these posts.

Levine (2000) argued that to understand people's reaction to being under surveillance, one needs to account for the group membership of both the source and the recipient of surveillance. When surveillance practices are perceived to serve shared benefits, namely operating on the basis of a shared identity, people tend to accept these practices (O'Donnell et al., 2010a, 2010b; Subašić et al., 2011). When identity is not shared, people perceive surveillance as invasive and resist these practices (Davis & Jurgenson, 2014; Subašić et al., 2011). Perceptions of intrusive surveillance lead to a decline in the justification of its use (Dinev et al., 2008) and it is linked with perceptions

of procedural injustice (Alge, 2001). Similarly, Major (1994) demonstrated that the degree to which people view existing practices as legitimate is central to their reaction to these practices, while Thompson et al. (2020) found that acceptance of a surveillance practice is driven by national culture. Taken together, Study 1 examined the impact of surveillance and national identity on the perceived legitimacy of this practice.

To impact behaviour, surveillance needs to affect the physio-cognitive processes that drive these behaviours. The biopsychosocial model of challenge and threat (BPS, Blascovich, 2008a; Blascovich & Tomaka, 1996) posits that when people find themselves threatened by a specific societal experience, their heart rate increases and provides behavioural and cognitive flexibility to cope with context demands (Hildebrandt et al., 2016; Thayer & Lane, 2000, 2009). This means changes in cardiovascular activity shed light on individuals' psychological experience (Seery, 2013), while motor-sensory reactions, namely the ability to (dis)inhibit inappropriate cognitive responses (Ivanov et al., 2008) spur either approach or inhibitory behavioural responses (Williams et al., 1999). Effective inhibition can enhance individual adaptability to threatening societal situation, whereas disinhibition reflects reactivity to the threatening situation (Buodo et al., 2017). Thus, investigating changes in cardiovascular and motor-sensory behaviours in Study 1 helps understand the immediate consequences of surveillance.

Whether surveillance affects these physio-cognitive responses in ways that demonstrate compliance or reactivity depends on the immediate societal context with which surveillance is associated. One societal context where the effects of surveillance on behavioural responses have not been examined is terrorist rhetoric. Given that terrorist activity both online and offline has accentuated the growth of surveillance practices (Lyon, 2003a), their combined effect on human behaviour is frequently

implied but not tested. Psychologically speaking, examining the interactive effect between surveillance and terrorist rhetoric reflects a discrepancy between acceptance of surveillance for security purposes (e.g., Wester & Giesecke, 2019) and behavioural reactivity to terrorist rhetoric (Iyer et al., 2014). That is, terrorist messages function as social cues that prompt action (Pfeffer, 1980), such as posting comments on news channels (Bressers & Hume, 2012) and participating in mobilising interactions with extremist groups in social media (Smith et al., 2020). Study 1 examined whether the interactive effect of surveillance and exposure to terrorist messages elicited compliance with societal expectations and sought to identify the underlying processes that drive this outcome. By examining surveillance and terrorist narratives in combination, Study 1 adds to the debate between acceptance of surveillance and online action in response to terrorist rhetoric and informs security policy.

The integrated threat theory (ITT, Stephan & Renfro, 2002; Stephan & Stephan, 2000) provides the theoretical underpinnings of exposure to terrorist threats. ITT suggests two types of threats – perceived realistic and symbolic threats – lead to negative intergroup attitudes and behaviours (Riek et al., 2006). Realistic threats involve a general perception of a threat to one's existence and well-being (Stephan et al., 1999; Stephan et al., 1998), whereas symbolic threats are the perceived threats to a group's belief system, values and norms (Chang et al., 2016). Since both types of threat have been identified in terrorist narratives (Weimann & Winn, 1994), Study 1 tested whether surveillance predicts changes in biopsychosocial behaviours depending on the type of terrorist threat in online exposure.

Study 1: The Interactive Effect of Authority Surveillance and Terrorist Narratives on Biopsychosocial Behaviour

Study 1 investigated the interactive effect of surveillance and online exposure to terrorist threats on individuals' cardiovascular activity and motor-sensory reactions. Driven by the biopsychosocial model of challenge and threat (BPS, Blascovich, 2008a; Blascovich & Tomaka, 1996), these measures provided the opportunity to distinguish between behaviours that occur spontaneously, without deliberation (cardiovascular activity), and behavioural responses as a result of a strategic choice (motor-sensory reaction). Two forms of motor-sensory reactions are measured here: control inhibition (*behavioural avoidance*) and control disinhibition (*behavioural approach*) (Falkenstein et al., 1999). Regarding cardiovascular activity, it was expected that because online exposure to realistic terrorist threats is associated with one's existence, which is inherently upsetting, it would require physiological adaptability, as shown by an increase in heart rates, when surveillance represents compliance with societal expectations is prevalent. However, due to the relationship between symbolic threats and societal practices (Gonzalez et al., 2008) and in line with previous research that privacy facilitates action due to the freedom it offers in response (Margulis, 2003), we expected the interactive effect of privacy and symbolic threat to be predictive of behavioural reactivity.

H1: Exposure to realistic terrorist threat increases heart rates in those individuals under surveillance compared to those who have their privacy protected.

H2: Exposure to symbolic threat increases control disinhibition, as shown by increased commission errors, in individuals who have their privacy protected compared to those under surveillance.

H3: Exposure to symbolic threat increases control inhibition, as shown by increased omission errors, in individuals under surveillance compared to individuals with their privacy protected.

To ensure that (dis)inhibitory action results mainly from the interactive effect of surveillance and terrorist threat rather than individual traits associated with executive action, Study 1 controlled for the effects of impulsivity and self-determination. Impulsivity is a personality trait characterized by weakened inhibitory control and rapid reaction to affective stimuli (Moeller et al., 2001; Schmidt et al., 2004), such as violent stimuli (Correa et al., 2010). Self-determination theory is a theory of human motivation in social contexts (Deci & Ryan, 1985, 2002). It differentiates between a motivation to be autonomous (self-determined motivation), a motivation to be controlled (controlled motivation), and a lack of goal-oriented motivation (impersonal motivation). Self-determined behaviour is autonomously motivated behaviour that can reduce negative emotions when people are threatened (Deci & Ryan, 1985, 2002), eliminate the effects of intergroup threat (Legault & Green-Demers, 2012) and predict prosocial behaviours (Gagné, 2003). A motivation to be subject to external control may lead to defensiveness (Hodgins, 2008) and antisocial behaviours (McHoskey, 1999), especially when authority surveillance is experienced as controlling (Duriez et al., 2007; Gagné, 2003). To control for the effect of individual differences on behavioural responses, controlled motivation and impulsivity traits were included when testing the interactive effect of symbolic terrorist threat and privacy on commission errors, whereas a self-determined motivation was included when testing the interactive effect of symbolic terrorist threat and surveillance on omission errors.

Differences in motor-sensory behaviour stem from attentional allocation to threatening cues (Horn et al., 2003). Attentional biases occur due to a longer focus on

threat-related rather than no-threat stimuli, which mediates the interaction between individual perception and overt action (Houghton & Tipper, 1994). Consequently, changes in attentional processing due to surveillance should determine how people react in the presence of threatening stimuli.

H4: Individuals under surveillance will show longer reaction times to threatening stimuli compared to individual with their privacy protected.

On an attitudinal level, reactive behaviour is associated with the intention to enact violence (see Webb & Sheeran, 2006, for a meta-analysis). It was anticipated that if the interactive effect of the symbolic terrorist threat and privacy fuels reactivity, namely behavioural approach to threat, the same effect should drive changes in violent intentions.

H5: Exposure to symbolic terrorist threat increases violent intentions in individuals who had their privacy protected compared to those under surveillance.

Finally, we examined attitudes towards the perceived legitimacy of surveillance. Driven by the impact of national culture on the acceptance of surveillance (Thompson et al., 2020), the strength of national identity (cultural context) alongside the experience of surveillance practice (societal context) was argued to predict changes in the perceived legitimacy of surveillance.

H6: Individuals under surveillance perceive surveillance more legitimate compared to individuals who had their privacy protected, when they identify more strongly with their national group.

Methods

Participants and Design

An a priori power analysis in G*Power (Faul et al., 2007) of *F*-tests with multiple regressions, using $f = .15$, $\alpha = .05$, and two predictors (surveillance practices/terrorist messages), suggested that 68 cases would be needed to achieve .80 power. Therefore, 68 British undergraduate students participated for course credit. They confirmed having no prior history or current neurological or cardiovascular disease/condition or taking any medication that affects the central nervous system, which was necessary recruitment criteria given our use of physiological measures (e.g., Eisenbarth et al., 2016). Data could not be calculated for nine participants due to technical failure during the collection of the physiological data ($n = 6$) or failure to follow the experimental instructions ($n = 3$). The final sample of 59 students (36 women, *Mage* = 19.44 years, *SD* = 2.70) was randomly assigned to a 2 (Terrorist Threat: Realistic/Symbolic) x 2 (Monitoring Practice: Surveillance/Privacy) between-subject design.

Materials

National identification. Participants reported the degree to which they identified with their British identity using: (1) two items taken from Cameron (2004) ("Being a member of the UK is very important to me", and "I am glad to be mainly a member of the UK community"), which were responded to on a 5-point scale from 1 (*totally disagree*) to 5 (*totally agree*); and (2) the pictorial identity fusion scale (Swann et al., 2009), which requires participants to indicate the degree to which two circles, of the self and the group, should overlap to reflect individual perception of their relationship with the group. Circles were scored 1 (*no overlap)* to 5 (*total overlap*). The

total score of national identification is the Mean of all items (α = .80). Higher scores show a higher degree of Britishness.

Impulsivity. Participants reported their impulsive tendencies with the Barratt Impulsiveness Scale (BIS-11, Patton et al., 1995). This scale uses 30 items ranging from 1 (*never/rarely)* to 4 (*almost always/always)*. The total impulsivity score is the sum of all items (α = .65). Higher scores show greater impulsivity.

Self-determination. Participants completed the General Causality Orientation Scale (GCOS, Deci & Ryan, 1985b). The scale comprises 12 vignettes followed by three potential reactions corresponding to a self-determined autonomous self, dependency on others and lack of goal-direct motivation. Participants rate the extent to which they agree with these responses from 1 (*very unlikely*) to 7 (*very likely*). Scores for self-determined motivation reflect the Mean of the 12 autonomy-related responses (α = .74), for controlled motivation reflect the Mean of the 12 control-related responses (α = .72), and for impersonal motivation reflect the Mean of the 12 impersonal-related responses (α = .71).

Rhetoric Messages. To manipulate perceived realistic and symbolic terrorist threats, two versions of a message were created based on parts of terrorist rhetoric that were mostly reproduced through online news media (Stephan et al., 2005). Building on the intergroup threat theory (Stephan & Stephan, 2000), the messages reported either personal threats against one's life, welfare, and property due to a lack of common self-definitional identity aspects (realistic threat) or threats against the Western norms and values (symbolic threat). hereas in realist threats, the focus is on a subjectively perceived conflict between the groups, in symbolic threats, the belief that the values of

the outgroup threaten one's values is a cause of prejudice and mistreatment (Kinder & Sears, 1981).

With respect to the British Psychological Society Code of Ethics and Conduct (2018) and given that these threats are inherently uncomfortable, we ensured that they would only serve the purposes of this study without additional negative consequences. The messages were i) short, ii) not combined with other stimuli such as pictures, iii) derived from publicly available online content of national news websites. Previous research has shown that re-exposure to threatening messages reduces their unexpectedness, i.e. the intensity of negative emotions (Stang, 1974). The messages are presented in Appendix A.

Behavioural responses. Participants completed the Go/NoGo task (e.g., Falkenstein et al., 1999). This behavioural task examines potential reactivity to threat stimuli by creating a prepotent tendency to respond to Go stimuli, which increases the inhibitory effort to withhold responses to NoGo stimuli. Commission errors to NoGo stimuli indicate a lack of inhibitory control, whereas omission errors in Go trials reflect inhibitory control (Horn et al., 2003; Simmonds et al., 2008).

In this task, participants were instructed to focus on a fixation point presented in the centre of a computer screen. A PsychoPy script presented participants with a series of pictures, each in the same position. When the picture contained a green shape, participants were instructed to press the ‘spacebar’ as fast and accurately as possible (Go responses). They were to withhold any keypress when it contained a red shape (NoGo responses). A series of 20 trials with neutral pictures was initially presented as practice trials. These were followed by the experimental trials of 50 digitized colour pictures. All pictures were selected from the International Affective Picture System

(Lang et al., 2008). This includes various pictures that were rated for valence, arousal and dominance on a 9-point scale ranging from *unhappy to happy, aroused to calm, controlled* to *dominant,* respectively. Experimental pictures were divided into two categories: negative (assault, war, harassment) and positive (romance, sports) with similar valence and arousal ratings (Lang et al., 2008).

The Mean valence for negative pictures was 2.59 (*SD* = 1.56), and the Mean arousal was 5.93 (*SD* = 2.17). For positive pictures, the Mean valence was 7.48 (*SD* = 1.45) and the Mean arousal was 5.23 (*SD* = 2.28), indicating moderate valence and arousal levels across trials. The task was composed of 6 counterbalanced blocks of 50 trials (300 trials in total) presented sequentially. Each trial was preceded by a fixation point (a white cross) presented in the middle of a black screen for 1000ms. Then, the picture appeared for 1200ms. A correct Go response would be a key press during this time frame. A correct NoGo response would be the restraint of any key press during this time. The proportion of Go and NoGo stimuli within each block was 70/30 (35 negative Go and 15 positive NoGo, 35 positive Go and 15 negative NoGo, respectively), and pictures were presented in random order for every participant. Each block lasted 2.3 minutes. We measured reaction time in ms to Go trials and accuracy in terms of omission and commission errors during the trials.

Violent intentions. Participants reported their intentions to use violence by rating 4 items on a violent intentions scale (Doosje et al., 2013). For instance, "I would use violence to defend my ethnic origin or religion" ranging from 1 (*totally disagree)* to 5 (*totally agree)*. A higher score across the items indicates greater intentions to use violence (α = .78).

Legitimacy. Participants reported whether they perceived authority surveillance to be legitimate using a single item, "How legitimate is authority surveillance?" Responses were made on a 5-point scale from 1 (*totally disagree)* to 5 (*totally agree).*

Heart rate. Participants' heart rates were recorded twice. For a pre-experimental baseline, heart rates were measured for a resting period of 5 minutes (e.g., Casad & Petz, 2018). Then, heart rates were measured again during the Go/NoGo task. A wireless physiological data acquisition system, bioPlux, was used to collect and digitize the signals from a Blood Volume Pulse (BVP) sensor in real time, transmitting them to a computer via Bluetooth. A BVP sensor measures cardiovascular dynamics by detecting changes in arterial translucency. Raw signals were recorded by using the opensignals software, sampled at 1000 Hz, whilst Interbeat intervals (IBI) were defined as beats per second. Since opensignals software is Python-based, it was synchronised with the experimental process in PsychoPy. In processing the raw data for the resting period, heart-beats below 40 were removed (Aubert et al., 2003). Lab conditions were controlled and kept consistent for all participants.

Procedure

Participants were informed that this was a computer-based study to examine people's attitudes towards ongoing social phenomena and how these attitudes occur. On providing informed consent, participants were asked their age, biological sex, handedness, and then to place the index finger of the non-dominant hand in a Blood Volume Pulse (BVP) sensor. They were instructed to keep it as stable as possible to record heart rates in a resting period of 5 minutes. After 5 minutes, heart rate recording stopped and participants were asked to complete the national identification scale, BIS-11 and the GCOS.

At the beginning of the experimental condition, participants were asked to put the BVP sensor back on. A realistic university document appeared on the computer screen that read, "*Based on university regulations guided by (EU) Regulation 2016/679, the use of computing equipment in educational settings is monitored/private. This means that while you carry out this research, your actions will be monitored by relevant University authorities/ your privacy will be protected.*" Next, they were instructed to read a part of an article from a national newspaper online (Stephan et al., 2005), which introduced the terrorist threat in the form of a text message (see Appendix A). To ensure that participants read the message, (i) a *continue* command appeared on the screen after 1 minute, ii) participants were told that heart rates would be recorded during this time (Wilkins et al., 2019). Then, they completed the Go/NoGo task. During this time, heart rates were also recorded. Afterwards, participants were asked to complete the post-hoc questionnaires of legitimacy and intentions, and were thanked and debriefed.

Analytical Approach

This study aimed to test whether exposure to terrorist threats (realistic/symbolic) and monitoring practices (surveillance/privacy) predict changes in physiological arousal, motor-sensory action and intentions to use violence. All statistical analyses were performed in R programming language using the lme4 package (Bates et al., 2015). The script is available at: https://osf.io/29x5n/?view_only=a83257a63d004b11af21b46cac226e59.

Regarding physiological arousal, we first tested the distribution fit of the data. Next, we conducted a series of mixed-effect linear modelling on heart rate scores for positive and negative Go blocks, respectively. The full models included terrorist threat and monitoring practices as between-subjects factors, time of measurement of heart rate

in each type of Go blocks (pre-exposure/post-exposure) as a within-subject factor, and the interaction between these predictors on heart rate scores. To account for unseen variability between participants, we added a random effect of subjects in the model. Prior to fitting the full models, we tested whether a mixed-effect linear model or a simple linear model was a better fit to the data by comparing the full model with and without the inclusion of a random effect of subjects. The final model was then fitted per the results of this test. Diagnostic tests and graph inspection was performed on the final model to ensure no assumption violations. Tests of fit and diagnostic tests were performed for all models reported in this study,

In the Go/NoGo task, control disinhibition is indicated by higher commission errors during the task, whereas higher omission errors indicate control inhibition. Omission and commission errors were count data, therefore, following a different distribution. We first examined which type of distribution (Poisson or negative binomial) fitted the data better. We, then proceeded with mixed-effect linear modelling of the respective distribution. We used terrorist threat, monitoring practices, and their interaction term as fixed effects on commission (Model 1) and omission errors (Model 2). Due to the nested structure of our data, we also added a random effect per participant and per block within participant. In line with our hypotheses, impulsivity and controlled motivation were added as covariates to Model 1, whereas self-determined motivation was added as a covariate in Model 2. After testing for the validity of the random effect, the full models were fitted and inspected for any violations of the underlying assumptions. The same analytical approach of distribution fit > type of modelling > fit > diagnostic inspection > final model fit was adopted to examine changes in reaction time and violent intentions. Power analysis for linear mixed effect models (LMEs) was estimated using the simr package (Green & McLeod, 2015). Simr performs power

analysis for all models operationalised by the lme4 package using Monte Carlo simulations. It handles non-normal response variables and a range of fixed and random effect specifications (Johnson et al., 2015) and, thus, it was used to perform power analysis based on 1000 simulations and alpha = 0.05 for all LMEs throughout this paper.

To test for the perceived legitimacy of surveillance, we conducted an ordinal logistic regression of surveillance (dummy-coded using privacy as the reference level), national identification, and their interaction term on the perceived legitimacy of authority surveillance as the outcome variable. Due to its involvement in interaction, national identification was Mean-centered prior to creating the interaction term (Aiken & West, 1991).

Results

Heart Rates

To test the prediction that realistic terrorist threat increases heart rates under surveillance rather than privacy (H1), we used mixed-effect linear modelling on heart rate scores for positive and negative Go blocks, respectively. Using the Akaike Information Criterion (AIC), distribution fit comparisons of heart rate scores in positive blocks showed that the data fitted better to a normal (AIC= 461.33) than log-normal (AIC = 463.13) and Gamma distribution (AIC = 462.13). Prior to fitting the full model of terrorist threat and monitoring practice as between-subjects factors, time measurement of heart rate in positive Go blocks (pre/post) as a within-subjects factor, and the interaction between these variables on heart rate scores, we tested whether adding the random effect improves the model. The inclusion of the random effect did not improve the model, $\Delta\chi^2(1) = 1.27$, $p = .26$. Then, we tested H1 by fitting the full

model using a linear regression. Results indicated no statistically significant differences in heart rates due to the interactive effects (all $p > .31$) or due to the simple effects of the realistic terrorist threat, $p > .22$, surveillance, $p > .50$, and time measurement time of heart rate, $p > .85$.

The same analytical approach was adopted to test these effects on heart rates for negative Go block. The results showed no improvement due to the inclusion of the random effect, $\Delta\chi^2(1) = 1.62$, $p = .20$. A linear regression of terrorist threat, monitoring practice, time measurement of heart rate, and their interaction terms on heart rate scores in negative Go blocks indicated no statistically significant effects, all $p > .38$. Diagnostic tests and graph inspection confirmed no assumption violations of the final models. Thus, the results failed to support H1.

Motor-Sensory Responses

Hypothesis 2 predicted that control disinhibition would result from the interactive effect of symbolic terrorist threat and privacy.). The distribution fit of commission errors (AIC = 639.12) was closer to a negative binomial distribution compared to a Poisson distribution that is frequently used with count data (AIC = 645.46). Thus, to test this hypothesis, we used a generalised mixed-effect modelling (GLMM) negative binomial via Laplace approximation (Kreft & De Leeuw, 1998). The terrorist threat, monitoring practice, and their interaction were added as fixed effects on commission errors. To control for individual differences, impulsivity and controlled motivation were added as covariates in the predictive model of commission errors. Given the nature of our data, we also added a random effect per participant and per block within participant (Model 1). The hypothesis that the interactive effect of symbolic threat and privacy leads to control disinhibition was not supported.

Impulsivity and controlled motivation did not affect control disinhibition. Results are presented in Appendix B. Yet, power analysis of the interactive effect of the fitted model showed insufficient power of 39.40%, 95%CI [36.36, 42.51][1]. Thus, these results need to be interpreted cautiously.

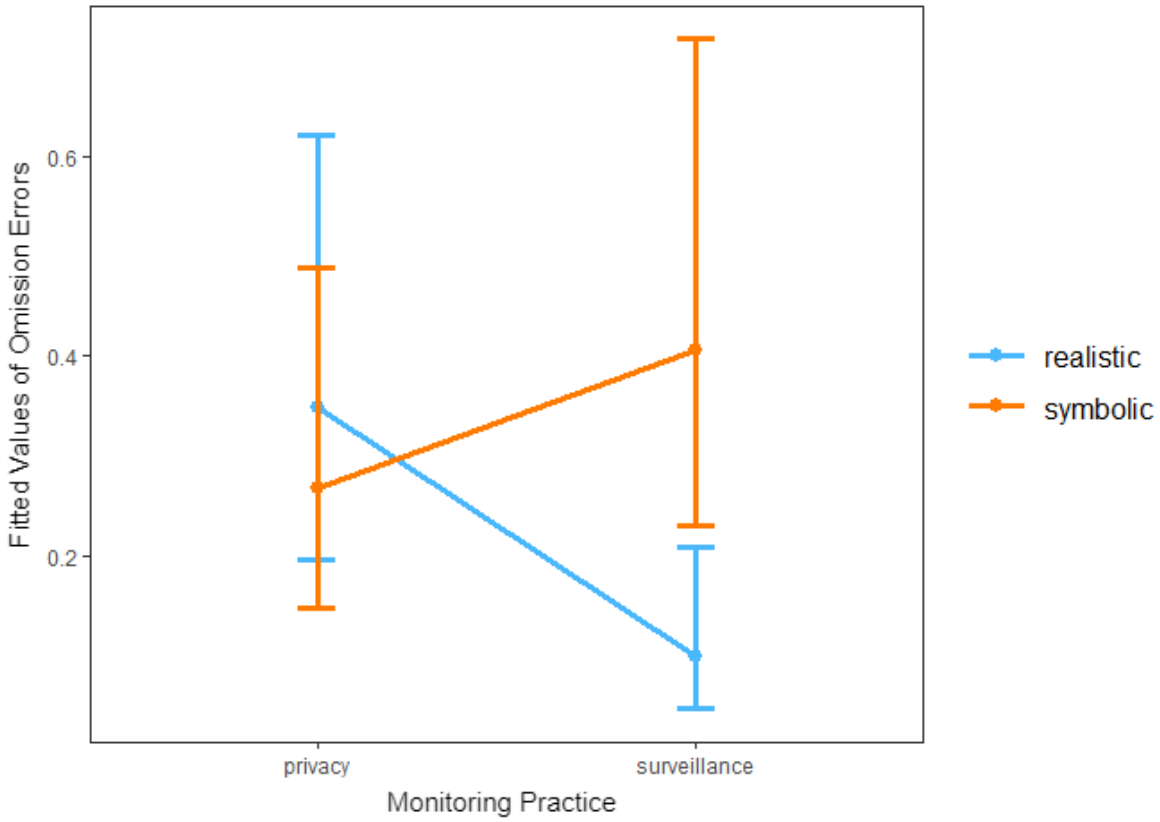
Accordingly, Hypothesis 3 predicted that the interactive effect of symbolic terrorist threats and surveillance would predict control inhibition. Distribution fit of omission errors showed that they were closer to a negative binomial distribution (AIC = 738.61) compared to a Poisson distribution, (AIC = 874.85), thus we tested a generalised mixed-effect model (GLMM) negative binomial, as with Model 1. The model consisted of terrorist threat, monitoring practice and their interaction as fixed effects on omission errors while adding a random effect per participant and per block within participant. To control for individual differences self-determined motivation was added as a covariate (Model 2). The inclusion of the random effects was justified because a comparison of Model 2 with random effects performed significantly better than without random effects, $\Delta\chi^2(2) = 30.92$, $p < .001$. Model 2 showed improvement on the Intercept-only model, $\Delta\chi^2(4) = 10.43$, $p = .03$. The final model showed a variance of .70 for the random effect of Subjects, *SD* = .84, ICC = .22. and a variance of .78, *SD* = .88, ICC = .25 as per block within participant. The results suggest that the random effects explain a moderate degree of the overall variation in omission errors. Power analysis indicated sufficient power of 80%, 95%CI [77.38, 82.44] for the interactive effect of the fitted model.

As expected, there was a significant interaction between terrorist threat and monitoring practice on omission errors, $\beta = 1.69$, *SE* = .63, $z = 2.70$, $p = .01$, 95%CI [0.46, 2.97]. There was a simple effect of monitoring suggesting that omission errors were reduced under surveillance compared to privacy, $\beta = -1.29$, *SE* = .47, $z = -2.72$, $p =$

.01, 95%CI [-2.26, -.37]. Neither the simple effect of terrorist threat , β = -.31, *SE* = .42, *z* = -.72, *p* = .47, 95%CI [-1.15, .54], nor the simple effect of self-determined motivation were statistically significant, β = -.02, *SE* = .03, *z* = -.59, *p* = .56, 95%CI [-.07, .04], *Pseudo-R² (total)* = 0.30. The interaction between terrorist threat and monitoring is depicted in Figure 1. Analysis of simple slopes showed that when exposed to symbolic terrorist threats, there was a significant increase in omission errors under surveillance, β = 1.41, *SE* = .47, *t* = 2.99 ($M_{realistic}$ = .21, *SD* = .66 < $M_{symbolic}$ = .86, *SD* = 1.53). No statistically significant effect was detected under privacy, β = -.26, *SE* = .42, *t* = -.63 ($M_{realistic}$ = .71, *SD* = 1.24 > $M_{symbolic}$ = .62, *SD* = 1.38). The results provide partial support for Hypothesis 2. Although the interactive effect of symbolic threat and privacy did not predict control disinhibition (i.e., *behavioural approach*), the interactive effect of symbolic threat and surveillance predicted control inhibition (i.e., *behavioural avoidance*). In both cases, covariates did not seem to influence the results.

Figure 1

Interactive Effect of Terrorist Threat and Monitoring Practice on Omission Errors



Attentional Processes

Hypothesis 4 predicted longer reaction time (RT) to threatening stimuli due to authority surveillance. Tests of distribution fit for RT for negative Go blocks showed that a logarithmic normal distribution fitted the data (AIC = 2152.94). Consequently, a mixed-effect linear model of monitoring and negative blocks as fixed effects and a random effect of subjects was examined on log-transformed reaction time. The model performed significantly better than the Intercept-only model, $\chi^2(3) = 67.13$, $p < .001$. Adding the random effect of subjects significantly improved the model, $\chi^2(1) = 105.61$, $p < .001$, and justified its inclusion in the model. Table 1 presents the estimates for the Intercept-only and full model. Surveillance predicted 8% or approximately 51.66ms

longer reaction time than privacy. The results suggest that participants' reaction time was slower in the first negative block compared to the second block by 111.78ms, and 139.43ms slower than the third block[2]. These findings support H4 that attentional bias to threatening stimuli, namely slower RT as the task continued and the negative stimuli exposure increased, is marginally predicted by surveillance. Power analysis showed sufficient power of 99.9% for the effect of surveillance, 95%CI [96.38, 100], and 99.9% for the effect of negative Go blocks, 95%CI [99.44, 100].

The same mixed-effect model was examined on positive Go blocks. The tested model significantly improved the Intercept-only model, $\chi^2(3) = 33.74$, $p < .001$, whilst including the random effect showed improvement compared to a model with no random effects, $\chi^2(1) = 123.46$, $p < .001$. The results suggested that surveillance did not significantly predict any changes in RT compared to privacy, $\beta = .06$, $SE = .04$, $t = 1.65$, $p = .10$, 95%CI [-.01, .14]. However, participants had 34.01ms slower RT to the first block than the second block, $\beta = -.06$, $SE = .01$, $t = -4.24$, $p < .001$, 95%CI [-.09, -.03], and 44.91ms slower RT to the first compared to the third block, $\beta = -.08$, $SE = .01$, $t = -5.76$, $p < .001$, 95%CI [-.11, -.05]. The variance for the random effect of Subjects was $\sigma^2 = .02$, $SD = .14$ with a high value of ICC = .78, *Pseudo-R^2*(total) = .80. Results support the emergence of attentional bias in response to positive stimuli, which was not predicted by surveillance practices. Power analysis showed sufficient power of 95.5% for the effect of surveillance, 95%CI [94.02, 96.70], and 99.9% for the effect of positive Go blocks, 95%CI [99.63, 100].

Table 1

Estimates of the Null Model and Mixed-Effect Model of Negative Blocks and Surveillance on Reaction Time

Model	M0: Intercept-only			M1: With predictors		
Fixed part	***β* (SE)**	**95%CI**	***t*-value (*p*)**	***β* (SE)**	**95%CI**	***t*-value (*p*)**
Intercept	6.40(.02)	[6.35,6.44]	312.23 *(<.001)*	6.43(.03)	[6.38, 6.49]	221.43 *(<.001)*
Surveillance				.08(.04)	[.001, .16]	2.01 *(.049)*
2nd Neg.Go Block				-.09(.02)	[-.12, -.06]	-6.21*(<.001)*
3rd Neg.Go Block				-.14(.02)	[-.17, -.11]	-8.92 *(<.001)*
Random part						
σ^2 (SD)	.021(.14)			.021(.14)		
Pseudo-R^2 (total)	.63			.78		
Adjusted ICC	.63			.75		

Violent Intentions

Hypothesis 5 predicted consistency between intention and behaviour, such that if the interactive effect of symbolic terrorist threat and privacy predicts control disinhibition, it should also predict more violent intentions. A linear regression with the interactive effect of monitoring and terrorist message on log transformed violent intentions[3] did not show statistical significance, p =.33.

Perceived Legitimacy

Hypothesis 6 predicted that being under surveillance has a different impact on the perceived legitimacy of the practice as a function of the strength of national

identification. To test this hypothesis, an ordinal regression of surveillance (using privacy as the reference level), national identification (Mean-centered), and their interaction term was performed on perceived legitimacy of authority surveillance as the outcome. The model showed improvement on an Intercept-only model, $\chi^2(3) = 14.90$, $p = .002$. Specifically, there was a significant interaction between surveillance and national identification, $\beta = .70$, $SE = .22$, $t = 3.23$, $p = .002$, 95%CI [.29, 1.14], and a significant main effect of the strength of national identification, $\beta = -.41$, $SE = .16$, $t = -2.53$, $p = .014$, 95%CI [-.75, -.11]. The single effect of surveillance was not statistically significant, , $\beta = .94$, $SE = .51$, $t = 1.84$, $p = .07$, 95%CI [-.05, 1.97].Further analysis of the interaction showed that, under surveillance, the odds of perceiving authority surveillance as legitimate increased from 1 (*totally disagree*) to 5 (t*otally agree*) for every unit increase in national identification, $\beta = .29$, $SE = .13$, $t = 2.13$, $p = .038$, 95%CI [.03, .55]. However, under privacy, the odds of perceiving authority surveillance as legitimate decreased for every unit increase in the strength of national identification, $\beta = -.41$, $SE = .16$, $t = -2.53$, $p = .01$, 95%CI [-.75, -.11]. The results confirm that the interactive effect of surveillance and national identification affects the perceived legitimacy of this practice.

Discussion

Surveillance decreases omission errors suggesting participants' adaptability to task requirements under surveillance. Longer attentional allocations under surveillance corroborate this interpretation. In other words, participants under surveillance did exactly what they were instructed to do, indicating compliance with task requirements. On exposure to symbolic terrorist threats under perceived surveillance, omission errors increased. This points to a deliberate attempt to withhold action to sustain motor-sensory control. Wright et al. (2014) argued that this behaviour reflects a strategic

slowing in responses to compensate for a perceived inhibitory deficit. This means that in combining surveillance with contextual factors, individuals put forth cognitive effort to keep control of their task performance. The findings suggest that by accounting only for the effect of surveillance on behaviour, the behavioural outcome is suggestive of automatic compliance to social expectations. However, when accounting for the interactive contextual effect, the resulting strategic adaptability of behaviour is indicative of a deliberate attempt to remain compliant. Although we acknowledge that the symbolic threatening message does not fully reflect the definition of symbolic threat described in the intergroup threat theory, in the sense that it tends to include both realistic and symbolic threats, these elements are often combined in terrorist rhetoric (Fritsche et al., 2011). In this way, we posit that as operationalised here symbolic terrorist threats add does not undermine the adaptive capacity of behaviour by means of contextual interdependency.

With regard to the underlying processes, different contextual factors drove different adaptive mechanisms that added to the deliberate nature of the behavioural outcome. Participants showed longer reaction time to negative stimuli under surveillance. This finding suggests that participants were likely to exhibit more information processing (e.g., Baumeister et al., 2001; Rozin & Royzman, 2001) on these stimuli when they perceived their actions to be monitored reflecting an attempt of cognitive control over negative stimuli to succeed in the task. Perceptions of surveillance (il)legitimacy added to these interpretations. Participants who valued their national identification perceived authority surveillance as legitimate when exposed to surveillance, whereas they did not perceive authority surveillance as legitimate when their privacy was protected. These results align with the idea that privacy provides contextual integrity that allows the expression of controversial beliefs (Nissenbaum,

2004). Furthermore, the results provide evidence that people comply under surveillance, but this is likely to be a deliberate rather than a spontaneous choice. Overall, these findings suggest that by accounting for the interactive effect of surveillance and the context to which it applies on behaviour, we identify subtle individual processes of strategic compliance attempts that are likely to be overshadowed when surveillance and context are examined separately. Study 2 adds to these findings by examining the group-level processes that are likely to elicit pro-radical forms of action against privacy violations caused by authority surveillance practices.

Study 2: Institutional Violations of Privacy and Support for Pro-radical Action

Behavioural responses to surveillance have been investigated in relation to social privacy and institutional privacy (Raynes-Goldie, 2010). The former refers to online situations involving similar others, whereas the latter describes how institutions (such as social network services, and the government) deal with personal data. Users tend to adapt their privacy behaviours in response to social privacy violations, such as online stalking or cyberbullying, but tend to be less concerned about institutional privacy violations (boyd & Hargittai, 2010; Marwick & boyd, 2014; Hargittai & Marwick, 2016). However, institutional privacy violations can have two potential outcomes: (a) a lack of trust in these institutions (Horne & Przepiorka, 2021), (b) endorsement of disruptive behaviour (e.g., blocking and reporting harmful content) (Hinds et al., 2020). While much of this previous research has focused on disruptive behaviour relative to social media activity, Study 2 capitalised on context interdependency to examine the group processes that drive action against institutional privacy violations.

Conceptually, this study proceeded from the assumption that people exposed to institutional violations of privacy may perceive this to be unfair treatment, which is the foundation for radical adherence (Bal & van den Bos, 2017). This perceived injustice is likely to initiate a moral obligation to enact. This moral foundation is, then, associated with the emergence of a new shared identity of privacy protection. To investigate the processes that link this shared identity with pro-radical forms of action, Study 2 tested an integrative model that combined components of the Identity-Norm Nexus (INN, Smith et al., 2015) and literature on collective action (e.g., Thomas et al., 2012; van Zomeren et al., 2018). According to INN, online social interaction becomes the basis for a new shared identity that mobilises users through social validation and consensualisation. Social validation is the process that makes a norm representative of social reality (Moscovici, 1980) and consensualisation is the perception that these norms are shared by others in the group (Smith et al., 2015). In this sense, a pro-radical form of action that has been communicated and validated to be in line with the shared identity is likely to gain support. Hence, we expected these processes to comprise a latent construct of influence processes.

By testing this integrative model, Study 2 expanded previous work on surveillance in three ways. First, it examined the potential of privacy violation to elicit pro-radical forms of online action. Second, it identified the group processes that influence how these forms of action are endorsed in response to institutional privacy violations. Third, it explored cultural differences in the ways these group processes unfold to encourage pro-radical action. More specifically, this study examines differences in the group processes and the belief system that shapes pro-radical responses against institutional privacy violations in the UK and the USA. Previous research demonstrated that these countries have different beliefs and attitudes towards

issues of surveillance and privacy (Rosen, 2001). For example, British societies embrace new surveillance technologies, whereas American societies resist them (Rosen, 2001). Thus, Study 2 investigated how the context of privacy violation intertwines with group processes and socio-cultural beliefs to instigate group-level support for radical action in online settings.

Of particular interest here was how online interactional contexts (e.g., online forums, online platform services for direct and vicarious interaction) facilitate the emergence of a shared identity that, in turn, drives support for pro-radical actions against these violations. Figure 2 presents all the hypothesised relations examined in this study. As shown in Figure 2, a new shared identity of privacy protection emerges from a moral duty to act on the perceived injustice of institutional privacy violation. This identity influences the group efficacy -- the pragmatic estimates of group success to collectively address the injustice (Hornsey et al., 2006). If radical voices from within the group promote a course of action against government violations on the basis of the shared identity, they are likely to gain support and thereby influence the perceptions of collective efficacy. It is expected that in vicarious interactions, these radical actors can initiate processes of social validation and consensualisation that grant successful influence (Smith et al., 2015). Supported by this influence, a shared identity and perceptions of collective efficacy instigate action intentions associated with online endorsement of pro-radical action.

H1a: Moral obligation is positively associated with the formation of a shared identity of privacy protection.

H1b: Shared identity and collective efficacy are positively associated with pro-radical online endorsement through action intentions.

H2: Social validation and common consensus are positively associated with the shared identity and perceived collective efficacy, which, in turn, increase action intentions.

Integral to the proposed model is the hypothesis that belief systems complement group processes. As shown in Figure 2, political intolerance and lack of forgiveness for government failures support a moral obligation to act. Since the former involves moral judgements about the appropriateness of political procedures (Emler, 2003) and the latter reflects a motivational transformation due to the political or societal context (van Tangeren et al., 2014), they are expected to complement feelings of injustice and provide a moral foundation to identity formation. Accordingly, beliefs on the legitimacy of the police and scepticism about the law and the actors who enforce it (i.e. legal cynicism, Gau, 2015) are relevant to the issue of privacy violation and the formation of new identities (Drury & Reicher, 1999; Iyer et al., 2007; Thomas & Louis, 2014; Tyler, 2003). Alternatively, beliefs on the effectiveness of the state authorities, named state legality (Gilley, 2006), were expected to be associated with perceptions of collective efficacy. In contrast, broader beliefs on democratic functioning and human rights (state justification, Gilley, 2006) were expected to be directly associated with action intention (Doosje et al., 2016; Feddes et al., 2019) due to their inherent association with attempts for social change (e.g., Stürmer & Simon, 2004). The proposed belief system is likely to differ due to cultural differences.

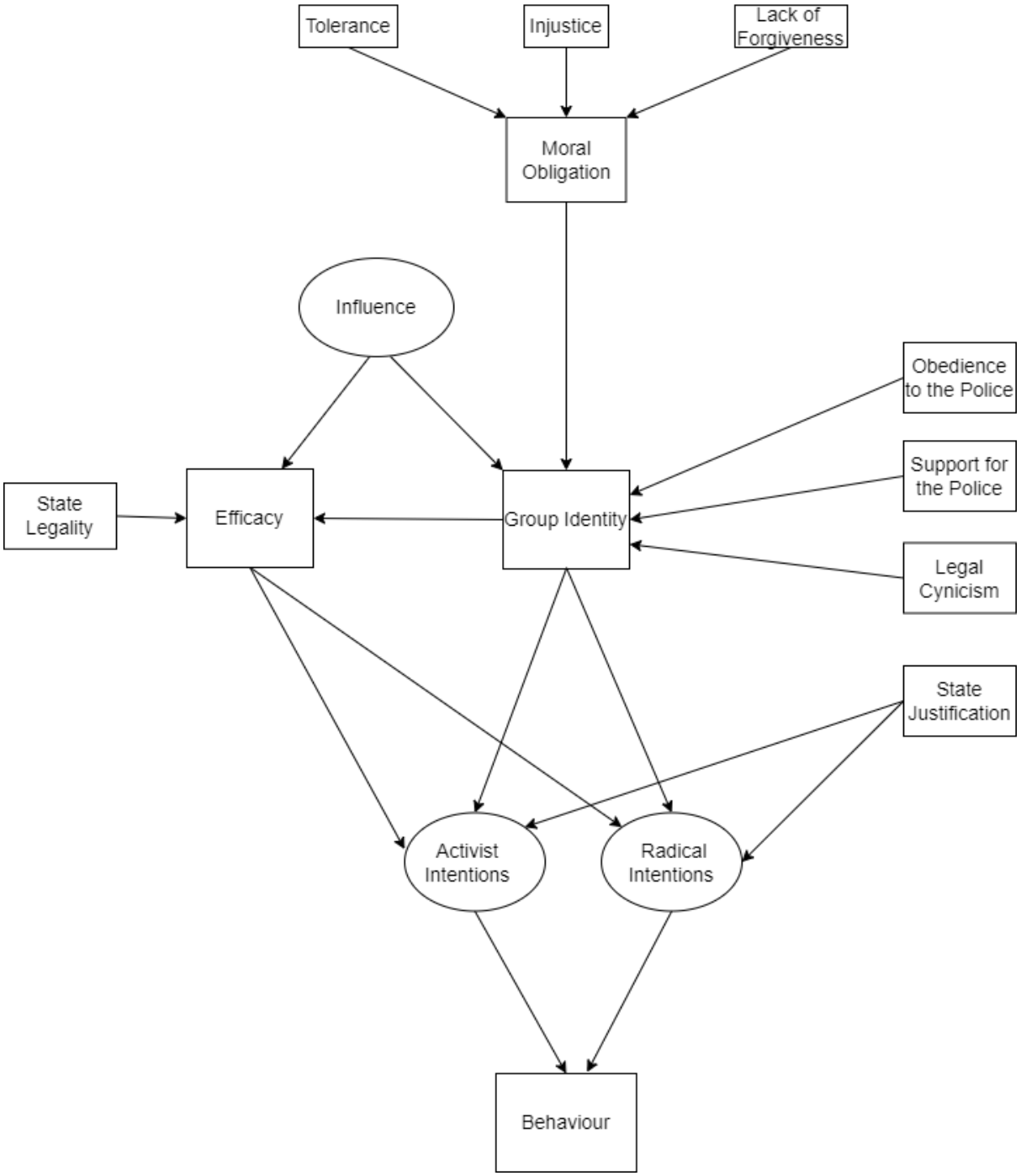
H3: Political intolerance, lack of forgiveness and feelings of injustice are positively associated with a moral obligation to enact against institutional privacy violations.

H4: Negative beliefs for the authorities that are consistent with the shared identity and negative beliefs about democratic governance are positively associated with the shared identity and action intentions, respectively.

H5: There will be cultural differences in the way group processes and action intentions develop in the US and the UK.

Figure 2

Proposed Model of Pro-radical Action against Institutional Violations of Privacy



Methods

Participants

Data were collected via an online survey posted to: (1) Prolific Academic (http://www.prolific.ac) and (2) the research participation systems of three academic institutions in the UK and the USA. A total of 563 adults participated in the survey after giving informed consent. Of these, data were removed for 26 participants because they withdrew from participation or because they completed the survey in less than 5 minutes, which was estimated to be too short to have meaningfully completed the survey. Our final sample consisted of 537 participants (312 UK citizens and 225 USA citizens, *M*age = 28.1 years, SD = 10.89, Range: 18-70 years) with complete data.

Measures and Procedure

Participants from the UK and the USA were invited to take part in an online study regarding the use of the current data protection legislation. On giving informed consent, participants were asked to indicate their age and sex and were presented with the same message that included information about governmental or authority (including retail financial institutions) violations of privacy legislation (Appendix A). The message was created based on news reports viewed in UK and USA online national newspapers (e.g., Thomas et al., 2014). Participants were instructed to read this message carefully because they would be asked a series of questions related to its content. To maximise reading, the message was presented on a computer screen for two minutes before the "*continue*" command appeared on the screen. Table 4 shows the questionnaire scales that participants were then asked to complete and how they were adapted to the context of the study. Participants were also provided an open text box their opinion on the best ways to deal with government/authority privacy violations.

On completing the questionnaires, influence processes were introduced as follows. By adapting the notion of social media communication, participants were informed that "*some of the participants who have already completed this survey agree that the most effective solutions to overcome the abuse of power regarding privacy rest on more direct methods that do not involve appeals to the political process and directly block the arbitrary use of surveillance activities against unwitting citizens*" (Thomas et al., 2014). They were asked to report the extent this suggestion corresponds with their social reality (validation) and whether defending the right to privacy is a common goal between themselves and these participants (common consensus) on a scale ranging from 1 (*not at all*) to 7 (*a great deal*). Finally, they were informed that the participants who supported direct action had created a forum that relates to the implementation of this action. Participants had the choice to either join the forum or not by clicking the relevant button. In either case, they were thanked and debriefed.

Table 2

Summary of the Measures Used in Study 2

Measure	Source	Item No	Example Question
1. Perceived Injustice[1]	Saab et al., 2016; Tausch et al., 2011	4	Privacy violation by the government and the authorities is unfair.
2. Tolerance of Power Abuse	Dunwoody & Funke, 2016	3	Those who threaten government stability do not deserve to have their personal data protected.
3. State legality and Justification	Inglehart et al., 2014	3[2]	How much respect is there for individual human rights nowadays in this country?
4. Support for the Police	Sunshine & Tyler, 2003	5	There are many things about the police and their policies that need to be changed (reverse coded).
5. Obedience to the Police	Sunshine & Tyler, 2003	5	I should accept the decisions made by the police, even if I think they are wrong.
6. Legal Cynicism	Gau, 2015	4	Powerful people use laws to disadvantage powerless people.
7. Collective Efficacy[1]	Tausch et al., 2011	4	I think that together we can change policies that violate our privacy.
8. Identity[1]	Cameron, 2004; Swann et al., 2009	3[3]	Being a supporter of actions against privacy violation is important for my self-image.
9. Moral Obligation[1]	Milesi & Alberici, 2016	3	I think that every citizen has the moral responsibility to fight against privacy violation.
10. Lack of Forgiveness	Wohl & Branscombe, 2005	3	It is not possible for me to forgive the actions of the government and the authorities.
11. Activism and Radicalism Intention	Moskalenko & McCauley, 2009	8[4]	I would donate money to an organization that creates security software against involuntary electronic surveillance.[4]

Notes. All responses were made on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*), unless otherwise stated. [1] Items ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). [2] Views of state legality were measured on a scale ranging from 0 (*not at all*) to 10 (*a great deal*). [3] The third item of politized identity was the pictorial identity fusion described in Study1. [4] Four items represented activist intentions and 4 items represented radical intentions (e.g., "*I would continue to support an organization whose technology blocks governmental agencies from recording personal data without consent or a good reason, even if the organization sometimes resorts to violence*").

Analytical Approach

To test the hypothesised relationships, a Structural Equation Modelling (SEM) was performed using the package Lavaan (Rosseel, 2012) in R Statistical Programming language. First, the measurement model was tested with a Confirmatory Factor Analysis (CFA) to ensure the constructs in Figure 2 were distinct and reliable. Second, the relationship between these constructs was tested by using structural models. Given the reported unreliability of the chi-square test with large samples and categorical outcomes (Fan & Sivo, 2007; West et al., 2012), reporting of the chi-square measure is complemented with two incremental fit indices that are better fit measures for categorical data: Root Mean Square Error of Approximation (RMSEA) and the comparative fit index (CFI) (Flora & Curran, 2004). The RMSEA has been chosen over the Standardized Root Mean Square Residual (SRMR) because the former has been found to be a better indicator of model fit when sample size exceeds 200 participants (Curran et al., 2003; West et al., 2012). Although a satisfactory fit is generally indicated by a RMSEA $\leq .08$ (e.g., Hu & Bentler, 1999), recently a stringent criterion of RMSEA $\leq .07$ has been proposed (Steiger, 2007). This latter criterion, along with a CFI $\geq .90$ (Hooper et al., 2008), was adopted throughout.

Results

Measurement Model

A 14-factor CFA model that included all constructs[4] as shown in Figure 2 and treated activist and radical intentions as distinct constructs was tested using a Full Information Maximum Likelihood (FIML) method and computing robust Huber-White standard errors. The model showed adequate fit to the data, $\chi^2(1286) = 2823.44$, $p < .001$, $\chi^2/df = 2.20$, CFI = 0.87, RMSEA = .05 (90% CI [.047, .052]), and fit the data better than a 13-factor CFA model where activist and radical intentions were combined in one construct, $\chi^2(1299) = 3198.89$, $p < .001$, $\chi^2/df = 2.46$, CFI = 0.84, RMSEA = .06 (90% CI [.052, .057]). Test of model comparison confirmed this, $\Delta\chi^2 (13) = 344.91$, $p(\chi^2) < .001$. An inspection of the 14-factor model showed a number of high standardised residual values for covariance terms across scales. These scales are presented in Table 3. Previous research has suggested adding correlation error terms across scales to correct for high standardised covariance in simple models but drop the scales in question for more complex models because large residuals (> 3.00) associated with specific scales indicate their misspecification in the model (Byrne, 2001).This misspecification affects overall model fit (Bagozzi & Yi, 2012; Byrne, 2001). Thereby, scales presented in Table 3 were excluded from the model. The scale of political tolerance showed high residual values for covariance terms for one item ("People who are intolerant of government practices do not deserve freedom of speech") across scales and was excluded. However, the remaining items indicated poor internal consistency ($\omega = .35$) and, therefore, were dropped from the analysis. The subsequent 13-factor CFA model showed an adequate fit to the data, $\chi^2(662) = 1207.19$, $p < .001$, $\chi^2/df = 1.82$, CFI = 0.94, RMSEA = .04 (90% CI [.036, .042]). Table 4 presents the correlations, Means and Standard Deviations, and internal consistency of the scales.

Table 3

Deleted Items in Confirmatory Factor Analysis

Constructs	Number of Scales	Scale	*Covariance Z-score*
Efficacy	1	We have already lost the fight against privacy violation	-3.38
Legality	1	How much confidence you have in them keeping individuals' data private: The Press, Labour, Army.	Press: 3.24 Labour: 4.54 Army: 3.98
Obedience to the Police	2	I should accept the decisions made by police, even if I think they are wrong. / Sometimes you have to bend the law for things to come out right.	4.84 / 5.20
Injustice	1	Privacy violation is legitimate.	3.17
Support for the Police	1	There are many things about the police and their policies that need to be changed.	-3.09
Lack of Forgiveness	1	I don’t hold any negative feelings towards the government and the authorities for their actions over the last years.	-4.77
Radical Intention	2	I would continue to support an organization which creates software against authorities’ abuse of power, even if the organization sometimes breaks the law. / I would attack police or security forces if I saw them beating supporters of the privacy protection movement.	-4.51/ -4.43

Table 5

Means, Standard Deviation, Internal Consistency and Correlations Among the Constructs in Study 2

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	M(SD)	ω
1.Activist Intention														3.72 (1.37)	.88
2. Injustice	.35													4.04 (0.78)	.68
3. Identity	.80	.61												4.06 (0.97)	.60
4. Moral Obligation	.54	.70	.77											3.93(0.85)	.79
5. Efficacy	.44	.24	.45	.28										3.51(0.90)	.89
6. State Legality	-.24	-.25	-.25	-.20	.02									4.72 (2.24)	.88
7. Influence	.44	.24	.61	.33	.36	-.10								4.01(0.89)	.60
8. Support for Police	-.28	-.20	-.21	-.19	.01	.41	-.11							4.51 (1.24)	.88
9. Obedience Police	-.29	-.15	-.14	-.18	-.05	.30	-.09	.56						4.09(1.49)	.83
10. Law Cynicism	.18	.26	.17	.13	-.03	-.53	.07	-.63	-.31					4.70 (1.09)	.70
11. State Justification	-.25	-.17	-.19	-.23	.12	.48	-.04	.54	.30	-.69				3.46(1.38)	.71
12.Lack Forgiveness	.26	.23	.31	.31	.06	-.46	.17	-.53	-.38	.60	-.58			4.42(1.29)	.78
13.Radicalism	.49	.06	.38	.22	.20	-.19	.28	-.37	-.27	.24	-.21	.33		2.97(1.50)	.74

Notes. Correlation coefficients and Omega occurred from the fitted CFA model. Omega indices were calculated from the polychoric correlations (Deng & Chan, 2017). Lavaan (Rosseel, 2012) has not seen fit to construct a *p*-value matrix for correlations derived from covariances, and, thus, *p*-values are not displayed.

Structural Models

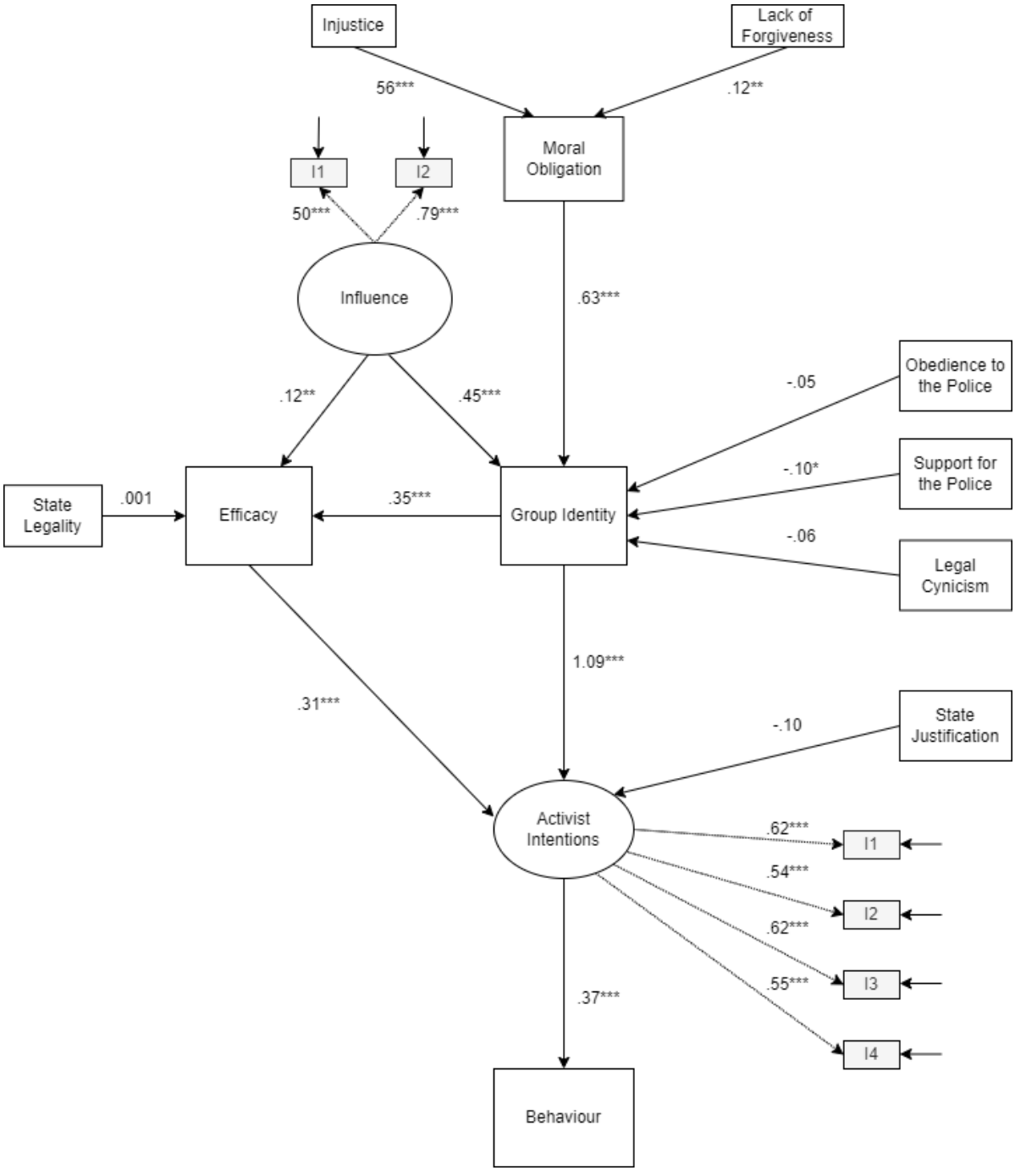
Since activist and radical intentions were identified as different constructs, one model (Figure 2) was tested for activist intentions and one for radical intentions. These types of action intention and the influence processes were treated as latent constructs. Due to the categorical outcome of the behavioural measurement, estimates for the structural model were derived using a robust weighted least squares (WLSMV) procedure which produces more reliable parameter estimates for categorical variables compared to the maximum likelihood approach (Finney & DiStefano, 2006). The results for the model of activist intentions indicated adequate fit of the data to the model, $\chi^2(95) = 238.82$, $p < .001$, $\chi^2/df = 2{,}51$, CFI = 0.97, RMSEA = .05 (90% CI [.045, .062]). The results for the model of radical intentions showed a relatively poor fit to the data, $\chi^2(66) = 227.99$, $p < .001$, $\chi^2/df = 3.45$, CFI = 0.81, RMSEA = .068 (90% CI [.058, .077]). Figure 3 shows the unstandardised estimates for the emergence of pro-radical engagement associated with activist intentions. As shown in Figure 3, there are several indirect effects in the model. The mediation analysis showed statistically significant indirect effects of influence processes on activist intentions through the shared identity, $\beta = .44$, SE = .06, $z = 7.25$, $p < .001$, 95%CI [.32, .55], and through perceived efficacy, $\beta = .20$, SE = .04, $z = 5.26$, $p < .001$, 95%CI [.13, .28], as well as an indirect effect of the shared identity on behaviour through activist intentions, $\beta = .30$, SE = .05, $z = 6.38$, $p < .001$, 95%CI [.21, .39]. For economy, the total indirect effects are presented in Appendix B.

These results confirm Hypotheses 1a and 1b, that moral obligation is positively associated with a shared identity of privacy protection, which, along with collective efficacy, are associated with pro-radical online endorsement through action intentions. They also confirm Hypothesis 2 that a shared identity and collective efficacy are positively associated with processes of validation and common consensus with pro-

radical actors who share this identity. However, the results only partially support Hypotheses 3 and 4. Feelings of injustice and lack of forgiveness influence moral obligation but political intolerance was excluded from the analysis. Beliefs on obedience to the police, legal cynicism and democratic governance did not seem to influence the formation of the shared identity and action intentions, as it was initially expected.

Figure 3

SEM Estimates for Activist Model (Full)



Note. Figure presents unstandardized estimates. *** $p < .001$, ** $p < .01$, * $p < .05$

Moderation by Country

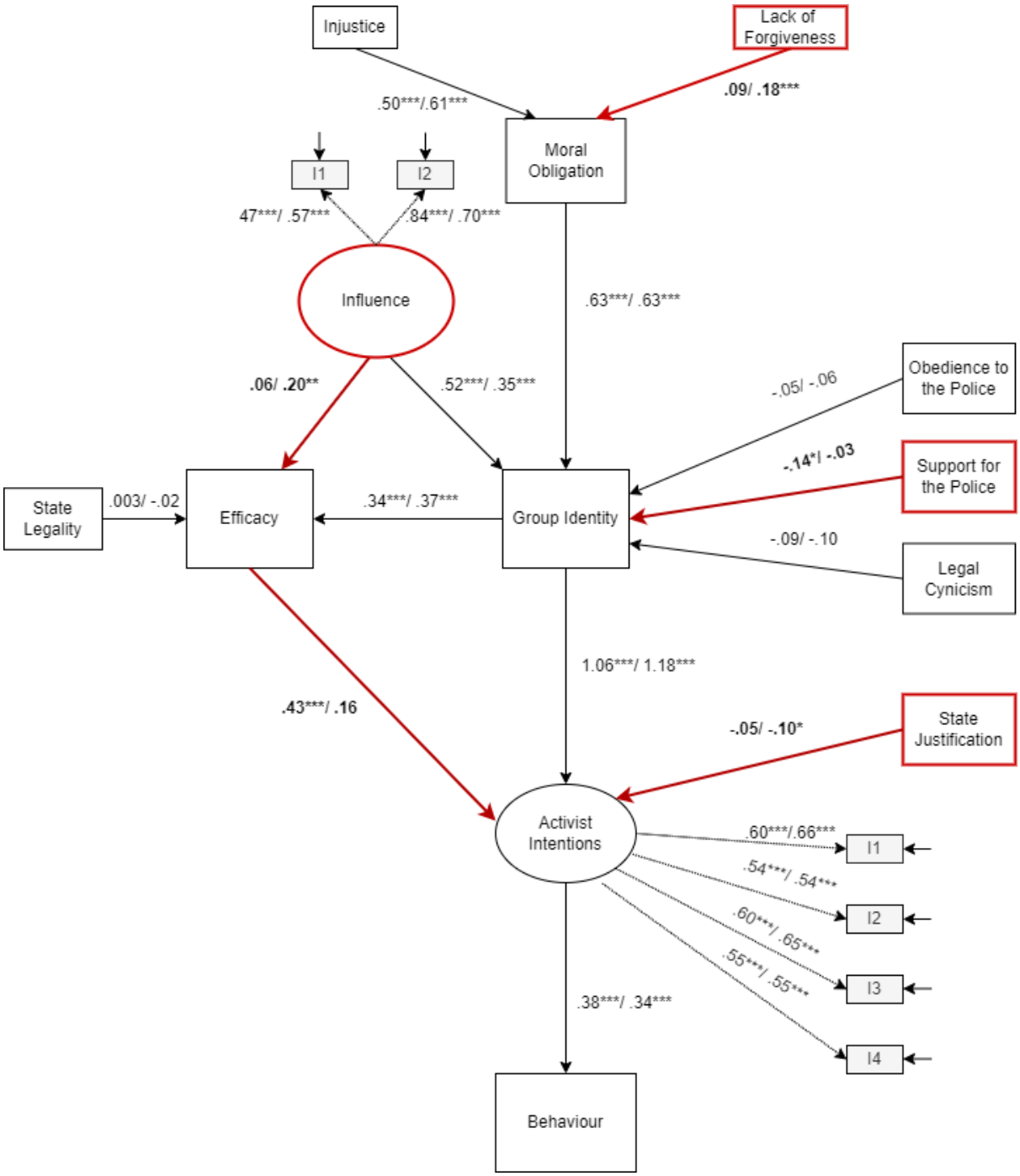
To investigate differences in the way these dynamics develop in the UK and the US, the model shown in Figure 2 underwent a group analysis using country as the grouping variable. As a preliminary step, measurement invariance was tested using the equaltestMI package (Jiang et al., 2017). Measurements of invariance assess whether a construct has similar meaning across groups. The $\chi^2 diff$ statistics for configural (whether loadings of each construct are supported), metric (whether each items contributes to a similar degree to the construct), scalar (equivalence of item intercepts) and residual invariance returned significant differences for scalar and residual invariance. However, for each step of the sequence Δcfi was .001 and .008, respectively. Since this difference is < .01 (Cheung & Rensvold, 2002), it is reasonable to assume good measurement fit for each of the groups.

Next, the structural models were performed for activist and radical intentions using country as a group variable. A test of the equivalence of regression coefficients across the countries was non-significant, $\Delta\chi^2(14) = 16.32$, $p = .29$. This result suggests that the USA and the UK does not substantively differ in the general model. Then, the model of activist intentions was fitted by separating the data out into UK and US and showed an adequate fit, $\chi^2(190) = 332.44$, $p < .001$, $\chi^2/df = 1.75$, CFI = 0.97, RMSEA = .05 (90% CI [.043, .062]). Figure 4 presents the unstandardized estimates across countries. As can be seen in Figure 4, there were differences in the beliefs that influence the group processes across countries. There were differences in beliefs for the police and democratic governance, as well as their preparedness to forgive institutional actors for their wrongdoings. Indirect effects by country and standardized estimates for all direct effects are presented in Appendix B. Group analysis of a radical intention model by country showed poor fit on the data, $\chi^2(132) = 299.09$, $p < .001$, $\chi^2/df = 2.27$, CFI =

0.82, RMSEA = .07 (90% CI [.058, .079]). Despite the fact that the same behavioural outcome was found between the US and the UK, the supporting belief system (forgiveness, support for the police, democratic governance) and group processes (collective efficacy) that influenced this action differed. Thus, Hypothesis 5 was confirmed.

Figure 4

SEM Estimates for Activist Model by Country



Note. Unstandardised estimates of UK parameters are presented before the slash. Unstandardised estimates of US parameters are presented after the slash. The red lines represent the differences between the countries. *** $p < .001$, ** $p < .01$, * $p < .05$.

Power Analysis

Power analysis was conducted a posteriori based on the RMSEA of the structural models. The results indicated a power of .99 for the overall model, power = .99 for the UK model, and power = .94 for the US model. Hence, our sample size was adequate.

Post-hoc Analyses

To investigate which actions are perceived as collective and radical, we administered a post-hoc questionnaire constructed by the key actions reported in the text box. The questions are presented in Table 5. After informed consent was given, 41 participants (M_{age} = 29.17 years, *SD* = 7.39, Range: 18-51 years) who had not taken part in the main survey, were asked to state the extent to which they agreed that the proposed actions were normative (in line with social expectations), collective, individual and ideologically driven in scales ranging from 1 (*totally disagree*) to 7 (*totally agree*). Table 5 presents the estimates from a series of one-sample T-tests that was conducted to test participants' response tendencies. Since a score of four corresponds with "*neither agree/nor disagree*", we used this score as the test value. Participants' reported non-normative actions included initiating a revolution, anti-capitalist actions, using multiple identities, and taking action in your own hands. The latter confirmed the pro-radical character of our behavioural measurement. As can be seen in Figure 5, the results support our perception of the behavioural outcome as an individuated act of pro-radical support with collective consequences.

Table 5

Means, Standard Deviation and T- tests Results for the Collective, Ideological, Normative, and Individual Component of the Proposed Actions

	Collective			Ideological			Normative			Individual		
Question Number	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)
1. Using secure encrypted messaging apps and alternative email accounts.	3.93	1.40	-.33	4.83	1.20	4.42***	4.78	1.49	3.35**	5.34	1.24	6.94***
2. Speaking out against it to raise awareness.	5.51	1.40	6.92***	5.63	1.45	7.24***	4.88	1.31	4.30***	5.76	1.20	9.37***
3. Protesting in masses.	6.49	.71	22.39***	5.61	1.12	9.24***	3.93	1.46	-.32	3.88	1.81	-.43
4. Arguing against it via online social media.	4.73	1.57	2.99**	4.51	1.75	1.88***	4.81	1.69	3.05**	5.66	1.18	9.04***
5 Distributing flyers for issues of privacy violation.	5.05	1.52	4.43***	4.78	1.35	3.70**	4.51	1.49	2.21	5.07	1.42	4.84***
6 Starting a revolution.	6.32	.82	18.10***	5.81	1.71	6.77***	2.52	1.22	-7.40***	3.73	1.92	-.89
7 Educating people on why privacy protection is important.	5.85	1.20	9.93***	5.66	1.24	8.58***	5.56	1.36	7.34***	5.12	1.49	4.83***
8 Demanding transparent democratic processes.	5.76	1.20	9.37***	5.71	1.12	9.73***	5.10	1.46	4.82***	4.81	1.55	3.3***
9 Stopping companies lobbying the government	5.69	1.21	8.88***	5.24	1.34	5.96***	3.76	1.48	-1.06	3.63	1.67	-1.40

Table 5 (*Continue*)

Question Number	Collective			Ideological			Normative			Individual		
	M	*SD*	*t*(40)	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)
10 Boycotting large companies and banks.	5.85	1.22	9.76***	5.17	1.66	4.52***	3.71	1.52	-1.23	4.42	1.75	1.52
11 Putting pressure on public delegates and experts to solve the problem.	5.63	1.20	8.73***	4.90	1.39	4.15**	4.83	1.36	3.91***	4.42	1.58	1.68
12 Ensuring a united front in terms of elections.	5.81	1.21	9.56***	5.05	1.45	4.64***	4.66	1.41	3.00*	3.34	1.74	-2.42
13 Getting a new government together.	6.15	1.11	12.40***	5.34	1.44	5.96***	3.39	1.58	-2.47	2.95	1.64	-4.09***
14 Taking action into your own hands and having multiple identities.	2.88	1.36	-5.27***	4.20	1.72	.73	2.49	1.33	-7.31***	6.02	.99	13.13***
15 Refusing to engage in the capitalist society we live.	4.12	1.45	.54	5.61	1.28	8.04***	2.83	1.36	-5.52***	5.93	1.03	11.93***
16. Supporting legal reform.	5.46	1.31	7.18***	5.63	1.02	10.27***	5.07	1.27	5.40***	5.20	1.17	6.56***
17. Voting for a left-wing government.	5.20	1.17	6.56***	5.46	1.43	6.54***	4.56	1.23	2.93**	5.56	1.40	7.15***
18. Donating to political candidates who fight for the people rather than their self-interests.	4.39	1.82	1.38***	5.49	1.34	7.09***	4.44	1.58	1.78	5.63	1.46	7.16***

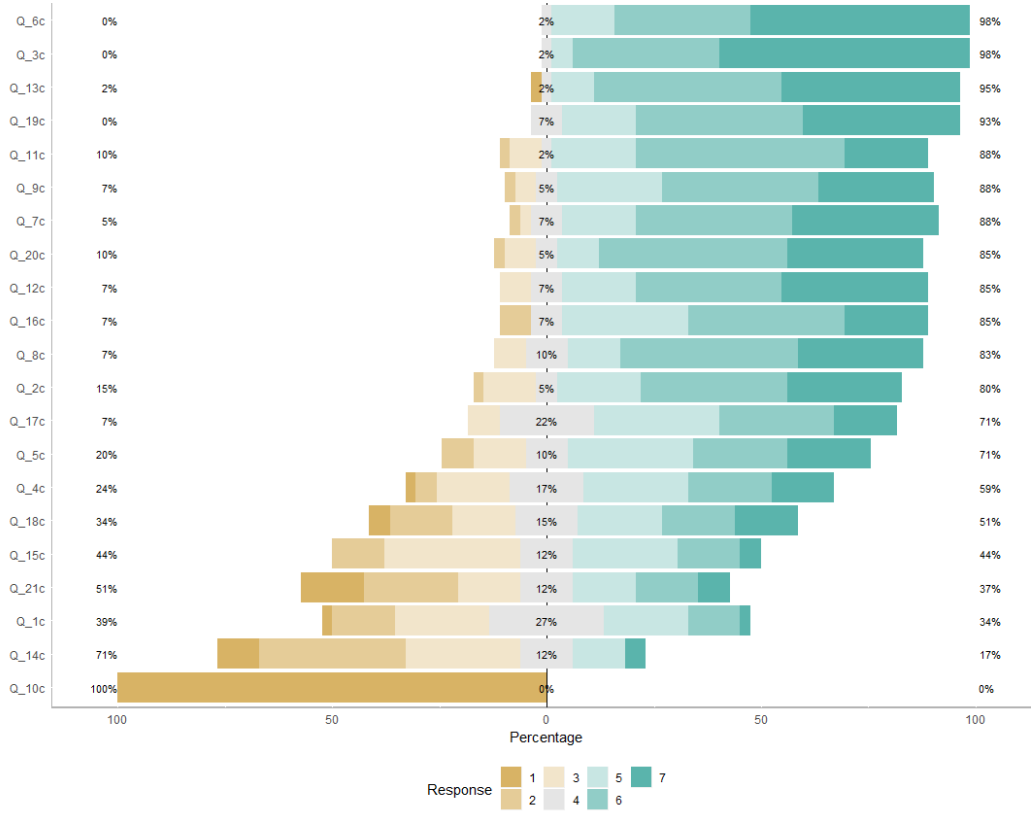
Table 5 (*Continue*)

Question Number	Collective			Ideological			Normative			Individual		
	M	*SD*	*t*(40)	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)	*M*	*SD*	*t*(40)
19. Rallies for anonymity and data protection.	6.05	.92	14.25***	5.49	1.19	8.03***	4.41	1.28	2.07	4.44	1.42	1.99
20 Government petitions.	5.81	1.29	8.97***	5.51	1.36	7.11***	5.39	1.14	7.83***	4.29	1.79	1.05
21. Doing nothing. There is nothing to do if there is nothing to hide.	3.49	1.89	-1.74	4.37	2.01	1.17**	4.27	1.5	1.11	5.66	1.37	7.74***

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. No symbol indicates a lack of statistical significance.

Figure 5

Reported Collective Component for the Proposed Actions



Note. Q_(number) represents the number of question reported in Appendix A. Responses ranged from 1 (*not at all collective*) to 7 (*totally collective*).

Discussion

The findings suggest that support for pro-radical action against institutional violations of privacy protection is more probable when (1) privacy violation is perceived to be unfair, (2) pro-radical ideas emerge from the ingroup and (3) radical actors are perceived to operate on the basis of a new shared identity. The results suggest that this shared identity enhances perceptions of efficacy regardless of the effectiveness of institutional bodies, such as the police. These processes were associated with activist intentions that facilitated tendencies to join a forum that promotes pro-radical action.

Yet, there were differences in processes related to the perceived collective efficacy between countries. In the UK, influence processes were not associated with collective efficacy, but collective efficacy was associated with the emergence of activist intentions. This means that two processes drive action intention in the UK. First, consensualisation and social validation positively influenced the shared identity, which drove action intention. Second, perceptions of collective efficacy were influenced by the shared identity and also drove action intention. This outcome is consistent with previous research that collective efficacy can be a form of group empowerment to action intention (Selvanathan & Lickel, 2019). By contrast, consensualisation and social validation in the US were associated with both a shared identity and perceptions of collective efficacy. This system of influence leveraged only the shared identity to drive action intention.

Our findings also suggest differences in the belief systems associated with the shared identity and action intention between the US and the UK. In line with research on the relationship between law enforcement perceptions and crowd behaviour (Drury & Reicher, 2009), we found that the UK's lack of support for the police contributed to the emergence of the shared identity. Although beliefs about the police did not influence

shared identity in the US, there was a significant association between a lack of satisfaction with democratic functioning and respect for human rights that directly influenced action intention. Thus, these results emphasize the influence of the broader socio-cultural context on group processes to pro-radical action against institutional privacy violations. The following study adds to these findings by exploring mass-level behavioural trends relative to surveillance and privacy violation in the UK and the USA over time.

Study 3: A Macro-Assessment of Online Searching for Surveillance Topics

Supporting pro-radical action against institutional privacy violation is only one among various online behaviours that can predict behavioural shifts. Online search behaviours have also shown changes after the implementation of surveillance practices. For example, Marthews and Tucker (2017) compared search data before and after a mass surveillance program by the National Security Agency in 2013. They investigated three types of search terms, those derived from a Department of Home Security list, a neutral list, and an outsourcing list of potentially embarrassing search terms. After the program, US users tended to reduce their searches for sensitive terms, such as health-related terms, and information that did not align with government rules (Marthews & Tucker, 2017). Accordingly, individuals tended to view fewer Wikipedia articles on terrorist-related issues or extremist groups (Penney, 2016). However, these studies do not explain how real-life privacy violations affect searching for topics of surveillance and privacy protection *per se*. Prior research showed using self-reports that past exposure to data breaches and online crime increased opposition to the use of Dark Web technologies, whereas growing privacy concerns and censorship tended to increase support for these technologies (Jardine, 2018). Rather than self-reports, Study 3 used behavioural data, specifically Internet search data to investigate over-time changes in

online searches for topics of surveillance and privacy violation in the US and the UK, and, by implication, online macro-behavioural trends of engagement with pro-radical contents cross-culturally.

Given the popularity of Google search engine with a market share of 87.35% (Statista, 2020), Google search data can be representative of mass trends in online searching behaviours because they serve as a proxy of the amount of public attention that a given object is likely to have received at a point time (Iyengar & McGrady, 2007). Thus, Study 3 was an exploratory study that utilised the available Google search data to examine (1) *information seeking for topics related to surveillance and privacy violation over time*, (2) *whether real-life events relevant to these practices affect the magnitude and duration of the online searches*, and (3) *transnational differences in online searching behaviours*. In this way, Study 3 sought to explore how societal incidents influence short-term public engagement with topics of surveillance and privacy violation and their consequences for long-term shifts in online behaviour across different cultures.

Methods

Data Collection

Google search data were collected using Google Trends, a publicly available tool that provides a normalized index as a proportion of all searches for user-specified terms on Google search providing geospatial and temporal patterns. Google produces the number of searches for a selected point in time in a specific location (globally, country, state, town). It provides a relative search volume (RSV) which is the total search volume for a term in a given geographic location divided by the total number of searches in that region at a point in time (Mellon, 2014; Swearingen & Ripberger 2014).

Scores for the final index range from 0 to 100 where 100 represents the highest search rate for the term (Adamczyk et al., 2019). Other time periods obtain a score relative to 100. Data is available for all countries worldwide. The user can specify a search term (paired or unpaired) or a search topic, which expands the term in relevant concepts in all languages.

Instead of term searches, this study used topic searches because they have been found to be more reliable (Adamczyk et al., 2019). They were reported as weekly scores for the period from 3/01/2016 to 16/02/2020. The RSV for each of these topics was extracted on a national level for the UK and the USA. The study examined 6 search topics. The first was 'Mass Surveillance,' chosen as an indicator of a general interest in surveillance and its practices. The remaining five consisted of 'CCTV' and 'Encryption' which represent interest in self-protective measures, and 'Anonymous', 'Dark Web' and 'Hacktivism' which represent interest in pro-radical material. This is because at the time of data collection, the search for one of these topics (the Anonymous group, hacktivism, the dark web) would result in the others popping up as relevant searches, thus, increasing the probability of engaging with their content. In addition, actual searches for these topics included not only definitional information, but also action-related information. Therefore, the "pro-radical" characterisation does not imply pro-radical endorsements *per se* but rather an increased probability of exposure to pro-radical material.

To investigate the impact of real-life events relative to privacy violation on searches for these topics, four events were chosen that affected many people in both the US and the UK. The first was *the Million-Mask March of 2016* (November 2016), where thousands of people participated in protests in both countries that ended in violence. The other events consisted of three data breaches that harvested hundreds of

millions pieces of personal data and had socio-political ramifications, namely *the Equifax data breach* (September 2017), *the Cambridge Analytica scandal* (March 2018), and *the new Facebook data breach* (April 2019). Given the focus of the study on contextual influences, the starting point of the data breaches was taken to be the week in which the incident became public.

Analytical Approach

Changes in the predictive probabilities of people searching for these topics over time and across countries were examined with a series of forecasting models. ETS (Exponential smoothing) and ARIMA (Autoregressive Integrated Moving Average) models were tested and compared to identify the best predictive model, meaning the model of best accuracy. These models were chosen because they belong to different forecasting families and rely on different underlying assumptions meaning that, depending on the time series characteristics (stationarity, trend), one might provide more accurate forecasts that the other. While ARIMA investigates how previous observation affect future observations, ETS uses a weighted average over all observations as its prediction based on a constant parameter, which is known as smoothing parameter α (Hyndman & Athanasopoulos, 2018). For model selection, the following procedure was followed.

First, the RSV of each topic was converted into a time-series object. To train a model and test its performance on unseen data, each time-series object was divided into a train and test subset. The train data consisted of 75% of the time-series object (until the week commencing on the 30/12/2018) and the test data consisted of the rest 25% (from 06/01/2019 to 16/02/2020). The model that fitted the training data was identified using automated algorithms for ETS and ARIMA, respectively (Hyndman &

Athanasopoulos, 2018). The model of best fit developed from the training data was then forecasted to the test data. Forecasting accuracy of the existing data was tested using the Mean Absolute Scaled Error (MASE) and Root Mean Square Error (RMSE), which have been found to be more reliable with time series that include zero points (Hyndman & Athanospoulos, 2018; Shcherbakov et al., 2013). The lower the RMSE, the better the model accuracy. A MASE below 1 indicates small error rate in forecasting, hence, better accuracy. To forecast beyond this time period, the model of best fit was fitted on the overall time-series object. The fitted model was inspected for stationarity and lack of autocorrelation using tests, such as the Ljung-Box test (Kleiber & Zeileis, 2008), and graphical inspection. The final model was then forecasted for 150 weeks after the last reported week in the dataset.

To understand how real-life events affect searching behaviours, an interrupted time series analysis examined the duration of the effect of the 4 events on searching for the topics of interest. Dummy variables were created for a five-week period before the event (the fifth week was the week the event became public) and the 1st, 2nd, 8th, 18th and 24th week after the event. It was decided to use the first two weeks after the incident disclosure, and then have additive patterns of over a month, two months etc. However, the process stopped in the 24th week to avoid overlapping with another major incident of privacy violation. A Box-Jenkins approach (NIST/SEMATECH, 2019) was then used to identify the ARIMA model of best fit.

Results

Forecasting Models

Tables 6 and 7 provide the estimates for the US and UK ARIMA models, respectively. For reasons of economy, only the models with the best accuracy are

reported. As can be seen in these Tables, although there is a predicted increase in searching trends for ‘Mass surveillance’ in both countries, searching for all other topics tended to decrease in the UK, whereas US searching for ‘CCTV’ and the ‘Dark Web’ are predicted to increase.

In the US, forecasting for ‘Encryption’ showed that an ETS model was more accurate compared to an ARIMA model. An ARIMA (1,1,1)(0,1,1), which showed the better accuracy from the ARIMA models, yielded MASE = .56 and .88, RMSE = 4.68 and 5.46 for train and test data, respectively. An ETS (M, Ad, N) (Multiplicative, Additive damped, Non-seasonal) where α = .27, φ = .82, β = .002, yielded a MASE = .61 and .62, RMSE = 4.55 and 4.22 for train and test data, indicating that an ETS model improved model accuracy compared to the ARIMA model. The ETS model predicted an average RSV forecasted point of 56.22 for the next 150 weeks. The average RSV of the known data in the last 150 weeks was 60.79, suggesting a small drop in the predicted RSV for ‘Encryption’ in the US.

In the UK a similar fit in forecasted models occurred for ‘CCTV’ searches. An ARIMA (0,1,4) was found to be less accurate compared to an ETS model. The MASE for ARIMA was .41 and 1.08, RMSE = 3.97 and 8.95 for train and test data, respectively. However, MASE for the ETS model was .34 and .57, and RMSE was 3.18 and 5.13, respectively. This shows that the ETS model was more accurate in both train and test data. The results yielded an ETS (M, N, N) (Multiplicative, Non-additive, Non-seasonal) with α =.42, which predicted a forecast point of 81.65. The average RSV of the known data for ‘CCTV’ in the last 150 weeks was 81.97, suggesting a stable behavioural pattern in UK searching for ‘CCTV.’

Interrupted Models

Tables 8 and 9 present the results for the changes in search behaviour for a period of 6 months after the proposed events in both countries. Results for the US showed that although people tended to reduce their searches for ‘Anonymous’ and ‘Hacktivism’ after the Million-Mask march, their interest in ‘Hacktivism’ along with ‘Dark Web’ was revived after the 2019 Facebook breach. ARIMA models for US searching for self-protective measures showed no significant differences before and after these events, all $p > .10$.

By contrast, UK results depict a cumulative trend of lasting searching behaviours after these events. For example, the latest Facebook data breach predicted an increase of approximately 41% in UK searches for ‘Anonymous’ compared to a five-week period before the data breach. By contrast, searches for ‘Encryption’ showed a decrease of 35% after this data breach.

Table 6

ARIMA Models for the US

Index	ARIMA		Estimate	*SE*	*z*-score	*p*-value	Accuracy (MASE)	Accuracy (RMSE)	Average RSV	Average Forecasted Point
Hacktivism	(1,1,2)(1,0,0)[1]	AR1	.66	.26	2.55	.01	.69/.58	13.64/10.52	28.15	28.98
		MA1	-1.38	.32	-4.34	< .001				
		MA2	.40	.30	1.34	.18				
		SAR1	.20	.07	2.65	.008				
Dark Web	(0,1,2)	AR1	-.34	.06	-5.31	<.001	.27/.25	7.30/4.93	55.03	57.68
		MA1	-.30	.06	-4.68	<.001				
Anonymous	(1,1,1)	AR1	.57	.07	7.91	<.001	.43/.22	8.23/2.40	13.42	10.95
		MA1	-.92	.03	-28.73	<.001				
CCTV	(0,1,2)(1,1,0)[1]	MA1	-.60	.08	-7.57	<.001	.32/1.17	2.81/7.83	69.53	71.44
		MA2	-.21	.09	-2.50	.012				
		SAR1	-.42	.09	-4.93	<.001				
Mass Surveillance	(1,1,1)(0,0,1)[1]	AR1	.23	.08	2.91	.004	.80 / .89	14.75/17.13	32.54	42.04
		MA1	-.94	.04	-25.52	<.001				
		SMA1	.25	.09	2.86	.004				

Note. [1] Second parenthesis is indicative of the seasonal values. Seasonal ARIMA models consider the number of time periods in a cycle. Average RSV is the average of the last known 150 weeks.

Table 7

ARIMA Models for the UK

Index	ARIMA		Estimate	*SE*	*z*-score	*p*-value	Accuracy (MASE)	Accuracy (RMSE)	Average RSV	Average Forecasted Point
Hacktivism	(0,1,2)	MA1	-.70	.06	-11.65	<.001	.66/.57	11.82/9.05	19.12	17.41
		MA2	-.18	.06	-2.98	.003				
Dark Web	(0,1,4)	MA1	-.55	.07	-8.07	<.001	.58/.45	10.38/6.30	43.63	40.93
		MA2	-.20	.08	-2.67	.008				
		MA3	.05	.08	.62	.54				
		MA4	-.20	.07	-2.92	.004				
Anonymous	(1,1,1)	AR1	.51	.07	7.70	<.001	.54/35	7.96/3.40	15.6	13.11
		MA1	-.95	.02	-44,38	<.001				
Encryption	(1,1,1)	AR1	.26	.10	2.58	.01	.83/.60	7.21/3.64	30.75	27.28
		MA1	-.90	.07	-13.68	<.001				
Mass Surveillance	(0,1,1)	MA1	-.86	.04	-20.15	<.001	.73/.66	14.63/13.17	18.67	22.49

Note. [1] Second parenthesis is indicative of the seasonal values. Seasonal ARIMA models consider the number of time periods in a cycle. Average RSV is the average of the last known 150 weeks.

Table 8

Results of the Interrupted Time Series for the US Searching Trends on a Period of Time Before and After the Events Related to Privacy Violations

Event	Topic	ARIMA	Week	Estimate (%)	*SE*	*T*	*p*	95%CI
Million Mask	Anonymous	(2,0,0)	Prior	8.59	3.62	2.38	.055	[.01, 17.17]
			After					
			1st	-20.75 (-26.02)	13.67	-1.52	.18	[-53.15, 11.65]
			2nd	-37.17 (-43.64)	16.06	-2.32	.06	[-75.23, .89]
			8th	-70 (-72.17)	22.35	-3.13	.02	[-122.97, -17.03]
			18th	-102.83 (-82.38)	29.57	-3.48	.013	[-172.91, -32.75]
			24th	-119.24 (-95.98)	33.34	-3.58	.012	[-198.26, -40.22]
	Hacktivism	(2,0,0)	Prior	6.87	3.51	1.96	.10	[-1.45, 15.19]
			After					
			1st	-36.26 (-37.7)	13.90	-2.61	.04	[-69.20, -3.32]
			2nd	-46.15 (-43.07)	16.09	-2.87	.028	[-84.28, -8.02]
			8th	-65.93 (-62.83)	21.45	-3.07	.022	[-116.77, -15.09]
			18th	-85.76 (-65.09)	27.46	-3.12	.021	[-150.84, -20.68]
			24th	-95.66 (-85.67)	30.61	-3.13	.02	[-169.21, -24.11]
Equifax	Anonymous	(2,1,2)	Prior	-2.06	1.25	-1.65	.20	[-5.02, .90]
			After					
			1st	9.05 (39.26)	2.73	3.32	.045	[2.58, 15.52]
			2nd	9.44 (38.63)	3.84	2.46	.09	[.34, 18.54]
			8th	10.22 (32.74)	6.90	1.48	.24	[-6.13, 26.57]
			18th	11.32 (46.55)	8.10	1.40	.26	[-7.88, 30.52]
			24th	11.92 (47.83)	8.62	1.38	.26	[-8.51, 32.35]
New FB	Dark Web	(2,1,1)	Prior	-2.96	.60	-4.94	.008	[-4.38, -1.54]
			After					
			1st	9.27 (14.89)	1.52	6.15	.004	[.18, 12.87]
			2nd	12.22 (19.33)	2	6.12	.004	[7.48, 16.96]
			8th	19.5 (27.27)	2.98	6.55	.003	[12.44, 26.56]
			18th	26.23 (32.29)	4.03	6.51	.003	[16.68, 35.78]
			24th	29.54 (33.36)	4.45	6.63	.003	[18.99, 40.09]
	Hacktivism	(3,0,0)	Prior	-2.78	.64	-4.32	.008	[-4.30, -1.26]
			After					
			1st	9.10 (22.14)	2.61	3.49	.018	[2.91, 15.29]
			2nd	7.81 (16.34)	2.93	2.66	.045	[.87, 14.75]
			8th	5.25 (23.60)	3.78	1.39	.22	[-3.71, 14.21]
			18th	2.63 (8.88)	4.76	.55	.60	[-8.65, 13.91]
			24th	1.51 (7.36)	5.26	.29	.79	[-10.96, 13.98]

Table 9

Results of the Interrupted Time Series for the UK Searching Trends on a Period of Time Before and After the Events Related to Privacy Violations

Event	Topic	ARIMA	Weeks	Estimate	*SE*	*T*	*P*	95%CI
Million Mask	Anonymous	(1,1,1)	Prior	3.40	2.10	1.62	.17	[-1.58, 8.38]
			After					
			1st	-31.99 (-38.55)	6.32	-5.06	.004	[-46.97, -17.01]
			2nd	-31.80 (-47.61)	7.88	-4.04	.01	[-50.48, -13.12]
			8th	-30.87 (-58.39)	11.51	-2.68	.044	[-58.15, -3.59]
			18th	-29.23 (-63.23)	15.44	-1.89	.12	[-65.82, 7.36]
			24th	-28.16 (-53.99)	17.55	-1.61	.21	[-69.75, 13.43]
	Mass surveillance	(2,0,0)	Prior	-3.36	1.41	-2.39	.05	[-6.70, -.02]
			After					
			1st	26.80 (38.95)	5.24	5.12	.002	[14.38, 39.22]
			2nd	28.32 (45.44)	6.17	4.59	.004	[13.70, 42.94]
			8th	31.37 (58.78)	8.43	3.72	.01	[11.39, 51.35]
			18th	34.42 (51.05)	10.94	3.15	.02	[8.49, 60.35]
			24th	35.93 (62.02)	12.24	2.94	.026	[6.92, 64.94]
Equifax	Dark Web	(1,0,0)	Prior	-9.96	3.00	-3.32	.013	[-17.07, -2.85]
			After					
			1st	16.13 (31.55)	12.02	1.34	.22	[-12.36, 44.62]
			2nd	26.38 (38.02)	13.80	1.91	.10	[-6.33, 59.09]
			8th	46.89 (49.94)	18.59	2.52	.04	[2.83, 90.95]
			18th	67.40 (57.41)	24.19	2.79	.027	[10.07, 124.73]
			24th	77.66 (59.44)	27.13	2.86	.024	[13.36, 141.96]
	Encryption	(4,0,0)	Prior	-1.00	.60	-1.67	.17	[-2.42, .42]
			After					
			1st	7.14 (19.76)	2.08	3.43	.027	[2.21, 12.07]
			2nd	9.09 (22.67)	2.51	3.62	.022	[3.14, 15.04]
			8th	13.07 (27.19)	3.34	3.92	.017	[5.15, 20.99]
			18th	16.98 (33.97)	4.23	4.01	.016	[6.96, 27.01]
			24th	18.99 (33.92)	4.68	4.06	.015	[7.90, 30.08]

Table 9 (*Continue*)

Event	Topic	ARIMA	Weeks	Estimate	*SE*	*T*	*P*	95%CI
Cambridge Analytica								
	Anonymous	(2,0,0)	Prior	-1.16	.29	-4.03	.007	[-1.85, -.47]
			After					
			1st	2.18 (13.47)	1.11	1.96	.10	[-.45, 4.81]
			2nd	3.03 (18.90)	1.29	2.34	.058	[-.02, 6.09]
			8th	4.72 (26.64)	1.74	2.72	.035	[.59, 8.84]
			18th	6.42 (31.44)	2.25	2.85	.029	[1.09, 11.75]
			24th	7.27 (34.18)	2.51	2.89	.028	[.42, 14.12]
	Dark Web	(2,0,0)	Prior	-8.13	2.72	-2.99	.024	[-14.58, -1.68]
			After					
			1st	8.91 (24.81)	10.97	.81	.45	[-17.09, 34.91]
			2nd	21.98 (45.81)	12.55	1.75	.13	[-7.76, 51.72]
			8th	48.12 (52.24)	16.61	2.90	.027	[8.75, 87.49]
			18th	74.26 (58.35)	21.28	3.49	.013	[23.82, 124.69]
			24th	87.33 (57.71)	23.74	3.68	.010	[31.07, 143.59]
	Hacktivism	(2,0,0)	Prior	2.94	.98	3.00	.024	[.62, 5.26]
			After					
			1st	-1.98 (-8.26)	3.88	-.51	.63	[-11.18, 7.22]
			2nd	-6.71 (-30.91)	4.49	-1.50	.19	[-17.35, 3.93]
			8th	-16.19 (-46.01)	5.98	-2.71	.035	[-30.36, -2.02]
			18th	-25.67 (-68.14)	7.67	-3.35	.015	[-43.85, -7.49]
			24th	-30.41 (-64.14)	8.55	-3.56	.012	[-50.67, -10.15]
New FB Breach								
	Anonymous	(1,0,0)	Prior	-1.19	.17	-7.07	<.001	[-1.59, -.79]
			After					
			1st	5.72 (26.34)	.67	8.58	<.001	[4.13, 7.31]
			2nd	6.27 (29.48)	.77	8.13	<.001	[4.45, 8.10]
			8th	7.37 (34.49)	1.05	7.04	<.001	[4.88, 9.86]
			18th	8.48 (41.41)	1.37	6.20	<.001	[5.23, 11.73]
			24th	9.03 (40.99)	1.53	5.88	.001	[5.40, 12.66]
	Encryption	(1,0,0)	Prior	.96	.38	2.54	.039	[.06, 1.86]
			After					
			1st	-4.99 (-15.13)	1.51	-3.30	.013	[-8.57, -1.41]
			2nd	-6.53 (-20.71)	1.74	-3.75	.007	[-10.65, -2.41]
			8th	-9.62 (-27.79)	2.34	-4.11	.005	[-15.17, -4.07]
			18th	-12.70 (-34.61)	3.04	-4.18	.004	[-19.91, -5.50]
			24th	-14.24 (-34.53)	3.40	-4.19	.004	[-22.30, -6.18]

Discussion. The findings show no major changes in people's searching behaviours for topics of surveillance and privacy violation in the US and the UK over time. Despite differences in beliefs about privacy (Etzioni, 1999), both countries showed that the issue of mass surveillance is likely to attract more of their attention in the following years. However, the data showed an increase in US searches for some topics of both self-protective and potentially pro-radical material. In the UK, the predicted probabilities of searching for these topics were found to either remain relatively stable or decrease.

Yet, real-life events relevant to these topics can alter searching behaviours nationally. The study has shown that the interference of these events or, better the frequency with which they occur elicit two different behavioural trends across these countries. On the one hand, the US results point to a progressive change in the duration and magnitude of searches for topics that increase the probabilities of pro-radical exposure. Although there was a short-term decrease in searching for these topics after the Million-Mask march, the subsequent data breaches increased people's searching for these topics. This sustained shift in searches was found over a period of at least six months after the incident, potentially because data breaches are a reminder of individuals' vulnerability to privacy violations. On the other hand, results for the UK suggest a gradual transition from searches for self-protective measures to searches for the 'Anonymous' and 'Dark Web' that last for a longer period of time. This result is consistent with recent research that found a lack of self-protective action on self-protective measures after the Facebook-Cambridge Analytica scandal in the UK (Hinds et al., 2020). Whereas in previous research individuals reported their opposition to the Dark Web after exposure to data breaches (Jardine, 2018), our investigation of

behavioural data suggested that they still seek more information for relevant groups and actions over time.

General Discussion

How people respond to online surveillance and privacy violations has challenged scientific research across disciplines. Echoing the debate over behavioural (in)action, psychological research has focused on the mechanisms involved in online privacy management (Koohikamali et al., 2017), individual differences (Sayre & Dahling, 2016), and differences in the group membership between those who employ surveillance and those under surveillance (O' Donnell et al., 2010a, 2010b; Stuart & Levine, 2017). Our studies expanded this previous literature by examining how surveillance practices and the contexts in which they apply shape social behavioural responses relative to these practices (e.g., Wu et al., 2019).

Adopting a biopsychosocial methodology that utilised cardiovascular behaviour, motor-sensory behaviour and social processes, Study 1 suggested that combining surveillance with symbolic terrorist threats elicits compliance with task requirements, which is likely to be deliberate. That is, differences in omission errors in a Go/NoGo task driven by the interaction between surveillance and symbolic terrorist threats were indicative of cognitive control. This deliberative choice was further supported on the attitudinal level by differences in the perceived (il)legitimacy of surveillance. When individual privacy was perceived to be protected, surveillance was reported to be less legitimate than in the case of perceived surveillance.

In Study 2, we shifted our focus to group processes associated with the emergence of pro-radical endorsements in response to institutional privacy violations. Across two countries, UK and US, individuals tended to provide online support for pro-

radical actions against privacy violations. Our structural models suggest that information disseminated via the Web regarding privacy violations by institutional bodies initiates feelings of injustice, which alongside political beliefs related to the government, trigger a moral obligation to act. This moral obligation becomes the basis for forming a new shared identity of privacy protection. Replicating previous literature on collective action (Thomas et al., 2012), the results showed that the formation of a shared identity of privacy protection is a significant determinant for online pro-radical endorsement. Collective efficacy, processes of consensualisation and social validation, as well as beliefs about the police, the law and democratic principles supported behavioural enactment, albeit differently across countries.

Study 3 explored cross-cultural mass-level behavioural shifts in online information-seeking about surveillance and privacy violation issues. The results showed that real-life events of privacy violation change people's search behaviour over time. Specifically, the British tend to shift from searching for self-protective measures to pro-radical topics (e.g., hacktivism), whereas Americans tend to shift from not searching for topics with pro-radical content to increased searching for information regarding these topics.

Theoretical and Empirical Contributions

Across three studies, we have shown how investigating the interdependency among different contexts provides a better understanding of the diversity in social responses to surveillance practices. This interdependency triggers different physiological and socio-cognitive processes, which complement one another. For example, Study 1 pointed to adaptive cognitive functioning (in attentional processes) in relation to societal practices. Moreover, our findings emphasise that embedded cultural

dimensions determine immediate responses to privacy violations leading to different behavioural responses. These differences were relevant to the belief system formed by the broader socio-political contexts in the respective country and the way online behaviours evolve within countries. On the one hand, we found differences in the support system of online influence processes. On the other hand, there were also differences in online searching patterns. These findings suggest that cultural variation should be emphasised as a driver of different behaviours and a driver of different processes, even when the behavioural outcome is the same. A systematic cross-country investigation of mass-level behaviours and underlying processes is likely to provide more insights into cultural influences on privacy violations than, for instance, a broader distinction between Western vs non-Western societies.

Empirically, our results contribute to the debate over behavioural discrepancies in response to surveillance in at least three ways. First, an investigation of micro-behaviours detects the processes that determine behavioural responses to surveillance but only when integrating the contexts to which it applies. In this way, cognitive markers can be used to assess behavioural responses to societal practices more objectively and complement traditional measurements, such as self-reports. Employing this approach in relation to context interdependency helps explain a shift from behavioural indifference or "apatheia" (Ellis et al., 2020) to compliance with social expectations as a strategic choice.

Second, this work advances research on collective action by testing a behavioural measurement of actively participating in decision-making for pro-radical action. While previous research has used behavioural measurements, such as signing repetitions (e.g., Thomas et al., 2014), voting behaviour (Otjes et al., 2020), joining a pro-radical forum in Study 2 demonstrated that problems of privacy violation may be

resolved on a social level through actively communicating action with an online pro-radical community. While a shared identity with other online users affects intentions to participate in virtual communities (Zhao et al., 2012), our research shows how a shared identity and vicarious interactions driven by affordances of online tools facilitate the emergence of radical influence and participation in virtual pro-radical communities (see Smith et al., 2020 for a similar argument in different contexts). Identifying the beliefs that constitute the support system of this influence process is important for understanding the intersection between online contexts and users' choices. Our findings delineate this support system.

Third, this paper adds to previous research by utilising big data to identify behavioural transitions in response to surveillance practices and privacy violations over time. Our findings suggest that as privacy violations increase over the years, so does the national interest in online material facilitating pro-radical exposure. This result unfolded in two forms, a *transformational* and a *transitional*. The former indicates a shift from less information-seeking to more information-seeking for content associated with pro-radical action. The latter describes a transition from information-seeking for self-protective measures to seeking information for materials that impose pro-radical forms of action, such as the 'Anonymous' and the 'Dark Web.' These behavioural trends align with the notion that public concern about privacy is triggered by events that reinforce public fears of privacy violations (Bennett & Raab, 2017). Although differences in online behaviours due to privacy violations between the US and the UK have been previously investigated (Bradford, 2019), our research is the first to our knowledge that identifies differences in transnational macro-trends for surveillance-related responses *per se* and in the social psychological factors that promote relevant online actions. Thus, the results demonstrate the importance of employing a longitudinal format to identify

such behavioural patterns, and they have shown how larger trends are underpinned by actions that happen within shorter time periods.

Limitations and Future Research

Relative to previous work, this paper (1) demonstrated how accounting for different contexts facilitates the emergence of different forms of online social behaviours relative to surveillance and privacy violation; (2) identified the biopsychosocial mechanisms relevant to these behaviours; (3) employed ecologically valid methods to assess over-time behavioural trends outside of experimental settings. However, some limitations need to be acknowledged.

First, Study 1 found no effect of impulsivity on the commission errors in the Go/NoGo task, even though this relationship has been previously reported (Aichert et al., 2012). However, in Aichert et al.'s study, only a slight variance in response inhibition was explained by impulsivity. Sánchez-Kuhn et al. (2017) suggested that, in fact, it is compulsivity and not impulsivity that predicts behavioural responses in the Go/NoGo tasks. Study 1 suggests contextual factors are more likely to explain these behavioural responses than individual differences in trait impulsivity and self-determination. When surveillance becomes salient, attentional resources are allocated on the basis of social demand rather than personality characteristics. Yet, it is currently unclear whether this shift in attention allocation is associated with emotional states in these contexts, such as mood or cognitive overload, because of the perception of being watched. We also need to be cautious about the lack of power when testing the interactive effect of exposure to terrorist threats and surveillance on commission errors. Although the power of the model does not allow for any interpretations or conclusions, an inspection of its individual effects, albeit not statistically significant, showed the

expected reversed relationship between surveillance and commission errors, which implies a similar tendency for cognitive control under surveillance. Future research could investigate in more detail the underlying processes that regulate behavioral responses to surveillance.

Second, although Study 1 uses the intergroup threat theory (Stephan & Stephan, 2000) as its theoretical foundation, the terrorist threat messages have not been controlled for some aspects of group characteristics, such as religion or ideology. This does not align with the theoretical concepts the messages aimed to represent and may have added confounds to the design. For example, terrorist rhetoric did not influence participants' physiological arousal (i.e. heart rate acceleration) may be associated with the operationalisation of terrorist threats. Indeed, appraisal theories of emotion posit that heart rate acceleration is associated with emotional regulation such that physiological arousal in response to threat is a means of adaptive coping with the perceived threat (Appelhans & Luecken, 2006). Although a lack of empirical evidence for the effect of exposure to terrorist messages on physiological arousal can be explained by these confounding factors, another body of research has shown that re-exposure to threatening messages reduces their unexpectedness leading to habituation (Berlyne, 1966)- a psychological defence against the intensity of a negative emotion. Given that the rhetoric used in Study 1 has been largely reproduced online, habituation may be another explanation for the lack of evidence on the relationship between terrorist threat and physiological arousal. Further research is needed to understand whether and how terrorist threats affect physiological arousal in relation to privacy and surveillance practices.

Third, the cross-sectional nature of the data presented in Study 2, as well as the nature of structural equation modelling, do not allow general conclusions about

causality. However, the rationale relied on previous research which has confirmed that causal assumptions implicit to our study can be reasonably made (e.g., Thomas et al., 2009, 2012). Regarding the validity of our behavioural measurement, the post-hoc results suggested that 'taking action in your own hands' was perceived to be non-normative, therefore, confirming the pro-radical character of the action. Behavioural patterns of searching for topics that consisted of pro-radical content also provided support for this interpretation.

Forth, whether the interactional capacity of online contexts facilitates influence processes in Study 2 was investigated using a quasi- rather than actual manipulation. However, this manipulation included information that is frequently posted online to initiate some form of action and is in line with previous research looking into the dynamics of radical collective action (Thomas et al., 2014). Future research could benefit from applying new technologies to investigate the impact of technical infrastructure on group processes. Another possible direction for future research is to identify the contextual factors and psychological processes that provoke action of those who share radical intentions on the issue compared to those with activist intentions. Study 2 contributes to the psychological processes associated with activist intentions. This is because the construct of radical intentions, as measured by ARIS (Moskalenko & McCauley, 2009) tends to define radical intentions alongside the dimension of violence. Instead, the proposed action in Study 2 was presented as an active pursuit of social change against governmental privacy violations (Capelos et al., 2017) rather than an explicitly violent form of action. In that sense, our findings are consistent with recent research that described non-normative and non-violent forms of collective action as constructively disrupted (Shuman et al., 2020).

Fifth, one limitation of conducting an empirical analysis with Google Trends data is that the data are normalised, which does not allow conclusions regarding the absolute size of the investigated effects. Previous research has suggested that raw data can be collected from other sources like Google Trends, such as comScore's Search Planner (Marthews & Tucker, 2017). Although this database provides absolute numbers of clicks, it is a US database. Rather, our findings show that accounting for simultaneous contextual and cultural variation is useful for identifying a range of online behavioural patterns. Future research needs to expand this initial evidence by investigating searches for these topics in other search engines across cultures, such as Bing and Baidu, and in relation to different online and offline events.

Practical Implications

Regarding the applied implications of this research, the findings have relevance for launching new Internet policies and government initiatives because they show how adaptive human behaviour can be in response to these institutional practices. By using different levels of analysis, our research provides new insights on the ways people may become resilient or responsive to disruptions to data protection over time and cross-culturally. The interdependency among online contexts and broader social contexts are sensors of new challenges within current societies and, thus, our results can be an enriching resource for policy debate. They can also inform online platforms that promote actions against privacy violations and data exploitation, such as privacyinternational.org, and relevant awareness campaigns. Our findings suggest that increasing interest in issues related to mass surveillance and the systematic occurrence of data breaches give prominence to online social action against privacy violation. As such, these platforms are likely to attract more online users.

Results from Study 2 indicated that opening online discussions against these violations, demanding transparent processes and legal reform, along with suggestions for action aiming for swift change, were among the most reported solutions for dealing with privacy violations. In marketing relevant campaigns, online platforms could contribute to developing capacity-building for initiatives that account for the social aspects of surveillance-related online phenomena. Our research identifies a series of psychological antecedents that facilitate this capacity-building. When relevant actions are proposed on the basis of a shared identity for privacy protection, they are more likely to be endorsed and supported. By adapting their campaign designs and communication strategies to the shared identity, these platforms are more likely to appeal to users and increase commitment. By utilising the interactional capacity of online contexts and allowing opinions to be heard, network building for social action is enhanced. Yet, our findings suggest that cultural awareness or better awareness of differences in belief systems and behavioural trends surrounding the issue of privacy violations could contribute to more inclusive and better-coordinated actions in response to the violations.

This paper highlights how combining online societal experiences, broader socio-political situations, and group processes shape online behaviours that have social ramifications for the issue of privacy violation. Rather than focusing on behavioural changes in taking self-protective actions, such as reducing online information disclosure (e.g., Masur & Trepte, 2021), our research accentuates the social component of surveillance and privacy violation and identifies emerging patterns of online activity that range from compliant behaviours to engagement with pro-radical online contents relative to privacy violations. As another social behaviour, this online activity manifests itself strategically, is shaped and re-constructed by complicated social psychological

processes, and evolves over time as a consequence of immediate and broader contextual influences. Thus, adopting a contextual approach that combines cyber-physical, social, cultural infrastructure and group processes may benefit research on the dynamic changes of social behaviour online.

Endnotes

1. Further analysis indicated that we would need to add more than 225 participants per condition to achieve a power of 80% for this model. Given the time constraints and logistics of a PhD programme, this was not considered to be feasible.
2. Milliseconds were calculated by taking the exponential of the coefficient reported in Table 1. By using a log transformation, residual distribution was corrected (Shapiro test, $p > .09$).
3. Normality for violent intentions was corrected after the transformation, $p = .14$.
4. Scales for shared identity and democratic values included items with different range of datapoints. These items were scaled using: Y = (X-Xmin/Xrange)n, where Y is the adjusted scale, X is the original, Xmin is the minimum observed value on the original scale and Xrange is the difference between the maximum and minimum potential score on the original scale, and n the upper limit of the rescaled scale. The CFA outcome is the same with the scaled and unscaled outcome. Rescaling was used to avoid misspecifications in the structural model.

Chapter 3

How do Social Inclusion/Exclusion and Radical Narratives Shape Radical Endorsement?

The results in Chapter 2 suggested that when privacy violations or authority surveillance become salient, people start to confirm to societal expectations of appropriate behaviour (Study 1), endorse pro-radical forms of action (Study 2), and become more likely to engage with radical groups or materials against privacy violations over time (Study 3). The behaviour that prevails depends on the contextual medley in which surveillance and privacy violations applies (e.g., if it's relative to terrorist rhetoric, online social interaction, data breaches or across cultures). These findings point to the diversity of human responses to practices of surveillance and privacy violations but also their capacity to introduce social change.

On a societal level, surveillance practices tend to be disproportionally applied on specific groups (Blackwood et al., 2013) leaving them more marginalised than others (Back et al., 2018; Williams, 2007). When people witness this mistreatment by the authorities, especially when taking place in public, they shape perceptions about their inclusion or exclusion from the community (Jackson et al., 2012; Talbot & Bose, 2007), because how authorities exercise their power communicates how people are seen by society as a whole (Sunshine & Tyler, 2003). According to research on procedural justice, fair procedures from authorities entail the symbolic message of inclusion, of being a respected and valuable member of a group or society (De Cremer & Blader, 2006). An unfair procedure affects self-worthiness and signals social exclusion (Lind & Tyler, 1988). To avoid negative consequences associated with unfair treatment, such as a social exclusion, and maintain social inclusion, individuals are likely to adhere with radical groups who aim to restore justice (Bal & van den Bos, 2017). Chapter 3 tests this hypothesis by examining how social inclusion/exclusion and exposure to radical messages influence different forms of radical endorsement and identifies the

biopsychosocial mechanisms and group processes that are likely to drive this behavioural outcome.

Abstract

Five pre-registered studies investigated how social exclusion/inclusion shapes initial steps of political radicalisation after exposure to radical narratives. In Experiments 1 to 4 (total N = 516 British nationals), radical narratives were induced in response to (1) a hate crime incident, (2) Brexit, and (3) vote denial in European Elections, while in Experiment 5 (N = 95 US nationals), radical narrative was induced in response to climate change. Results showed that social inclusion elicited online support for radical campaigns when combined with online radical narratives from the ingroup, and when it derives from a collective experience. Social exclusion elicited online support for a reactionist campaign when combined with exposure to a radical message from the outgroup. Individuals' existing belief system and group processes determined the direction of the behavioural change cross-culturally. The findings provide new insights on the contextual influences that drive political radicalisation. Engaging with radical behaviours is a dynamic, contextually dependent process that affects, and is affected by societal practices, the broader socio-political context and emergent group affiliations.

Keywords. Radicalisation, group processes, identification, context interdependency

How do Social Exclusion/Inclusion and Radical Narratives shape Endorsement of Radical Action?

Social inclusion and social exclusion are complex, multi-dimensional phenomena inherently associated with one's (in)ability to participate in social activities and relationships (Levitas et al., 2007). Their evolving nature intertwines with cultures, political and social institutions. These contexts collectively shape norms, values, and societies. Yet, the effects of context interdependency on social behaviour have been overlooked. Previous research has shown how social inclusion and exclusion have different behavioural consequences for individuals from collectivist versus individualist backgrounds (Pfundmair et al., 2015), their effect in relation to specific social matters, such as racial prejudice (Williams et al., 2003), and intergroup conflicts (Williams et al., 2000), as well as the ability of social exclusion to impose a willingness to engage with extreme groups (Hales & Williams, 2019). In the present research, we adopted a contextual approach that accounted for the effects of social inclusion and social exclusion on radical endorsement while considering the immediate online experiences context, the broader socio-political situation, and the national culture in which they apply. In this way, we tested how concurrent contextual dynamics affect online pro-radical actions for swift social change and the direction of this change. We further sought to identify the psychological processes that determine the different forms of online radical endorsement.

The degree to which the context interdependency between social inclusion/exclusion and immediate online experiences promotes radical endorsements in a given socio-political situation is likely moderated by a range of physio-cognitive and group processes that were examined across five pre-registered experiments. Study 1 investigated how different forms of online narratives (terrorist or radical) intertwine

with societal exclusionary/inclusionary experiences to affect biopsychosocial behaviours in the context of a hate speech incident. Study 2 provided additional evidence on the context interdependency of the radical endorsement in Study 1 by investigating socio-cognitive processes of influence. Study 3 examined the role of identity in endorsing radical action. Specifically, it investigated how the interplay between social inclusion/exclusion and the perceived identity of the source of radical rhetoric (ingroup/outgroup) affects radical endorsements in the context of Brexit. Study 4 expanded the scope of this research by testing whether the perceived inclusion/exclusion of others rather than oneself affects individual radical behaviour against vote denial in the European elections. Following this, Study 5 tested the cultural consequences of the effect of context interdependency (social inclusion/exclusion and radical rhetoric) on support for radical action for climate change. Studies 3 to 5 further explored how these context combinations determine differences in the group dynamics that influence radical endorsements across the political spectrum. The studies in this article have been pre-registered under the Open Science Framework. Materials, data, and preregistration are available at: https://osf.io/29x5n/?view_only=a83257a63d004b11af21b46cac226e59

Behavioural Responses to Social Exclusion and Social Inclusion

Social exclusion, a state of disadvantage in which individuals' participation in group, social or political activities is limited, has been identified as a contributing factor to radicalisation (McCauley & Moskalenko, 2011; Wright-Neville & Halafoff, 2010). Social exclusion increases interest in joining extreme groups (Hales & Williams, 2019), and willingness to engage in extreme behaviours in populations vulnerable to radicalisation (Pretus et al., 2018). After an exclusionary experience, there are different forms of extreme narratives that are likely to elicit radical endorsements. Previous

research has shown that exposure to terrorist messages after an exclusionary experience increases the likelihood of radicalisation (McCauley & Moskalenko, 2011). Accordingly, exposure to a radical message on a specific socio-political issue after an exclusionary experience is likely to elicit adaptive attitudes towards the radical source (Bäck et al., 2018). Both types of messages (terrorist and radical) use rigid narratives in which they ignore viewpoints that contradict their goals (Hafez & Mullins, 2015) and show estrangement from the status quo and rejection of political practices (McClosky & Chong, 1985). These shared qualities are important means of radical influence because they facilitate adherence to extreme groups and the adoption of their ideology (van den Bos, 2018).

However, these types of messages differ in their ideological principles and the type of actions they promote in support of their ideologies. In comparing Al-Qaeda terrorists with non-violent radicals, both had experienced social exclusion, distrust of government, and hatred for foreign policy. However, terrorists were more likely to oppose Western values and adopt a belief system where violence is embedded, whereas radicals were more likely to have participated in some form of collective action and adopted ideologies that are not inherently violent (but may use terrorism as a method of violence related to specific ideological principles) (Bartlett et al., 2010; Crenshaw, 2011; Richards, 2014). This evidence suggests that i) both immediate societal experiences and the broader socio-political situation are likely to affect how these narratives are perceived and influence behaviour, and ii) a direct comparison between these narratives in the same context combination provides new insights in the underlying processes that shape different forms of radical endorsement. Thus, Study 1 sought to explore the combined effect of terrorist and radical messages and social inclusion/exclusion on radical endorsement.

Beyond radical engagement, social exclusion causes a range of aversive reactions (McDonald & Leary, 2005; Williams, Forgas, & Von Hippel, 2005). It relates to aggressive behaviours directed to the source of exclusion or even to innocent bystanders (Warburton et al., 2006), negative evaluations of the self and others (Twenge et al., 2001), social avoidance (Richman & Leary, 2009) and distance from the source of exclusion in the form of derogation (Bourgeois & Leary, 2001). One explanation for these effects draws on physio-cognitive processes. Social exclusion has been found to systematically reduce heart rates (Lackner et al., 2018; van der Veen et al., 2014), trigger selective attention processes, such attentional (dis)engagement to threat and attentional avoidance (Chen et al., 2017), and cognitive sensitivity to potential threats (DeWall et al., 2009) as a means of coping with the exclusionary experience. Yet, the biopsychosocial model of challenge and threat (BPS, Blascovich, 2008a; Blascovich & Tomaka, 1996) has found heart rate acceleration (Aylward & Robinson, 2017; Hildebrandt et al., 2016) as a coping response to threatening situations. One possible explanation for the mixed results is that the effects of a threat and social exclusion on heart rate tend to be tested separately or independently from the prevailing social-political situation. Adopting a contextual approach, Study 1 tested the interactive effect of type of narrative (terrorist, radical) and social inclusion/exclusion on physiological and attentional adaptability in relation to a hate speech incident.

By contrast, social inclusion has shown a reversed effect on both endorsing extreme behaviours and cognitive adaptability. For example, Troian et al. (2019) found that social inclusion inhibited violent extremist tendencies through decreased perceived anomia- a psychological state that includes feelings of meaninglessness, social isolation and self-estrangement (Troian et al., 2019). This is because social inclusion provides a sense of belonging (Williams et al., 2000), a shared identity with others in society (van

Prooijen et al., 2004) and a sense of fairness (Tyler, 1994). Being socially included elicits adaptive action preferences to social relationships and actions where the sense of belonging can be restored (DeWall et al., 2010; Maner et al., 2007). Yet, this means that individuals may conform to a new group in order to fulfil their inclusivity needs (Maner et al., 2007), to gain social approval (Knapton et al., 2015), or they may use this sense of inclusivity provided by the group to mobilise for social change (Drury & Reicher, 1999). In combination, this evidence suggests that not only social exclusion, but also social inclusion may promote radical endorsements. Therefore, we examined the psychological processes that contributed to certain forms of radical endorsement influenced by social inclusion/exclusion and exposure to terrorist or radical narratives across different socio-political and national cultural contexts.

Group Processes to Radical Support

Initial work on radicalisation has focused on identifying individual factors to radicalisation where the context was neither emphasised nor assessed (Crenshaw, 2011). This work has contributed to the formation of radicalisation-related risk assessment tools that aim to provide a psychological assessment of the individual without capturing the wider socio-political or cultural contexts (Knudsen, 2020). The only forms of contexts included in these assessments were related to personal experience and personal networks (Herzog-Evans, 2018). Accordingly, research in the psychological underpinnings of radicalisation has prioritised the effects of individual needs, such as the need for belonging, on radical endorsement without testing for the interdependency between the societal, socio-political, and national cultural contexts in which they occur. It follows that if radical endorsement is not context-driven, then an exclusionary/inclusionary experience combined with exposure to a terrorist or radical

message should predict radical endorsement even when the context is not specified. This hypothesis has been tested in Study 2.

Not only the context interdependency but also group relationships within these contexts tend to determine whether a radical action will be endorsed. People are more likely to be influenced by those from within their social group compared to those from an outgroup (e.g., Haslam, 2004). This is particularly the case with national identities, which form attitudinal responses to social inclusion and exclusion (e.g., McCrone & Bechhofer, 2008). Common national identification between a radical group and a target audience is likely to foster the latter's support for the radical group (Rieger et al., 2017). Therefore an ingroup versus outgroup radical narrative on the basis of national identity is likely to affect the direction of the radical outcome. Study 3 tested this hypothesis in the context of Brexit.

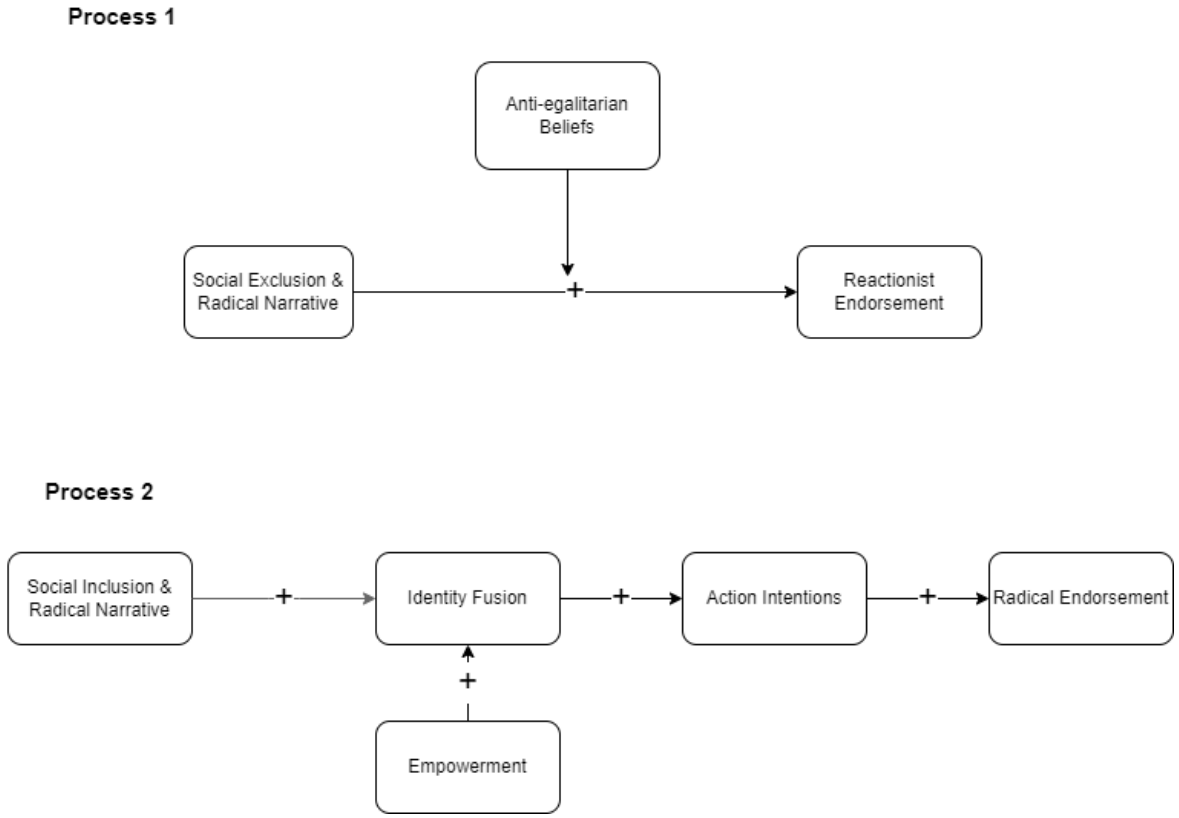
Another way group dynamics may influence whether a radical action will be endorsed is by determining the extent to which social inclusion/exclusion has been personally experienced or experienced by others who either share or do not share the same identity with the target's identity. In a recent study, when social identity was not salient, participants in an online toss game tended to actively include a target person who had been excluded by others (Lelieveld et al., 2020). However, when identities became salient, they instead decided to actively exclude an outgroup target when this exclusion was initiated by another ingroup member. Study 4 extended this research by examining whether the perceived exclusionary experiences of not only ingroup versus outgroup members, but also of both types of membership combined, facilitated individuals' radical endorsement to address the exclusion threat of others. The reasoning here is that, albeit not personally affected, individuals who perceive a common exclusionary experience between other ingroup and outgroup members may

develop a sense of inclusivity derived from the common exclusionary experience. As such, when a radical campaign advocates against the cause of exclusion, and this aligns with one's belief system, individuals who perceive this unfair treatment of others are more likely to support the radical campaign. Study 4 examined this hypothesis in relation to vote denial in the European Elections in 2019, while Study 5 added to this by investigating cultural differences in influence mechanisms to online radical support in relation to a US climate change campaign.

Theoretically, our investigation of the processes that underlie the relationship between the combined effect of social inclusion/exclusion with proximal (radical rhetoric) and distal contexts (socio-political matters and national culture) and radical endorsement is informed by Bal and van den Bos's (2017) conceptual framework on political radicalisation. The authors proposed that political radicalisation is a way of dealing with experiences of personal or socially unjust treatment. When an alternative voice, such as a radical group, addresses the injustice by rejecting the status quo, those who perceived that they have been treated unfairly are attracted to act in support of the voice. When a radical group is not available, individuals may either justify the existing socio-political system or maintain their rejection emotionally until the opportunity for a behavioural expression occurs. We adapt this framework to the context interdependency of social inclusion/exclusion and extend it to account for the group processes that may exert different types of radical adherence. The proposed relationships are presented in Figure 1.

Figure 1

Proposed Processes to Different Types of Radical Endorsement



Note. The use of + represents a positive relationship between variables.

When a radical group challenges the status quo, it often involves challenging the dominant frames of ideological reference (Blanz et al., 1998; Tajfel, 1981). If the challenging rhetoric is against one's beliefs for the status quo, there are two possible resolutions. First, individuals tend to respond with increased system justification (Bal & van den Bos, 2017; Jost et al., 2005). Even in cases where social exclusion places individuals in a disadvantaged position, system-justifying beliefs are still likely to emerge (Jost et al., 2003). It logically occurs that when individuals hold system justifying beliefs, they are less likely to endorse a radical action, even if context interdependency would support this choice, such as after an exclusionary experience.

Second, if the challenging rhetoric is against one's beliefs for the status quo, and individuals find themselves in an unexpected position, such as one imposed by social exclusion (Hess & Ledgerwood, 2014), then they may endorse an action that aligns with their belief system. That is, they may endorse another radical group that leans towards the same wing on the political spectrum. For example, holding conservative and authoritarian beliefs decreases people's aversion to right-wing extremist propaganda (Rieger et al., 2017). In this sense, holding anti-egalitarian beliefs should facilitate endorsement of a reactionist action when individuals are exposed to a radical narrative that is perceived to be against their beliefs, and combined with an exclusionary experience. This relationship is depicted in Process 1 of Figure 1.

A third way to expand the potential routes to political radicalisation is by adding another path to radical influence that accounts for inclusionary experiences. Bal and van den Bos (2017) argued that if a radical narrative is in line with one's beliefs for the status quo, individuals may adhere to the positions of the radical group to restore justice for unfair treatment. Further research found that this relationship instigates identity fusion (Swann et al., 2009), a form of alignment with the radical group that leads to strong relational ties. As shown in Figure 1, we tested the hypothesis that radical adherence does not derive solely from a perceived or experienced unfair treatment but may also emerge from the psychological consequences of being socially included. As a mobiliser for social participation, social inclusion may trigger radical actions for social change (Drury & Reicher, 1999). Consequently, we expected socially inclusionary experiences to drive identity fusion when both individual targets and the radical narrative mutually support the rejection of the status quo. This fusion with the radical group, then, triggers action intentions that predict endorsement of the actions proposed by the radical group. Process 2 in Figure 1 represents these identity processes. In line

with previous research that associated feelings of empowerment with the endorsement of collective actions (Selvanathan & Lickel, 2019), we further explored whether feeling empowered by the radical narrative boosts identity fusion. Studies 3 to 5 explore how these processes develop across contexts.

Study 1: Social Inclusion/Exclusion and Exposure to Terrorist/Radical Narratives

We investigated how experiences of social inclusion/exclusion in the context of hate speech affect physio-cognitive responses and social behaviour after exposure to a terrorist message or issue-specific radical message. Hate speech was chosen for two reasons: because of its increasing rise in online settings and the consequences for extremist behaviours (e.g., Matamoros-Fernandez & Farkas, 2021), and for reasons of realism. During the time of conducting the study, a real-life hate speech incident took place at the location where data were collected, which strengthened the salience of the socio-political context.

Given the mixed results on the physiological responses to social exclusion and perceived threat, we tested their interactive effect on heart rate. We expected that due to the intensity of the terrorist threats, heart rate acceleration is likely to exceed the reductive effect of social exclusion on heart rates.

H1: Participants in the socially excluded condition will display higher heart rates after exposure to the terrorist threatening message compared to participants in the control condition.

H2: Participants in the socially included condition will display lower heart rates after exposure to the terrorist threatening message compared to participants in the control condition.

At the cognitive level, sparse evidence using eye-tracking data suggest that social exclusion induces attentional biases and may initiate different selective

attentional processes (Chen et al., 2017). These processes are attentional engagement with threat, attentional disengagement from threat, and attentional avoidance. Engagement represents a faster visual orientation on threatening stimuli. Disengagement reflects the withdrawal of attention via the cessation of selection and preferential processing of a stimulus (Clarke et al., 2013), and avoidance refers to the preferential orientation towards locations others than the location of the threatening stimuli (Cisler & Koster, 2010). These processes are indicative of cognitive responsiveness to contextual demands. Thus, we expected that visual behaviour, reflecting attentional processing, would differ depending on the type of threat to which individuals were exposed after an exclusionary experience.

H3: Social exclusion induces longer reaction time to negative stimuli than the control condition.

H4: Participants in the socially excluded condition will show an increase in the attentional bias of disengagement, as indicated by an increase in scores of first fixation biases, after exposure to a terrorist threatening message compared to participants in the control condition.

Moreover, we expected our hypothesis to play out not just in participants' objective responses but also in how they responded to ambiguous visual targets of deviant behaviour. Visual selective attention affects legal decisions (Treisman, 2006) and subsequent judgements of guilt (Snyder et al., 2009). On a different level of processing, one's social identity can influence how the actions of ambiguous targets are likely to be interpreted (Krosch et al., 2013). In combination, eye movement patterns and national identification may influence the relationship between context integration (exclusionary status and exposure to a threatening message) and attitudes of punishment

and forgiveness towards a deviant target. In this way, we expected cognitive performance to regulate decision-making.

H5: Participants in the socially excluded condition will show harsher punishment and less forgiving attitudes towards the target after exposure to the terrorist threatening message compared to participants in the socially included condition, when they display more fixation and saccadic movements on the target's picture.

H6: Participants in the socially excluded condition will show harsher punishment and less forgiving attitudes towards the target after exposure to the terrorist threatening message compared to participants in the socially included condition, when they have a strong national identity.

Regarding social behaviour, our hypothesis is driven by empirical evidence that suggests positive self-attributions derive from social inclusion (Williams et al., 2013). If combined with a politically oriented radical rhetoric, socially included individuals are more likely to endorse radical behavioural preferences than violent or neutral (non-threatening) preferences. Assuming consistency between intention and behaviour (e.g., Ajzen, 1991; Stern, 2000), violent intentions should be predicted by something other than the effects of social inclusion and radical rhetoric, such as national identification (e.g., Ellemers et al., 1997).

H7: Participants in the socially included condition will show increased probabilities for radical endorsement after exposure to the radical message compared to participants in the control condition.

H8: National identification will be positively associated with the violent intentions participants reported supporting.

Methods

Participants and Design

An *a priori* power analysis in G*Power (Faul et al., 2007) based on the effect of exclusionary status and type of threat on social behaviour indicated 88 participants would be needed to detect a medium effect size of .15 with 90% power using an *F*-test of multiple regressions with two predictors and alpha at .05. Inclusion criteria for this study required participants to have no history of neurological or cardiovascular conditions (Eisenbarth et al., 2016) due to the measurement of heart rates, and no vision impairment, due to the collection of eye-tracking data. Because of the involvement of eye-tracking measurements in this study, there was an expected dropout rate around 5% for adults (Holmqvist et al., 2011). Thus, we recruited 99 British citizens via a University online participation system and reimbursed each £3.50 for their participation. Data were removed for 10 participants due to failures in eye tracking calibration (n = 9) or failure to complete more than half of the procedure (n = 1). The final sample of 89 participants (46 women, M = 21.47 years, SD = 5.48, Range: 18 – 48 years) were randomly assigned to a 2 (Symbolic Rhetoric: Terrorist/Radical) x 2 (Exclusionary Status: Social Exclusion/Social Inclusion) mixed-method design with a control condition.

Materials

For all studies reported in this paper, responses to self-report measures were made on a 7-point agreement scale ranging from 1 (*totally disagree*) to 7 (*totally agree*), unless otherwise stated.

Strength of National Identification. Participants' strength of national identity was measured using Cameron's (2004) six-item scale. Example questions include "*How*

much do you feel you identify with the UK?" Responses were made on a 7-point scale ranging from 1 (*far too little)* to 7 (*far too much*) ($\alpha = .71$).

Heart Rate. Participants' heart rates were measured with a wireless physiological data acquisition system: bioPlux. This system collects and digitises the signals from a Blood Volume Pulse (BVP) sensor in real-time and transmits these readings to a computer via Bluetooth. The BVP sensor measures cardiovascular dynamics by detecting changes in arterial translucency. Raw signals were recorded by using the open-signals software, sampled at 1000 Hz, whilst Interbeat intervals (IBI) were defined as beats per minute (bpm). In processing the raw data for the resting period, heartbeats below 40 were removed indicating miscalculation (Megen & Turner-Cobb, 2015). Lab conditions (space, noise, light) were controlled and kept consistent for all participants.

Rhetoric Messages. Participants were presented with either a terrorist or radical threatening message. Here the distinction was made to investigate how different types of symbolic threats influence physio-cognitive and behavioural responses. The distinction was based on non-state actors who consider themselves beyond the sovereignty of state actors and frequently use cyberspace to compete with one another (Colarik & Ball, 2016). Both messages use rigid and symbolic language and reject the status quo (Bal & van den Bos, 2017). Additionally, they both emphasise the group's capacity and power to create some form of disruption for a political cause. However, they differ in their ideological stance and the prevalence of violence as a means of influence. More specifically, these messages report symbolic threats either (1) against the Western belief system and norms derived (terrorist threatening message), or (2) against the government and practices that accentuate socio-economic disparities within the society (radical threatening message). The component of violence is more salient in

the terrorist message than the radical message. Both messages were constructed based on the rhetoric of these non-state actors that has been largely published and reproduced by national newspapers online (Stephan et al., 2005). For realism, they were presented as a screenshot of a national newspaper's official webpage, where identifying characteristics (e.g., name of the newspaper, adverts or other contents of the webpage) were blurred in order to encourage participants to focus on the main message. Both messages are presented in Appendix C.

Attentional Bias. Participants' attentional bias was measured with a dot-probe task (MacLeod et al., 1986), which tests selective attention to threatening information. Participants were presented with a fixation cross that appeared in the centre of the computer screen for 1000ms before they were presented with a pair of pictures for 500ms. One picture in each pair would disappear, and a dot would appear in its place. Participants were asked to verify the position of the dot by pressing "v" if it appeared on the left side of the computer screen and "b", if it appeared on the right side of the computer screen. The task (developed through Experimenter Builder) included 40 experimental pairs of one socially oriented threatening picture (e.g., attacks during protesting) and a neutral picture (e.g., an apple), as well as ten pairs of neutral pictures as a baseline, presented in random order. All pictures were selected from the International Affective Picture System (Lang et al., 2008). A trial was considered congruent when the dot appeared on the location of the threat-related stimulus, whereas a trial was considered incongruent when the dot appeared at the location of the neutral picture. Attentional biases occur when it takes longer to respond to the dot that appears at the location of the neutral picture in incongruent trials because of attention allocation on the negative picture. Mean reaction time scores for congruent, incongruent, and neutral trials were calculated for each participant.

Although Reaction Time indicates the degree of attentional biases, it cannot easily separate between the component processes (engagement with threat, disengagement from threat and attentional avoidance). To address this, we integrated eye movement measures into the task that allowed us to identify which component process is affected by the exclusionary status and type of threatening message. We measured participants' first fixation directional bias, first fixation durational and latency bias, as well as dwell time bias. We did this using an EyeLink Desktop 1000 eye-tracker (SR Research Ltd., Ontario, Canada). First fixation biases indicate the initial orientation of attention, whereas dwell bias indicates attentional capture and attentional avoidance. Appendix C provides information on the task design, oculomotor specifications and data preparation. Aiming to identify not only how attentional biases affect physio-cognitive behaviour, but also how patterns of visual behaviour inform decision-making for deviant suspects, participants' fixation and saccadic movements were recorded when looking at a neutral face picture of an ostensibly suspect of illegal activity. A pilot study, which was conducted to investigate the neutrality/ambiguity of the face picture, is presented in Appendix C.

Punishment. The extent to which participants would punish the suspect was measured with four items adapted from Kteily et al. (2014). An example item is, "*The suspect is entitled to the best legal counsel available*" (reverse coded). We also used 12 items adapted from Piazza's (2015) scale to capture participants' preferences for applying extreme interrogation and detention practices on the suspect. An example item is "*The police should hold the suspect indefinitely without charge*." The response scale ranged from 1 to 7 except of one item from Kteily et al. (2014). This item referred to the proposed sentence for the suspect that ranged from 1 (*maximum ten years)* to 4 (*life in prison without the possibility of parole).*In line with Kteily et al. (2014), we summed all

scores that ranged from 1 to 7 to compute the total index of punishment (α = .86) and treated the proposed sentence as a categorical variable.

Forgiveness. Participants reported their intention to forgive the suspect and those who supported them using four items from Wohl and Branscombe's (2005) forgiveness scale. An example item is "*Assuming he is guilty, it is not possible for me to forgive the suspect or those who supported him*" (reverse-coded) (α = .79).

Violent Intentions. Participants reported their intentions to use violence with four items from Doosje et al. (2013) violent intention scale. An example item is "*I would use violence to defend my ethnic origin or religion*." (α = .78).

Manipulation Checks. We measured participants' emotional perceptions of the message and their sense of inclusion in the social group they belong as a manipulation check for exposure to threat and social inclusion/exclusion, respectively.

Emotional Perception of Message. Participants' emotional perceptions of the terrorist and radical messages were tested with the Self-Assessment Manikin (SAM, Lang, 1980; see also Hodes et al.,1985). The SAM is a non-verbal measurement that was used to provide a direct assessment of the perceived valence, arousal and dominance associated with the threatening message. Participants rated the message they read for each of the three dimensions on a 9-point bipolar scale (*from happy to unhappy, from aroused to calm, and from controlled to dominant,* respectively). When feeling sad, aroused and less dominant due to a social stimulus, it is more likely to construe this stimulus as threatening (Lang et al., 2008).

Perceived Social Inclusion. Participants' perceived inclusion in the student community was assessed by the pictorial identity fusion measurement (Swann et al., 2009), wherein the self and the group are perceived as separate entities represented by two circles. Participants were asked to indicate the degree these two circles (one

representing themselves and the other the student community) overlap on a five-point scale from *no overlap* to *complete overlap*. Less overlap is associated with less perceived closeness[1].

Procedure

On arriving in the laboratory, participants were informed that the aim of the study was to examine the mental visualisation of online social information and their effects on attitude formation. After being given the opportunity to ask questions, they were asked to provide verbal and written consent. The study began by measuring participants' heart rates in real-time. This was done by asking them to place their index finger of their non-dominant hand in a Blood Volume Pulse (BVP) sensor. Heart rates were measured for 5 minutes (e.g., Casad & Petzel, 2018) in a resting period, which for the purpose of this study is defined as the period before the beginning of the experimental process.

After the 5 minutes, the BVP sensor was removed and participants were told that due to recent incidents of hate speech in a student society on campus, the University has decided not only to implement formal preventive measures but also to seek students' input into how to deal with relevant incidents in the future. They were informed that because of this incident, a competition had been initiated in which students from all departments were to work in groups to design ways of dealing with these incidents and that the best proposal would receive a £500 award. They were also told that a group of two students had already been formed within Psychology and that they could be the third member by completing a questionnaire that the group developed to assess their matching with the group. Subject to the participants' approval, the group would be given the opportunity to study the participant's responses (via Qualtrics) to decide if they wished the student to join their group. Participants were then presented with the

national identification questionnaire, guised as the assessment tool. Upon completion of the questionnaire, participants waited a few minutes and were then presented with a message that informed them whether or not they were included in the group (Appendix C). This introduced the manipulation of social inclusion and social exclusion. Roughly half of the participants were accepted, and half were not in a random order.

Next, participants were asked to complete the computational tasks. The BVP was fitted again on the same index finger ahead of the tasks and started recording once the tasks began. Participants were instructed to read either the terrorist or radical threatening message, which was presented on the screen for 1 minute before the Continue command appeared. On clicking Continue, participants were informed that they were going to complete a series of computational tasks that included eye-tracking measurements. Eye tracking calibration took place for every participant before the beginning of the dot-probe task. Participants remained seated in front of the computer screen with their chins securely positioned on a chin rest. Then, they were instructed to complete the dot-probe task. Following the dot-probe task, participants were presented with the suspect's picture with the instructions: "*This is a photograph released by the police (1/11/2018) of the lead suspect in an illegal online campaign. Please look at the picture carefully because you will be asked to answer several questions. Press spacebar when you are ready*." While looking at the picture, eye movements were measured. We then administered the post-hoc questionnaires on attitudes towards the suspect, individual violent intention and manipulation checks (emotional perception of the threatening message and fusion). At the end of the study, participants were informed about the experimenter's ostensible forthcoming study and were asked to pick one of three poster adverts to be distributed across campus. The posters presented the same research advert with either violent characteristics (use of words, such as fight, and signs

of abuse in the picture), radical characteristics (words, such as change, and an angry picture) or neutral characteristics (non-threatening content and picture) (Appendix C). After picking up one of the adverts, participants were thanked and debriefed.

A control group was included in which participants were presented with a message of a scientific breakthrough (non-threatening content). The message is presented in Appendix C. In this condition, national identification and exclusionary status were not manipulated.

Analytical Approach

Hypothesis 1that exposure to the terrorist threat in conjunction with social exclusion, predicts an increase in physiological arousal, and Hypothesis 2, that exposure to the terrorist threat in conjunction with social inclusion, predicts a decrease in physiological arousal, were examined using linear mixed effect (LME) modelling. This is because of (i) the nested nature of the data, (ii) the fact that we have different measurement levels (pre/post), and (iii) uneven sampling across levels (Fox et al., 2014). We tested a model of exclusionary status, type of threatening message, measurement time of HR (pre/post), and their interaction terms as fixed effects on HR score. To account for unseen variability among participants, we included a random effect of subjects on HR scores. To ensure that LME modelling was appropriate for our data, we tested whether the inclusion of the random effect would improve an Intercept-only model prior to fitting the model. Graphical inspection and diagnostic tests related to the normality of model residuals were performed after fitting the model. The same analytical approach was adopted to investigate Hypothesis 3stated that social exclusion induces longer reaction time to negative stimuli than the control group. All statistical analyses were performed in R programming language using the lme4 package (Bates et

al., 2015). The script is available at:

https://osf.io/29x5n/?view_only=a83257a63d004b11af21b46cac226e59.

Power analysis for linear mixed effect models (LMEs) was conducted using the simr package (Green & McLeod, 2015). Simr performs power analysis for all models operationalised by the lme4 package using Monte Carlo simulations. It handles non-normal response variables and a range of fixed and random effect specifications (Johnson et al., 2015). The power analysis was conducted based on 1000 simulations and alpha = 0.05 for all LMEs presented in this paper.

To test whether specific processes of attentional bias, namely (dis)engagement to threat, would be predicted by the interactive effect of exposure to a terrorist threatening message and social exclusion (H4), we performed a series of linear regression models with the type of threatening message, exclusionary status (dummy-coded *k*-1), and their interaction as predictors on eye movement bias scores. Latency bias included both negative and positive scores and was standardised to avoid Standard Error misspecifications.

In a similar vein, Hypotheses 5 and 6 stated that harsher punishment and less forgiving attitudes towards the target are driven by exposure to the terrorist threatening message after being socially excluded and moderated by eye movement patterns and national identification, respectively. Hypothesis 5 was tested using linear regression models of the type of threatening message and exclusionary status as predictors, eye movement measurements as moderators, and their interaction on attitudes towards punishment and forgiveness, respectively. Due to the large number of eye movement measurements, we included each of them as a moderator in different models. Hypothesis was tested with a similar model where eye movement measurements were replaced by national identification as a moderator. A power analysis of the proposed

models indicated that 85 participants would be needed to detect 80% power. Therefore, we consider the models as being adequately powered. Due to their involvement in interactions, moderators were Mean-centered prior to creating the interaction term (Aiken & West, 1991). We tested whether these models showed any improvement on the Intercept-only model and for any violations of the underlying assumptions via graphical inspection and diagnostic tests.

Whether participants who were included in the social group were more likely to endorse radical preferences after exposure to the radical message (H7), was examined with a multinomial logistic regression of the experimental condition of radical exposure and social inclusion (dummy-coded) on participants' advert choice (radical, violent, neutral). We used the neutral advert (that included non-threatening content) as the reference level. To test whether the same contextual factors influence intentions, as well as the effect of national identification on them (H8), we performed a multiple linear regression model of the type of threatening message, exclusionary experience (dummy-coded), and their interaction on violent intentions, while adding a simple effect of national identification. Across these analyses, all outcome variables were tested for their distribution fit. This analysis showed which type of generalised (mixed effect) linear models would fit the data better. Subsequently, all fitted models followed the respective distributions.

Results

Manipulation Checks. Feeling sad, aroused and under control were expected to be affective expressions of threat due to exposure to messages that include terrorist or radical threats. To test this, we conducted a series of ordinal regressions with the type of threatening message (dummy-coded *n*-1) predicting the perceived valence, arousal and dominance, respectively. An ordinal regression with the terrorist message as a predictor

of the perceived valence of the message showed improvement on an Intercept-only model, $\chi^2(1) = 4.98$, $p = .026$. In exposure to terrorist threat, as opposed to no threat, the probability of feeling sad increased from 1 (*happy*) to 8 (*unhappy*), $\beta = .87$, $SE = .39$, z = 2.21, $p = .027$, 95% CI [0.10, 1.65], $R^2 = .06$. There were no significant differences in the perceived arousal and dominance of the terrorist message compared to control message, or the emotional perceptions of the radical message compared to control message, all $p > .19$. The results show that terrorist threats had the expected emotional impact in terms of valence, but not arousal and dominance. Since valence is dominant in emotional regulation and decision-making (Charland, 2005) and a terrorist message is different from a radical message due to the former's inherent component of violence, we consider the manipulation successful.

It was also expected that participants who were included in the group of students would more likely fuse with the student community. An ordinal logistic regression with exclusionary status (dummy-coded) predicting fusion with the student community showed improvement on an Intercept only model, $\chi^2(1) = 17.07$, $p < .001$. When excluded from the group, the probability of perceived closeness with the rest of the student community was reduced compared to those included in the group of students, $\beta = -2.12$, $SE = .55$, z = - 3.88, $p < .001$, 95%CI [-3.24, -1.09], $R^2 = .25$. The results confirm our hypothesis and indicate a successful manipulation of social inclusion/exclusion.

Heart rates (HR). To examine whether exposure to the terrorist threatening message after social exclusion increases heart rates (H1) or decreases heart rates after social inclusion (H2), we tested a linear mixed effect model of exclusionary status, type of rhetoric, measurement time of HR (pre/post), and their interaction terms as fixed effects, and added a random effect of subjects on HR scores. The inclusion of the

random effect improved the model, $\Delta\chi^2(1) = 80.74$, $p = < .001$, thus, conducting a mixed-effect model was justified. The full model performed significantly better than the Intercept-only model, $\Delta\chi^2(4) = 9.77$, $p = .04$.

In fitting the model, underlying assumptions of residual normality were violated. After graphically inspecting and excluding outliers, the final model showed a marginally significant effect of measurement time of HR, such that there was a decrease in participants' heart rates after exposure to the experimental conditions compared to the resting period, $\beta = -2.77$, $SE = 1.39$, $t = -2.00$, $p = .048$, 95%CI [-5.51, -0.02], as well as a significant three-way interaction, $\beta = -5.94$, $SE = 2.75$, $t = -2.15$, $p = .028$, 95%CI [-11.39, -0.49]. The interclass correlation for the model was ICC = .86 indicating a high degree of variability explained by the random effect, *SD* for random effect = 9.23, R^2(total) = .87. Further analysis of the interaction indicated that on exposure to a terrorist threatening message, participants who were included in the group were less physiologically aroused, $\beta = -6.50$, $SE = 1.42$, $t = -4.55$, $p < .001$. Social exclusion, as well as exposure to a radical message, did not show significant differences in physiological arousal, $p > .30$. Power analysis for the mixed effect model based on 1000 simulations indicated a sufficient power of 75.60%, 95%CI [72.81, 78.23]. Although Hypothesis 1 was not supported, the results support the adaptive functioning of social inclusion after exposure to a terrorist threatening message (H2).

Attentional Biases. We hypothesised that social exclusion is likely to induce longer reaction time to negative stimuli than the control condition (H3). We fitted a full model of the effect of exclusionary status, the type of trial (congruent, incongruent, neutral), and their interaction as fixed effects and a random effect of subjects on reaction time. On checking the underlying assumptions and distribution fit of reaction

time, we needed to take the log of the outcome variable (reaction time) to correct for residual normality.

Results indicated that the full model showed improvement on the Intercept-only model, $\Delta\chi^2(8) = 60.95$, $p < .001$. Adding the random effect improved model fit compared to a model with no random effects, $\Delta\chi^2(1) = 305.24$, $p < .001$, and confirmed that a mixed-effect model is more appropriate than a simple linear model. The results suggested that both congruent and incongruent trials predicted longer reaction time compared to neutral trials, $\beta = .05$, $SE = .02$, $t = 2.96$, $p < .001$, 95%CI [.0, .09], and, $\beta = .06$, $SE = .02$, $t = 3.43$, $p < .001$, 95%CI [.03, .09], respectively. The random effect explained a high degree of variability, ICC = .89, $SD = .14$, R^2(total) = .90. Incongruent trials predicted longer reaction time than congruent trials, $\beta = .02$, $SE = .01$, $t = 2.47$, $p = .043$. Table 1 presents the Means and Standard Deviations for non-transformed factors. Power analysis based on 1000 simulations indicated sufficient power of 100%, 95%CI [99.63, 100] for the effect of congruence of the fitted model.

Although the results failed to support our hypothesis, they confirm previous findings of a "universality" of attentional bias as a robust phenomenon that occurs across different populations and stimuli regardless of situational effects (Bar-Haim et al., 2007).

Table 1

Mean scores and Standard Deviations of Non-Transformed Reaction Time across Trials

	M	*SD*
Congruent Trials	564.74	9.46
Incongruent Trials	575.17	9.38
Neutral Trials	541.93	9.18

To test whether attentional disengagement from threat would be predicted by the interactive effect of exposure to a terrorist threat and social exclusion (H4), we performed a linear regression with the type of rhetoric, exclusionary status, and their interaction as predictors of eye movement bias scores. A linear regression on standardised latency bias was statistically significant, $F(3, 53) = 3.59$, $p = .02$, $R^2 = .12$. Results indicated a significant interaction between exclusionary status and type of message, $\beta = 1.42$, $SE = .50$, $t = 2.85$, $p = .006$, 95%CI [0.42, 2.43]. Pairwise comparisons suggested that when exposed to the radical message, participants who were excluded by the group showed an increase in latency bias compared to those included in the group, *Mdiff* = 1.09, *pTukey* = .014, , $d = 1.05$. Since the Mean for social exclusion before exposure to the radical rhetoric was 0.61, which is above zero, whereas the Mean for social inclusion before exposure to the radical rhetoric was -0.48, which is below zero, the former shows avoidance of threatening stimuli, whereas the latter more vigilance to threatening stimuli. An a posteriori power analysis of the fitted model showed an adequate power of 78%. The results failed to support Hypothesis 4 but indicated that processes of attentional avoidance and approach could be triggered by exposure to the radical threatening message as a function of social inclusion and exclusion, respectively.

Punishment and forgiveness. Hypothesis 5 stated that exposure to the terrorist threatening message after an exclusionary experience drives harsher punishment and less forgiving attitudes towards the target when individuals display more fixation and saccadic movements on the target's picture. To investigate this, we fitted a linear regression model of the type of threatening message, exclusionary status, and their interaction. We also added each eye movement pattern (average saccadic velocity, saccadic peak velocity, saccadic frequency, average saccadic amplitude, average

fixation duration, fixation frequency and first fixation duration) as a moderator on attitudes of punishment and forgiveness, respectively. The results showed no statistically significant differences in either punishment attitudes (all $p > .06$) or forgiveness (all $p > .11$) driven by the proposed model.

Given that sentence (which was measured alongside the punishment techniques) is an ordinal variable, Hypothesis 5 was further examined on preferences for sentencing the target. An ordinal regression of exposure to the terrorist threatening message, social exclusion, average fixation duration (as a moderator-Mean-centered) and their interaction term on sentence showed improvement on an Intercept-only model, $\chi^2(7) = 16.68$, $p = .02$. Results showed that exposure to the terrorist threatening message combined with an increase in average fixation duration increases the odds to report preferences of harsher sentence for the target compared to exposure to the radical message, $\beta = .02$, $SE = .01$, $t = 2.06$, $p = .04$, 95%CI [0.002, 0.05]. Similarly, an exclusionary experience combined with an increase in average fixation duration increases the odds for harsher sentence preferences compared to an inclusionary experience, $\beta = .04$, $SE = .01$, $t = 2.56$, $p = .01$, 95%CI [0.01, 0.07]. The rest of the effects did not show statistical significance, $p > .06$.

Hypothesis 6 was tested in the same way with Hypothesis 5 but used national identification (Mean-centered) as a moderator. As previously, a linear regression model of the type of threatening message, exclusionary status, national identification, and their interaction was tested on punishment preferences and forgiving attitudes, respectively. We found no statistically significant effects on punishment, all $p > .38$, or on forgiveness, all $p > .70$. The same results occurred from an ordinal regression of these predictors on sentence preferences, all $p > .05$. Taken together, these results fail to support both Hypothesis 5 and Hypothesis 6.

Endorsement of radical preferences. A multinomial regression model of type of threatening message, exclusionary status and their interaction on advert choice was performed to examine Hypothesis 7. The model showed improvement on an Intercept-only model, $\Delta\chi^2(2) = 15.34$, $p < .001$. Exposure to the radical message after being included in the group of students significantly increased the probability of choosing the radical advert over the control one, $\beta = 1.41$, $SE = .64$, $z = 2.22$, $p = .027$, 95%CI [0.16, 2.66], $R^2 = .18$. Participants showed 41% probability of choosing the radical advert over 22% of the violent and 37% of the control advert. Exposure to the radical message after being excluded by the group did not significantly predict behavioural preferences, p(radical advert) = .15, p(violent advert) = .13[2].

Violent Intentions. Violent intentions showed a better fit for a Gamma distribution (AIC = 502.73) than a negative binomial (AIC = 502.80), Poisson (AIC = 508.92), or log-normal distribution (AIC = 506.92). To test Hypothesis 8, we performed a generalized linear model (GLM) with Gamma distribution and log link with the effect of exposure to the radical message and social inclusion as independent variables, their interaction, and the effect of national identification as a covariate. The proposed model did not show improvement on an Intercept-only model, $\chi^2(2) = .54$, $p = .12$. Individual effects did not show statistical significance, $p > .09$. Unlike our hypothesis, violent intentions were not predicted from national identification[3].

Discussion. Our results suggest that being included in a group is likely to initiate different physiological, cognitive, and social responses depending on the type of rhetoric individuals were exposed to in the context of a hate speech incident. When exposed to the terrorist message, individuals who were included in the group tended to show heart rate deceleration. This is in line with previous research suggesting that the sense of belonging that is inherent to social inclusion tends to reduce physiological

reactivity (e.g., Begen & Turner-Cobb, 2015). Our findings suggest that social inclusion can work as a physiological buffer even when combined with contextual factors that traditionally evoke physiological arousal.

However, exposure to the radical message when socially included drove a different pattern of micro and social behaviours by predicting vigilance to threat and radical endorsement. These results point to a successful influence driven by societal practices and operationalised on two different levels of socio-cognitive processing. First, latency bias represents a faster orientation to negative social cues (Posner et al., 1987), which may affect decision-making (Vachon & Tremblay, 2014). Second, consistency between radical rhetoric and the radical advert in the sense that both seek to address injustice is likely to exert influence (Mugny & Papastamou, 1982). Our findings suggest that when socially included participants were exposed to messages against the status quo, they tended to shift their attention towards threatening cues and, subsequently displayed behaviours indicative of radical rhetoric. Thus, social inclusion is likely to initiate radical endorsements driven by cognitive biases and behavioural style (verbal and action consistency).

By contrast, the social exclusion did not show any of the expected aversive reactions in the context of this study. Yet, it corroborated previous research that social exclusion affects socio-cognitive processes (e.g., DeWall & Bushman, 2011). Our findings suggested that social exclusion predicted less fusion with the student community and visual avoidance as shown by eye movement patterns. According to a Two-Dimensional Model of Emotion Regulation Following Social Exclusion (Riva & Eck, 2016), cognitive and behavioural avoidance after social exclusion are mechanisms of effective emotional regulation in response to social exclusion. On exposure to radical threat they oriented towards locations others than the location of the threatening stimuli,

indicating deliberate distraction as a regulatory strategy to adapt to social exclusion (Riva & Eck, 2016). These findings support the notion that social exclusion motivates individuals to endorse adaptive rather than maladaptive cognitions and behaviours. By contrast, cognitive elaboration on the characteristics of the deviant target after an exclusionary experience seems to promote harsher legal judgements for the target in an attempt to maintain group distinctiveness from the deviant target (Jetten et al., 1997). This interpretation is further supported by the expression of more punitive preferences when visual attention to the target was combined with exposure to the terrorist message. Whether differences in the way this contextual interplay (social inclusion/exclusion and exposure to terrorist/radical message) affect individual responses depends on the broader context of the hate speech incident or can be found outside context barriers is examined next.

Study 2: Social Inclusion/Exclusion and Proximity of Radical Narratives

The purpose of this study was twofold. First, we investigated the contextual dependency of the radical preference in Study 1. Second, we sought to examine the mechanisms through which the radical message is more likely to exert influence than the terrorist message. If the effect of social inclusion and exposure to the radical message on radical outcome is not context-specific, namely triggered by contextual incentives (hate speech), then the same radical outcome should be replicated where no context has been specified.

H1: When exposed to a radical message after an inclusionary experience, individuals display more radical preferences versus no preferences than in the control condition.

Driven by the results in Study 1 that violent intentions were not predicted by social inclusion and exposure to the radical message, we extended our measure of intention to cover three types: activist, radical and violent. In this way, we can replicate

the previous outcome and further identify the type of intentions that may be more relevant to the effects of social inclusion and exposure to a radical message.

H2: Exposure to a radical message after social inclusion induces more activist and radical intentions than the control condition.

In line with Study 1, we tested the impact of national identification on intentions and extended our investigation to also look at within-intention differences.

H3: People with a stronger national identity report more activist than radical and violent intentions.

To investigate the reasons why a radical message is more likely to be influential in terms of social enactment than a terrorist message, we followed a "validation" process approach (Moscovici, 1980), which examines the relation between a minority position and the reality. A validation process leads to attitudinal change and ideological conversion by creating perceptions that the proposed message reflects one's social reality. This means that if radical rhetoric is perceived to be more relevant to one's social reality and individuals are oriented to focus on national rather than international issues, the radical message is likely to be more influential than the terrorist message.

H4: Even in the absence of any contextual reference, individuals are more likely to be oriented towards national than international issues.

H5: Exposure to a radical message after an exclusionary experience leads to perceptions of it being more relevant to people's social reality than the terrorist message.

Methods

Participants and Design

Experiments 2 to 5 were conducted online using Prolific Academic (http://www.prolific.ac), an online participant platform that provides high-quality, reliable data from the general population of different countries across the world (Peer et al., 2017). A total of 149 British citizens (72% females, *M*age = 35.56 years, *SD* = 12.49, Range: 18-68 years) participated in Study 2. They were randomly assigned to a 2 (Exclusionary Status: Inclusion /Exclusion) x 2 (Message: Terrorist/Radical) between-subjects design with a control condition. To examine whether the sample size was adequate, we performed a posterior power analysis using G*power (Faul et al., 2007) on our model for radical endorsement. An *F*-test with a medium effect size of .15, alpha at .05, 149 participants and three predictors (two predictors and their interaction) showed 97% power.

Materials

Violent intentions (α = .79) and strength of national identification (α = .89) were measured using the same materials as in Study 1. Participants were exposed to the same threatening messages as in Study 1.

Social Inclusion/Exclusion. Participants were asked to play an online version of the Cyberball game (Williams et al., 2000; Williams & Jarvis, 2006): An Internet-based game that stimulates inclusion and exclusion in a virtual ball tossing game. Participants were led to believe that they were playing this game with two other British participants. These players were avatars and not real participants. The participant was represented by a third avatar. When participants had the ball, they were instructed to click on the avatar of either of the two other players to throw the ball. They were also instructed to mentally visualize themselves and the other players as if they were playing in real life.

To prime ingroup membership and for realism, we provided both computer-based avatars with a code name followed by the UK flag (Gonsalkorale & Williams, 2007). For each participant we used the 'name' of "Me" followed by the UK flag. Each game included 30 throws. In the inclusion condition, participants received the ball one-third of the time, whereas, in the exclusion condition, they received the ball once at the beginning and never again. The game lasted approximately three minutes.

Manipulation Checks. Participants reported the extent they felt excluded by using the 3-item Felt Rejected scale (α = .93) and the 3-items Felt Ignored scale (α = .95) (Gomez et al., 2011). These factors were highly correlated (r = .90**). This was in line with the high correlations between feeling ignored and feeling excluded in previous studies (Gomez et al., 2011). Since the authors of these scales stated that the scales do not represent the same emotional state and were analysed separately, despite their high correlation, we proceeded in accordance with previous studies (Gomez et al., 2011; Williams, 2007). In order to add a perceptual measurement that complements the previous measurements of exclusionary feelings, we also asked participants to estimate the percentage of throws they received (Gonsalkorale & Williams, 2007).

Message Validation. Participants reported the perceived realism of the message with three items adapted from studies on message processing (Martin et al., 2007), such as "*The message addresses issues that are representative of our social reality*", "*Dealing with what the message describes is an urgent demand nowadays*", "*I do not feel that my everyday life is affected by what the message describes*" (reverse coded). Cronbach's test showed that reliability was increased from α = .64 to α = .79 if the last item was removed (r_{item3} = .28). Therefore, we proceeded with our analysis with the 2-item index.

Activist and Radical Intentions. Participants reported their activist and radical intentions by completing the Activism and Radicalism Intention Scale (Moskalenko & McCauley, 2009). This scale includes eight items, such as "*I would join/belong to an organization that fights for my group's political and legal rights*" (activist intention), and "*I would continue to support an organization that fights for my group's political and legal rights even if the organization sometimes resorts to violence*" (radical intention). Internal consistency for activist intentions was $\alpha = .89$, and for radical intentions $\alpha = .88$.

Procedure

Participants were informed that this was an online study on mental visualization capabilities and cognitive performance. On providing informed consent, they were asked to report their sex, age and nationality, and then complete an identification scale. Next, they were asked to give a written response to the question: *"What are the main socio-political problems that need to be addressed in the present? Please name 3 in priority order."* Participants were then randomly allocated to one of the two exclusionary status conditions, which we created via the Cyberball game. In line with previous research, the manipulation checks were administered immediately after the game (Hartgerink et al., 2015; Williams et al., 2000). Next, participants were presented with one of the two messages presented in Study 1 and completed the post hoc questionnaire measuring their intentions and influence mechanisms relative to the message. As a behavioural measure of radical engagement, all participants were presented with the message: "*Recently, a number of UK citizens have initiated an online campaign calling for radical policy changes. You can learn more on: http://www.aexi.org/events/radical-reforms-for-social-sec/"*. They were asked to either click on a box to copy the link or not. In both cases, they were thanked and debriefed.

Analytical Approach

Hypothesis 1 stated that the effect of social inclusion in conjunction with exposure to a radical message induces radical behavioural preferences. To test this hypothesis, we performed a robust binomial generalized linear model (robust GLM, Cantoni & Ronchetti, 2001) with the experimental condition of social inclusion and exposure to the radical message versus the control condition on online behavioural endorsement versus no endorsement. We used the robust package (Maechler et al., 2022) in R programming software for our analysis, which allows for less biased outcomes in relatively complicated models and can cope with deviations from the assumed distribution (Lo & Ronchetti, 2009). Across the analysis, we tested whether the proposed model improved the Intercept-only model prior to fitting the model.

Hypothesis 2 suggested that exposure to a radical message after social inclusion induces more activist intentions and radical intentions than the control condition. We performed two regression models with the type of threatening message, exclusionary status, and their interaction terms on activist and radical intentions, respectively, using the control condition as the reference level. To detect which type of regression model is appropriate for our data, we tested the distribution fit of activist and radical intention scores. We, then, fitted the model with the respective distribution. Within-participant differences in the type of intentions associated with the strength of national identification (H3) was next examined using the lme4 package (Bates et al., 2015). A linear mixed effect model of national identification, type of intention (activist, radical, violent), and their interaction was tested as fixed effects on intention scores, while we added a random effect of subjects to account for unseen variability among participants. We tested whether the model improved the Intercept-only model and whether the

inclusion of the random effect was justified (i.e. whether a mixed effect model fitted the data better than a simple linear model).

Participants' responses in the open box were marked as either domestically oriented or internationally oriented problems. We calculated the frequency of participants' reported problems in these categories. A domestic versus international disposition (H4) was tested using a one-sample *t*-test that shows whether the Mean domestic or Mean international disposition significantly differs from the midpoint. The effect of social exclusion and exposure to the radical message on perceptions of relevance to social reality was tested with a two-way ANOVA of the type of message and exclusionary status on the perceived realism of the message. The Script for this study is available at: https://osf.io/29x5n/?view_only=a83257a63d004b11af21b46cac226e59.

Results

Manipulation Checks. A significant Welch t-test of exclusionary status on felt rejected, $t(118) = 6.68$, $p < .001$, $d = 1.22$, showed that participants felt more excluded under exclusion rather than inclusion ($M_{exclusion} = 15.6$, $SD = 4.30 > M_{inclusion} = 10.51$, $SD = 4.01$). They also felt more ignored in the exclusion condition ($M_{exclusion} = 16.2$, $SD = 3.52 > M_{inclusion} = 10.49$, $SD = 4.19$), $t(118) = 8.05$, $p < .001$, $d = 1.47$, and reported that they received the ball less than in inclusion ($M_{exclusion} = 14.58$, $SD = 8.30 < M_{inclusion} = 35.15$, $SD = 12.64$), $t(118) = -10.50$, $p < .001$, $d = 1.92$. Thus, our manipulation was successful[4].

Radical Endorsement. To replicate the behavioural outcome of Study 1 (H1), we tested a robust GLM binomial of radical message and social inclusion on online radical engagement versus no engagement. The model showed no improvement on the Intercept-only model, $\Delta\chi^2(1) = 0.04$, $p = .84$. Individual predictors were not statistically

significant, $p > .80$. The results showed no evidence of radical endorsement. This supports the notion that the radical preference in Study 1 was likely to be dependent on the broader context of hate speech involving social inclusion and exposure to the radical message.

Intentions. We tested whether social inclusion and exposure to the radical message elicited activist and radical intentions (H2). A linear regression of social inclusion, radical message (dummy coded with control as the reference level) and their interaction terms on activist intentions showed no improvement on the Intercept-only model, $\Delta\chi^2(3) = 3.26$, $p = .65$. None of the individual predictors was statistically significant, all $p > .38$[5]. Results of distribution fit for radical intentions indicated a Gamma distribution (AIC = 882.02). A GLM with Gamma distribution and log link was performed to examine the effects of social inclusion, radical message and their interaction on radical intentions. The model neither improved the Intercept-only model, $\Delta\chi^2(3) = 1.95$, $p = .20$, nor showed any statistical significance of individual predictors, all $p > .22$. Hence, Hypothesis 2 was not supported.

Hypotheses 3 suggested within-subject differences in intentions moderated by national identification. The full model that included the random effect of subjects performed significantly better than the same model without the random effect, $\Delta\chi^2(1) = 111.65$, $p < .001$. The full model showed improvement over the Intercept-only model, $\Delta\chi^2(5) = 131.18$, $p < .001$. Results from the fitted model[6] indicated a significant main effect of the type of intention, $F(2,354) = 8.43$, $p < .001$, $e_p^2 = .41[0.33, 0.47]$, as well as a significant effect of national identification, $F(1,354) = 11.96$, $p = .001$, $e_p^2 = .10$ [0.01, 0.12]. The interaction between type of intention and national identification was not statistically significant, $F(2,354) = 0.19$, $p = .83$. Pairwise comparisons showed that participants reported more activist ($M = 1.31$, $SD = .47$) than radical ($M = 0.86$, $SD =$

.53) *Mdiff* = 0.45, *pBon* < .001, and more activist than violent intentions (*M* = 0.86, *SD* = .50), *Mdiff* = 0.45, *pBon* < .001. There was no significant difference between radical and violent intentions (*p* = 1.00). Analysis of the simple effect showed that activist intention decreases for every increase in national identification, β = -.08, *SE* = .03, *t* = -2.38, p = .19, 95%CI [-0.17, -.01]. Thus, the stronger the national identification, the less likely people are to develop intentions to enact.

Influence Mechanisms. A domestic versus international disposition was tested based on the frequency of participants' reported problems in these categories (H4). A one-sample *t*-test on the domestic index was statistically significant, *t*(148) = 2.79, *p* = .006. The average report of domestic problems was .24 greater than the midpoint. Accordingly, a significant one-sample *t*-test on the international index, *t*(148) = - 4.23, *p* < .001, showed that the average report of international problems was .35 lower than the midpoint. Hence, participants were more domestically that internationally oriented in social representations when they participated in the study. Among the reported problems, Brexit, climate change, hate crime, homelessness, and healthcare (NHS) were the most frequently mentioned.

We expected that exposure to the radical message under exclusion would predict perceptions of the message as being more relevant to one's social reality than the terrorist message (H4). A two-way ANOVA of the type of message and exclusionary status on perceived realism of the message showed a significant message x exclusionary status interaction, *F*(1, 144) = 9.94, *p* = .008, *d* = 0.7 [0.17, 1.23]. When socially excluded, individuals tended to perceive the terrorist message as less relevant to their social reality (*M* = 8.39, *SD* = 2.59) compared to the radical message (*M* = 10.45, *SD* = 2.46), *Mdiff* = -2.06, *pTukey* = .026, *d* = 0.82 [0.28, 1.35].

Discussion. The findings highlighted the contextual dependency of the effect of inclusionary status and exposure to radical rhetoric on engagement with radical material. When societal practices are not placed in a specific social context, radical behavioural preferences are unlikely to occur. Yet, individual dispositions and socio-cognitive processes complement influence attempts, even in influence attempts with no apparent contextual references. The results show that people tended to focus on national problems more than international problems and perceived the radical message to be more representative of their socio-political present, especially after a social exclusionary experience. According to minority influence research, these perceptions are likely to instigate influence in line with the radical messages. However, without accounting for the broader context in which influence is placed, the influence outcome is less likely to be behaviourally expressed. Replicating previous findings that national identification affects action intention (Ellemers et al., 1997), we showed that this lack of behavioural endorsement can be associated with decreased action intentions driven by increased levels of nationalism. The next three studies provide additional evidence on the influence processes that either facilitate or hinder radical endorsements in response to social inclusion/exclusion and exposure to radical rhetoric.

Study 3: Social Inclusion/Exclusion and Ingroup versus Outgroup Radical Narratives

Study 3 examined the processes presented in Figure 1 in the context of Brexit. Combining Bal and van den Bos's (2017) conceptual model of radical adherence with the main principles of the social identity approach (Spears, 2021), it tested whether exposure to an ingroup versus outgroup radical message is more likely to lead to an endorsement of an extreme Brexit campaign after an inclusionary or exclusionary experience. In particular, it was expected that a combination of an exclusionary

experience and exposure to a radical message against Brexit from an outgroup is likely to drive reactionist endorsement when individuals have anti-egalitarian beliefs. However, system-justifying beliefs should hinder any form of endorsement. Study 3 further explored whether the exclusionary experience is perceived to be unexpected in order to drive such a behavioural response.

H1: Compared to those in the control condition, participants in the socially excluded condition are more likely to endorse the reactionist campaign than the radical campaign after exposure to a radical message by the outgroup, when they hold strong anti-egalitarian beliefs.

Given the consequences of social inclusion and ingroup favouritism for well-being and social relationships (Haslam, 2004), we further investigated the emergence of online radical endorsement in accordance with Process 2.

H2: Compared to those in the control condition, participants in the socially included condition are more likely to endorse a radical campaign against Brexit versus no campaign after exposure to a radical message by the ingroup.

H3a: Exposure to a radical message by the ingroup after an inclusionary experience and feelings of empowerment increase fusion with the radical group.

H3b: Identity fusion increases action intentions, which, increase the probabilities of endorsing the radical campaign versus no campaign.

Methods

Participants and Design

An *a priori* power analysis in G*power (Faul et al., 2007) was conducted based on the direct predictors (exclusionary status, source identity and intentions) of behaviour, as shown in Process 2 of Figure 1. This process was chosen because it will be consistently tested throughout the studies. We performed the power analysis with *F*-

tests for multiple regressions and three predictors, which indicated that we would need 146 participants to detect a medium effect size (as with Study 2), with alpha at .05 and 90% power. Data from 1 participant were excluded because of technical issues during the computational task. Consequently, a total of 145 British citizens (71% women, *M*age = 36 years, *SD* = 12.45, Range: 18-70 years) participated in the online survey after giving informed consent. They were randomly assigned to a 2 (Status: Inclusion /Exclusion) x 2 (Message: Ingroup/Outgroup) between-subjects design with a control condition.

Of these participants, 93.7% reported being British (without specifying), 3.5% reported being Scottish, and 2.8% reported being Welsh. Regarding their ideological positions, 36.6% of the participants tended to report liberal views, 15.9% reported neutral ideological views, and 47.5% reported conservative views. In terms of nationalism, 40.5% reported weaker ties with their British identity, 27.6% reported neutral ties, and 31.9% reported strong ties with their national identity. In exploring the relationship between national identity and conservatism, a linear regression indicated that the stronger national identification, the more conservative the ideological positions reported by the participants, $F(1, 114) = 14.57$, $p < .001$, $\beta = 1.21$, $SE = .31$, $t = 3.82$, 95%CI [0.58, 1.84], $R^2 = .11$.

Materials

Study 3 used a number of the same scales as used in Studies 1 and 2. Specifically, national identification (α = 90), activist intentions (α = .91) and radical intentions (α = .84), felt excluded (α =.96), felt ignored (α = .97). As previously, Felt Rejected and Felt Ignored were highly correlated, $r = .96$, $p < 001$. All items were measured on a 7-point scale from 1 (*totally disagree*) to 7 (*totally agree*) unless otherwise stated. Additional measurements included:

Political Orientation. Participants reported their political beliefs using a 3-item scale taken from Carney et al. (2008; see also Kugler et al., 2014). An example item is: ‘‘*Where on the following scale of political orientation from extremely liberal to extremely conservative would you place yourself (overall, in general)*?’’(α = .91). Responses ranged from 1 (*extremely liberal*) to 7 (*extremely conservative*). High scores represent more conservative views.

Unexpectedness. Participants reported how unexpected they perceived their social inclusion/exclusion with three items from Hess and Ledgerwood's (2014) unexpectedness measure. An example item is: *"To what extent were you surprised by the number of throws you received during the game?"* (α = .62). A high score reflects more feeling of unexpectedness during the Cyberball game.

Empowerment. Participants reported their felt empowerment by stating the extent they felt *excited, proud, strong, inspired, empowered, joyful, powerful, and hopeful* while reading a radical message over Brexit from an ingroup vs outgroup source adapted from Selvanathan et al. (2019) (α = .96).

Identity Fusion. Participants reported their perceived closeness with the source of the radical message using the pictorial identity fusion method (Swann et al., 2009), as employed in Study 1 above.

System Justification and Anti-Egalitarianism. Participants reported their ideological support for the societal status quo with the system justification scale (Kay & Jost, 2003) (e.g., "*In general, the British political system operates as it should*" [α = .84]), and their preference for anti-egalitarian policies with 6 items from Radinowitz's (1999) anti-egalitarianism scale (e.g., "*Government should not pass laws concerning the hiring of ethnic minorities*" [α = .71]). Higher scores indicated opposition to liberal policies.

Rhetoric Messages. Participants were asked to read the same radical message in relation to Brexit across experimental conditions. We use the radical message of Study 2 adapted to the context of Brexit. The message included ideas that rejected the status quo (Bal & van den Bos, 2017) and called for disruptive action "*against those who would try to impose unwanted and divisive constitutional change*." Given that our participants were British citizens, the influence of intergroup dynamics was examined by manipulating the identity of the source of the message. Participants were informed that the message was communicated by either British (*ingroup*) or European (*outgroup*) delegates. The message is presented in Appendix D.

Procedure

Participants were informed that this was a study on Brexit and relevant social phenomena. They were asked to complete their demographics, the identification scale, as well as their political orientation. Next, they were directed to play the Cyberball game, followed by the same manipulation checks as in Study 2 and the unexpectedness scale. They were then asked to read a message in response to governmental decisions over Brexit by a group of either British (*ingroup*) or European (*outgroup*) delegates as expressed in an online interview and completed the rest of the questionnaires. As a behavioural measurement of radical endorsement, they were asked to click on the appropriate box in order to sign a petition regarding a radical or reactionist campaign on housing (Appendix D) or to skip. In either case, they were thanked and debriefed.

Analytical Approach

Hypothesis 1 stated that the extent social exclusion and exposure to a radical message by the outgroup drives endorsement of a reactionist campaign rather than a radical campaign or no campaign depends on the kinds of beliefs an individual holds. Specifically, it was expected that anti-egalitarian beliefs would facilitate this

relationship between societal experiences and reactionist campaign support. To test this hypothesis, we conducted a moderation analysis. Given that our dependent variable consisted of three choices: endorsing a radical campaign, endorsing a reactionist campaign, and endorsing no campaign, we tested a multinomial regression model of the experimental condition of exposure to the radical message from the outgroup after being excluded from the group as a predictor, anti-egalitarian beliefs as a moderator, and added their interaction terms. Due to its inclusion in interaction, the moderator was Mean-centered (Aiken & West, 1991). Prior to fitting the model, we tested whether the full model improves the Intercept-only model.

Hypothesis 2 predicted that social inclusion is more likely to drive radical endorsements vs no endorsement by means of exposure to ingroup radical rhetoric. Hypothesis 3a and 3b stated that processes of identity fusion and activist intentions were expected to influence this radical endorsement. To test these hypotheses, a regressed path was tested using the robust weighted least squares and mean and variance estimator (WLSMV) because our model included categorical and ordinal variables (Finney & DiStefano, 2006). Specifically, social inclusion and exposure to an ingroup radical message for Brexit were dummy coded as per the experimental conditions. The behavioural outcome (radical vs reactionist vs no endorsement) was also dummy-coded, while identity fusion was treated as an ordinal variable. Alongside the chi-square test, three other fit measures were included: the Root Mean Square Error of Approximation (RMSEA), the comparative fit index (CFI), and the Standardised Root Mean Square Residual (SRMR). A satisfactory fit is generally indicated by an RMSEA $\leq .07$ (Steiger, 2007), a CFI $\geq .90$ (Hooper et al., 2008), and an SRMR $< .08$ (Hu & Bentler, 1999), which were adopted for this analysis.

Results

Table 3 presents the correlations, Means and Standard Deviations of all indices in Study 3.

Manipulation Checks. We tested whether the Cyberball game triggered feelings of exclusion. A series of *t*-tests of exclusionary status on feeling ignored and feeling rejected showed that participants felt more ignored under exclusion than inclusion ($M_{exclusion}$ = 16.68, *SD* = 3.29 > $M_{inclusion}$ = 10.17, *SD* = 4.10 *t*(113) = 9.40, *p* < .001, *d* =1.75, and more rejected under exclusion than inclusion ($M_{exclusion}$ = 16.65, *SD* = 3.26 > $M_{inclusion}$ = 10.10, *SD* = 4.06), *t*(113) = 9.53, *p* < .001, *d* = 1.78[7]. Excluded participants also perceived they received the ball less than participants in the inclusion group, β = .67, *SE* = .05, *t* = 13.60, *p* < .001, 95%CI [.57, .77][8]. Accordingly, participants under inclusion perceived their experience as less unexpected compared to socially excluded participants, β = -.13, *SE* = .02, *t* = -6.84, *p* < .001, 95%CI [-.17, -.10][9].

Table 2

Correlations, Means and Standard Deviation of Indices Included in Study 3

	1.	2.	3.	4.	5.	6.	7.	M(SD)
1. Identity Fusion								2.46 (1.33)
2. National Identification	.07							4.04 (0.98)
3. Conservatism	-.11	.34***						9.64 (3.48)
4. Empowerment	.51***	.00	-.12					3.66 (1.33)
5. System Justification	-.23**	.28**	.51***	-.14				3.21 (1.00)
6. Anti-egalitarianism	-.14	.23*	.52***	-.14	.45***			17.97 (5.18)
7. Activist Intentions	.30***	-.16	-.32***	.20*	-.19*	-.34***		3.80 (1.39)
8. Radical Intentions	.19*	-.03	-.16	.16	-.11	-.09	.50***	2.32 (1.19)

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$.

Process 1

Preliminary analysis. Since this analysis is driven by the consistency between systemic beliefs, ideological principles and levels of nationalism, we, first examined two regression models of the effect of political orientation and national identification on system justifying, $F(2,113) = 23.08$, $R^2 = .28$, $p < .001$, and anti-egalitarian beliefs, $F(2,113) = 16.97$, $R^2 = .22$, $p < .001$. Results showed that system justification increased for every unit increase in conservatism, $\beta = .13$, $SE = .02$, $t = 5.79$, $p < .001$, 95%CI [0.09, .18]. There was no significant difference between system justification and national identification, $\beta = 0.12$, $SE = .08$, $t = 1.38$, $p = .17$, 95%CI [-0.05, 0.28]. Anti-egalitarian beliefs increased for every unit increase in conservatism, $\beta = 0.67$, $SE = .13$, $z = 5.12$, $p < .001$, 95%CI [0.41, .93], while there was no significant difference in anti-egalitarian beliefs due to national identification, $\beta = 0.42$, $SE = .47$, $t = .89$, $p = .38$, 95%CI [-0.51, 1.35]. These results confirmed the relationship between conservatism

and system-justifying and anti-egalitarian beliefs but failed to support the relationship of this belief system with nationalism.

Hypothesis 1 expected social exclusion and exposure to outgroup radical rhetoric to trigger reactionist endorsement versus radical endorsement or no response strengthened by anti-egalitarian beliefs. A multinomial regression model of these factors and their interaction on campaign choices showed improvement on the Intercept-only model, $\Delta\chi^2(6) = 28.81$, $p < .001$. Results indicated that exposure to the outgroup radical message after an exclusionary experience increased the probability of endorsing the reactionist campaign compared to the radical campaign, , $\beta = 1.01$, $SE = .50$, $z = 2.00$, $p = .045$, 95%CI [0.02, 2.00]. The probability of endorsing the reactionist campaign versus the radical campaign was also increased for every unit increase in anti-egalitarian beliefs, $\beta = 0.16$, $SE = .05$, $z = 3.11$, $p = .002$, 95%CI [0.06, 0.27]. No statistically significant differences were found relative to endorsing the reactionist campaign versus no campaign, all $p > .12$. Although these results do not support a full moderation, they do show that anti-egalitarian beliefs and exclusionary experience followed by exposure to an outgroup radical message on Brexit tended to increase endorsements of a Brexit-related reactionist campaign. Thus, Hypothesis 1 was partially supported.

We further investigated the moderating effect of system-justifying beliefs on the relationship between social exclusion with outgroup radical exposure and campaign endorsement. The results indicated no statistically significant effects of system-justifying beliefs on campaign endorsement, all $p > .12$. In line with Bal and van den Bos (2017), we found no empirical evidence that system-justifying beliefs tended to facilitate behavioural changes by means of social exclusion and exposure to a radical outgroup message[10].

Process 2

A regressed path of Process 2 on radical endorsement versus no endorsement did not show good fit, but rather overfit, $\chi^2(4) = 2.14$, $p(\chi^2) = .71$, RMSEA = 0.000, 90%CI [0.00, 0.09], CFI = 1.00, SRMR = 0.018. This means that there can be many alternative models which could lead to the same fit. Thus, this fit does not evaluate the correctness of the specified model, but rather the significance of individual effects. Exposure to a radical message by the ingroup after social inclusion did not predict any changes to either identity fusion, $\beta = 0.7$, $SE = .30$, $z = 0.22$, $p = .83$, 95%CI [-0.53, 0.66], or radical endorsement, $\beta = -0.27$, $SE = .26$, $z = -1.04$, $p = .30$, 95%CI [-0.79, 0.24]. Although the total indirect effect was not statistically significant, $\beta = 0.004$, $SE = .02$, $z = 0.21$, $p = .83$, 95%CI [-0.04, 0.04], feelings of empowerment predicted an increase in identity fusion from 1 (*no overlap*) to 5 (*total overlap*), $\beta = 0.5$, $SE = .07$, $z = 7.49$, $p < .001$, 95%CI [0.39, 0.67], $R^2 = 0.34$. Identity fusion then predicted an increase in activist intentions, $\beta = .35$, $SE = .07$, $z = 4.96$, $p < .001$, 95%CI [0.21, 1.49], $R^2 = 0.10$. In turn, activist intentions predicted radical endorsements, $\beta = 0.16$, $SE = .07$ $z = 2.12$, $p = .03$, 95%CI [0.01, 0.31], $R^2 = 0.06$. These results only partially and cautiously supported Hypothesis 3. Although the influence factors that determined the endorsement of a Brexit- related radical campaign seem to be confirmed, the immediate context of inclusion and exposure to a radical message from the ingroup did not affect either the behavioural outcome or the influence process. In replacing ingroup exposure with outgroup exposure after an inclusionary experience, the behavioural outcome remained unaffected, $p > .90$.

For exploratory purposes, we conducted the analysis of Process 2, as presented in Figure 1, using radical instead of activist intentions. Although the results indicated a similar pattern in terms of fit, $\chi^2(4) = 1.89$, $p(\chi^2) = .76$, RMSEA = 0.000, 90%CI [0.00,

0.09], CFI = 1.00, SRMR = 0.026, individuals effects were slightly different. As previously, exposure to the radical message from the ingroup after social inclusion did not predict changes in fusion, β = .10, *SE* = .31, *z* = 0.32, *p* = .75, 95%CI [-0.50, 0.70], or radical endorsement, β = -.27, *SE* = .27, *z* = -1.04, *p* = .30, 95%CI [-0.79, 0.25]. Although the effect of empowerment on identity fusion, β = .53, *SE* = .07, *z* = 7.63, *p* < .001, 95%CI [0.39, 0.67], R^2 = .33, and the effect of identity fusion on radical intentions was further supported, β = 0.23, *SE* = .08, *z* = 2.81, *p* = .005, 95%CI [0.07, .39], R^2 = .06, radical intentions did not predict radical endorsement, β = .16, *SE* = .09, *z* = 1.89, *p* = .06, 95%CI [-0.01, 0.33], R^2 = .05. The total indirect effect was non-significant, β = .004, *SE* = .01, *z* = 0.31, *p* = .75, 95%CI [-0.02, 0.03]. Thus, the felt empowered-fusion-activism interplay is more likely to drive support for radical action against Brexit. For reasons of economy, all standardised estimates for models that examine Process 3 in Studies 3-5 are presented in Appendix D.

Discussion. The findings suggest that an exclusionary experience followed by exposure to a radical message about Brexit from European delegates (the outgroup) is likely to either drive support for the reactionist campaign or not, depending on one's belief system. Experiencing these contextual influences and holding anti-egalitarian beliefs predicts reactionist endorsement. Since social exclusion is unexpected, reactionist endorsement here reflects the successful influence of a campaign that exemplifies whom the dominant group is, thus, reaffirming one's social position (Brooks et al., 2011). If proving a group's social position is not perceived as necessary, in the sense that individuals believe in the system as it is, a lack of endorsement of a Brexit campaign is plausible. In this way, our findings support the conceptual model proposed by Bal and van den Bos (2017) on the fact that system-justifying beliefs did not predict any endorsement of a campaign. The results corroborated previous evidence

for conservative ideologies systematically predicting system-justifying beliefs (Jost et al., 2008) and undermined pro-EU attitudes (Cinnirella & Hamilton, 2007; Golec de Zavala et al., 2017). Notably, this belief system is not contextually driven in its influence capacity. Our findings suggest this belief system and contextual influences on Brexit are two distinctive processes that conjointly facilitate reactionist endorsement.

By contrast, exposure to a radical message on Brexit from British delegates (the ingroup) is less likely to initiate support for a radical campaign against Brexit following an inclusionary experience. Although this finding is inconsistent with the behavioural outcome in Study 1, it does unravel a potential path to radical adherence. Feelings of empowerment triggered processes of identity fusion with the radical delegates from within the group (British delegates), which promoted activist intentions leading to the endorsement of the radical campaign. When radical influence occurs from within the group, it is more likely to be supported by ingroup members (Smith et al., 2020). In this case, influence is achieved by specific psychosocial dynamics associated with the broader context of Brexit and identity dynamics rather than immediate experiences (e.g., social inclusion). The next study examines whether another manifestation of identity dynamics, namely, encountering exclusionary experiences of other ingroup/outgroup members affects group processes in a similar way.

Study 4: Exposure to Others' Exclusionary Experiences and Radical Narratives

In May 2019, it became public that many EU citizens in the UK and British citizens living abroad were denied the right to vote for the European elections in their country of residence because their postal voting forms were delayed, or their names were not on the voting lists, despite their registration being confirmed. As a result, over 300,000 people did not vote, which is believed to have affected the election outcome. In this context, we designed this study to investigate whether a radical campaign that

addresses vote denial will be endorsed when being denied a vote was not personally experienced. We specifically tested whether there is a differential impact of exclusionary threats when targeting EU citizens living in the UK, when targeting UK citizens living abroad, or when both groups are targeted, which provides a sense of inclusivity under a shared exclusionary experience. The underlying processes likely to facilitate radical endorsement in this case were examined in accordance with Figure 1. Consistent with Study 3, we expected no radical endorsement on exposure to British vote denial (perceived ingroup exclusion) when people hold system-justifying beliefs. However, for those having anti-egalitarian beliefs, perceived ingroup exclusion may instigate radical responses.

H1: Compared to the control condition, exposure to narratives that British citizens had been denied a vote in the European elections will increase radical endorsement, which will be moderated by people's anti-egalitarian beliefs.

If inclusion provides a sense of a shared identity with others in society (van Prooijen et al., 2004), perceptions of common unfair treatment between other European and UK citizens should initiate group processes to radical endorsement against vote denial as presented in Process 2 (Figure 1). Extending Study 3, we further examined whether higher-level perceptions of democratic functioning and social mobility comprise the belief system that supports this influence process.

H2a: Compared to the control condition, exposure to vote denial for both EU and British citizens will lead to more support for the radical campaign and more identity fusion.

H2b: The increase in identify fusion will, in turn, increase activist intentions.

H3: Democratic dissatisfaction and desire for mobilisation increase action intentions in support of the right to vote.

Methods

Participants

Since this study shares a similar analytical approach with the previous study, we defined parameters in Gpower (Faul et al., 2007) in the same way. From the 146 participants required for this study, we excluded ten because of failure to complete more than 60% of the study. The final sample consisted of 136 British citizens living in the UK (60.3% women, *M*age = 35.26 years, *SD* = 12.33, Range: 18 -74 years). We chose this sample because they were unlikely to experience a vote denial in the European elections. To confirm this, we administered a post-hoc inquiry where participants were asked to report whether they had voted in the European Elections and if they encountered any problems with the voting process. Of the 95 participants who responded to this question, 63% reported that they had voted without facing any problems, whereas 37% had not voted due to personal choice rather than procedural constraints.

Of the 136 participants, 80.1% reported being British (without specifying), 13.9% reported being English, 3.7% reported being Scottish, 1.4% reported being Welsh, and 0.7% reported being Irish. Regarding their ideological positions, 47% of the participants reported liberal views, 11.8% reported neutral ideological views, and 41.2% reported conservative views. In terms of nationalism, 36.6% reported they identified weakly with their British identity, 14.2% reported neither identify nor disidentify with Britishness, and 49.2% reported they identified strongly with their British identity. As with Study 3, the stronger the national identification, the more conservative the ideological positions reported by the participants, $F(1, 100) = 15.2$, $p < .001$, $\beta = 1.50$, $SE = .38$, $t = 3.89$, 95%CI [0.73, 2.26], $R^2 = .12$.

Materials

Study 4 used a number of the same scales as used in Studies 2 and 3. Specifically, ideological orientation (α = 89), national identification (α = 87), system justifying (α = 84) and anti-egalitarian beliefs (α = 68), as well as activist (α = 91), radical intentions (α = 85), Felt Rejected (α = 90) and Felt Ignored (α = 96) that have been used in the previous studies. There was a high correlation between feeling rejected and ignored, $r = .84$, $p < .001$. Additional measurements included:

Mobility. Participants reported their desire to leave the group with three items from Gomez et al. (2011). An example item is: "*If I could change my nationality, I would do it*" ranging from 1 (*totally disagree*) to 7 (*totally agree*) (α = .87).

Democracy Satisfaction. Participants reported their (dis)satisfaction with the democratic functioning in their country with three items from the World Value Survey, Wave 6 (Inglehart et al., 2014). An example item is: "*How democratically is this country being governed today?*" ranging from 1 (*not at all*) to 7 (*a great deal*) (α = .70).

Rhetoric Messages. The message included in this study was part of a real-life online campaign against vote denial in the European elections (the 3million campaign). An initial message informed participants that this action was illegal, the attention it had attracted online, and the failure of the governments and electoral institutions to protect people's rights. Group dynamics were introduced in this message by making the experience of vote denial specific to European citizens in the UK, Britons abroad, or both. Participants were subsequently presented with a second message (radical message) that called for support of the campaign that aimed for radical disruption of the system in response to vote denial. Both messages can be found in Appendix D.

Procedure

Participants were informed that this was an online study on attitudes towards the European Elections and decision-making. On providing informed consent, they were asked to complete their demographics as in Study 3. To introduce exclusionary threat, participants were asked to read a message regarding the European elections where either Europeans living in the UK, British living in Europe, or both had their vote denied. Next, radical rhetoric was introduced with a message adapted from the 3million campaign (Appendix D). Participants were given 2 minutes to elaborate on this information before the "Continue" command appeared on the screen. After completing the post-hoc questionnaires, a behavioural measurement was administered by asking participants to join the3million campaign (Yes, redirect me/No, thank you). In either case, they were thanked and debriefed.

Analytical Approach

Hypothesis 1 stated that exposure to a British exclusionary experience would drive support for the radical campaign when people hold anti-egalitarian beliefs. To test this hypothesis, we performed a robust binomial generalised linear model (robust GLM, Cantoni & Ronchetti, 2001) with British exclusionary experience (versus the control condition) as a predictor, anti-egalitarian beliefs (Mean-centered) as a moderator, and their interaction on online support for the radical campaign versus no support. We used the robust package (Maechler et al., 2022) in R programming software for our analysis to cope with deviations from the assumed distribution (Lo & Ronchetti, 2009).

Hypothesis 2a and 2b that an exclusionary experience of both EU and British citizens would drive support for a radical campaign, and the processes (fusion, intentions) that contribute to this were tested with the regressed path that is presented in Figure 1. We adopted the same metrics of fit with Study 3. An additional multiple

regression model was performed to test Hypothesis 3 that democratic dissatisfaction and desire for mobility increase action intentions. Distribution fit for action intentions (activist and radical) was tested prior to fitting the model in order to identify the type of model that would better fit the data. In consistency with the previous studies, we tested whether the full model improved the Intercept-only model across the analyses.

Results

Table 3 presents the correlations, Means and Standard Deviations of all measures included in Study 4.

Manipulation Check. A 1-way ANOVA of Exclusionary Status on Felt Excluded and Felt Ignored showed that neither feeling was predicted by exclusionary threats ($p > .71$). Expectedly, the results suggest that the manipulation was not successful in activating feelings of personal exclusion. This is because exclusion in this case was not personally experienced but rather aimed to induce a specific context of others' exclusionary experience. As such, we proceeded with our analysis by treating others' exclusionary experiences as a contextual intervention rather than an individual experience.

Table 3

Correlations, Means and Standard Deviations of the Factors Included in Study 4

	1.	2.	3.	4.	5.	6.	7.	8.	9.	M(SD)
1. Identity Fusion										2.45 (1.20)
2. National Identification	-.10									3.97 (.90)
3. Conservatism	-.19*	.40***								10.57 (3.63)
4. Empowerment	.43***	.08	-.19*							4.02 (81.07)
5. System Justification	-.14	.36***	.37***	-.15						3.03 (.99)
6. Anti-egalitarianism	-.14	.25**	.51***	-.20*	.42***					18.17 (5.63)
7. Democratic Dissatisfaction	.08	-.34***	-.39***	.04	-.63***	-.39***				2.83 (1.02)
8. Desire for Mobility	.21*	-.52***	-.23**	.09	-.49***	-.27**	.30***			3.98 (1.42)
9. Activist Intentions	.23**	-.14	-.46***	.24**	-.17*	-.45***	.35***	.09		3.89 (1.50)
10. Radical Intentions	.20*	-.13	-.44***	.25**	-.18*	-.26**	.24**	.07	.48***	2.46 (1.26)

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$.

Process 1

Preliminary Analysis. We examined the relationship between national identification and conservatism on system justifying and anti-egalitarian beliefs. A significant regression model of national identification and conservatism on system justification, $F(2,102) = 13.21$, $p < .001$, $R^2 = .19$, showed that both conservatism, $\beta = .09$, $SE = .03$, $t = 3.18$, $p = .002$, 95%CI [0.03, 0.14], and national identification, $\beta = .27$, $SE = .11$, $t = 2.54$, $p = .01$, 95%CI [0.06, 0.49], increased system-justifying beliefs. A linear regression of these predictors on anti-egalitarian beliefs, $F(2,103) = 17.19$, $p < .001$, $R^2 = .24$, indicated that while conservatism increased anti-egalitarian beliefs, $\beta = .73$, $SE = .15$, $t = 5.07$, $p < .001$, 95%CI [0.45, 1.02], national identification did not induce any difference in anti-egalitarian beliefs, $\beta = .42$, $SE = .59$, $t = .70$, $p = .49$, 95%CI [-.76 1.60].

To test Hypothesis 1 that exposure to British exclusionary experience drives support for the radical campaign when people hold anti-egalitarian beliefs, we tested a robust GLM binomial. The full model showed improvement on the Intercept-only model, $\Delta\chi^2(3) = 18.28$, $p < .001$. Anti-egalitarian beliefs decreased the probability of endorsing the radical campaign, $\beta = -.17$, $SE = .05$, $z = -3.36$, $p < .001$, 95%CI [-.27, -.07]. Neither the exclusionary experience of other British, $\beta = .10$, $SE = .06$, $z = 0.17$, $p = .87$, 95%CI [-1.08, 1.28], nor the interactive effect between this exclusionary experience and anti-egalitarian beliefs affected the radical support, $\beta = -.14$, $SE = .14$, $z = -1.05$, $p = .30$, 95%CI [-0.42, 0.13]. Consistent with Study 3, we explored the same model by replacing anti-egalitarian beliefs with system-justifying beliefs. The results showed that system-justifying beliefs decreased the probability of endorsing the radical campaign, $\beta = -.61$, $SE = .27$, $z = -2.23$, $p = .03$, 95%CI [-1.14, -0.07]. The rest of the effects remained statistically non-significant, all $p > .28$[11]. The results failed to confirm

Hypothesis 1. However, they support the capacity of this belief system to hinder radical endorsement.

Process 2

Hypothesis 2a and 2b were tested with a regressed, as shown in Figure 1. The model showed an adequate fit, $\chi^2(2) = 2.53$, $p(\chi^2) = 0.28$, RMSEA = 0.04 [0.001, 0.18], CFI = 0.99, SRMR = 0.06. Results indicated that both the direct effect and the total indirect effect were not statistically significant, $p > .07$ and $p > .82$, respectively. However, the model showed a significant positive effect of vote denial for both EU and British citizens on identity fusion, $\beta = .51$, $SE = .25$, $z = 2.05$, $p = .041$, 95%CI [0.02, 0.99], $R^2 = .05$. Identity fusion predicted an increase in activist intentions, $\beta = .44$, $SE = .13$, $z = 3.48$, $p < .001$, 95%CI [0.19, 0.69] ($R^2 = .10$ for path to activist intentions), which, in turn, predicted endorsement of the radical campaign, $\beta = .46$, $SE = .06$, $z = 7.09$, $p < .001$, 95%CI [0.33, 0.58] (for behaviour path, $R^2 = .42$).

Although an iteration of the same model in which activist intentions were replaced with radical intentions did not show a good fit on the data, $\chi^2(2) = 6.92$, $p(\chi^2) = 0.03$, RMSEA = 0.14 [0.035, 0.25], CFI = 0.65, SRMR = 0.11, individual effects revealed the same predicted relationship with the previous model. Standardised and unstandardised estimates for this model are presented in Appendix D.

Fusion and Empowerment. An ordinal regression of empowerment on identity fusion showed an improvement over the Intercept-only model, $\Delta\chi^2(1) = 28.20$, $p < .001$. Participants' fusion with the radical advocates was further predicted by increasing perceptions of empowerment derived from radical rhetoric, $\beta = .97$, $SE = .20$, $z = 4.95$, $p < .001$, 95%CI [.60, 1.38], $R^2 = .24$.

Democratic Governance and Desire for Mobility. We expected perceptions of democratic governance and desire for mobilisation to predict action intentions (H3). A

linear regression of the two predictors on activist intentions was statistically significant, $F(2, 132) = 9.45$, $p < .001$, $R^2 = 11$. Activist intentions increased for every unit increase in dissatisfaction with democratic functioning, $\beta = 0.53$, $SE = .13$, $t = 4.19$, $p < .001$, 95%CI [0.28, 0.78]. A desire for mobilisation did not predict any changes in activist intentions, $\beta = -0.02$, $SE = .09$, $t = -0.17$, $p = .86$, 95%CI [-0.19, 0.16]. In terms of democratic governance and desire for mobility predicting radical intentions[12], a GLM Gamma with log link with the two predictors fit better than the Intercept-only model, $\Delta\chi^2(2) = 1.98$, $p = .018$. Radical intentions increased for every unit increase in dissatisfaction with democratic functioning, $\beta = 0.12$, $SE = .04$, $t = 2.63$, $p = .01$, 95%CI [0.03, 0.20]. A desire for mobilisation did not predict any changes in radical intentions, $\beta = 0.001$, $SE = .03$, $t = 0.04$, $p = .97$, 95%CI [-0.06, 0.07], R^2 for the model was .06.

Discussion. Our findings suggest that others' exclusionary experiences were not personally experienced as exclusion. Instead, a sense of inclusivity in the exclusionary experience triggered adherence to the radical source, which was strengthened by perceptions of democratic dysfunctionality. This perception comprised the support system of radical adherence regardless of one's desire for mobilisation. The findings point to the common ingroup identity model (Gaertner et al., 1993). Perceptions of democracy dissatisfaction were positively associated with a process of re-categorisation into one inclusive group. This re-categorisation drove activist intention and facilitated pro-group radical support. Therefore, the perceived common exclusionary experience of other individuals initiated identity processes that contributed to a collectivised shift to online actions for swift social change. By contrast, a belief system that supported the status quo weakened radical endorsement supporting the Bal and van den Bos (2017) conceptual model. The next study re-introduces personal experiences of social inclusion/exclusion and investigates influence dynamics in response to climate change.

By investigating these processes in the US, this study accounts for the role of culture in shaping radical adherence.

5: Social Inclusion/ Exclusion and Radical Narratives on Climate Change

The purpose of this study was to investigate whether support for a radical proposal for climate change is predicted from experiences of social exclusion/inclusion and exposure to a relevant radical message. We tested this hypothesis in the US because, at the time of this investigation, the Green New Deal was a matter of profound political polarisation in the US. Indeed, US public attitudes toward climate change are divided, which facilitates the formation of opinion-based groups, including radical groups (McGarty et al., 2009). That is, US citizens hold distinct social identities based on their positions on climate change. When these issue-based identities align with individuals' political affiliation, they initiate intergroup conflict, and affect intentions and behaviours (Bliuc et al., 2015). For example, believers in climate change were more likely to be Democrats and committed to environmental behaviours, whereas sceptics were more likely to be Republicans, have stronger national identification and be less likely to endorse environmental behaviours (Bliuc et al., 2015). Similarly, social dominance orientation (SDO), namely an individual's tendency to classify social groups along a superiority – inferiority dimension (for an overview, see Pratto, 1999), was found to support system justifying beliefs in climate change denial (Jylhä & Akrami, 2015). Thus, political attitudes traditionally associated with conservative positions tend to hinder action for climate change in the US.

Yet, the group processes that drive radical forms of action in support for climate change remain unclear. We addressed this question by examining the processes depicted in Figure 1. On the one hand, exposure to a radical message for climate change after an inclusionary experience is more likely to drive endorsement of a radical campaign for

climate change through processes of identity fusion and action intentions. On the other hand, system justifying beliefs and, in this context, SDO are likely to hinder the effect of exclusionary experiences and radical exposure on radical endorsement.

H1: Compared to the control condition, exposure to a radical message for climate change after an exclusionary experience reduces the probabilities of online support for a radical campaign, when people hold SDO beliefs.

H2: Compared to the control condition, exposure to a radical message for climate change after an inclusionary online experience increases the probabilities of online support for a radical campaign for climate change.

H3: Identity fusion with the radical group is triggered by an inclusionary experience and radical exposure, and, in turn, increases intentions to enact.

H4: Feeling empowered by the radical message increases identity fusion.

Methods

Participants

The previous experiments indicated 90% power can be achieved by recruiting approximately 30 individuals per condition. Hence, 95 US citizens (69.5% women, M_{age} = 29.39 years, *SD* = 11.77, Range:19 – 66 years) were randomly assigned to one of the three conditions (inclusion, exclusion, control) in an online study on climate change. Of these participants, 43.7% reported being American, 16.3% reported multiple nationalities, 4.2% were Canadian, 18.3% reported being from a European country, 3.2% were Mexican, 2.2% Cuban or from Philippines, and 2.2% were from the Middle East or Saudi Arabia. In addition, 9.5% reported their ethnicity rather than nationality. They were all US citizens. Regarding their ideological positions, 41.2% of the participants reported liberal views, 10.5% reported neutral ideological views, and 48.3% reported conservative views. In terms of US identification, 43.6% reported weaker ties

with the US identity, 7.4% reported neutral ties, and 49% reported strong ties with their US identity. Consistent with the previous studies, the stronger the US identification, the more conservative the ideological positions reported by the participants, $F(1, 93) = 6.47$, $p = .013$, $\beta = 0.90$, $SE = .35$, $t = 2.54$, 95%CI [0.03, 0.27], $R^2 = .06$.

Materials

The listing variables are measured with the same scales as in the previous studies: strength of identification (α = .85), political orientation (α = .92), Felt Excluded (α = .95), Felt Ignored (α = .96), empowerment (α = .95), system justification (α = .74), activist intentions (α = .84), radical intentions (α = .86)[14]. Social dominance orientation was measured with the SDO scale (Pratto et al., 1994). This scale includes 16 items, with responses ranging from 1 (*very negative*) to 7 (*very positive*) . An example item is "*To get ahead in life, it is sometimes necessary to step on other groups*" (α = .93).

Rhetoric Message. Participants in the experimental conditions were presented with the same message that was constructed based on a youth union's response to current US climate change policies. As previously, the message presented the problem and called for radical action against the status quo, social and racial inequalities. A real-life climate change campaign followed the message. As with Studies 2, 3, and 4, the control condition was presented with a message on a scientific breakthrough. The messages can be found in Appendix D.

Procedure

After giving informed consent, participants were asked to complete the demographic questions, identification scale, as well as the SDO, and were redirected to the Cyberball Game. In this study, the British flag was replaced by the American one. Then, participants completed the manipulation checks as per Study 3 and were provided

at least one minute to read a message against governmental practices regarding climate change. Afterwards, they were asked to complete the rest of the questionnaires. For the behavioural measurement, participants were told that: "*The Green New Deal is a radical call to action for climate change"* and asked to click on the appropriate box to either copy #GreenNewDeal and post it on their social media to support the cause or not. When clicking either of the options, participants were presented with the debrief form and thanked for their participation.

Analytical Approach

Hypothesis 1 aimed to examine whether exposure to a radical message for climate change after an exclusionary experience reduces the probability of online support for a radical campaign when people hold SDO beliefs. To test this hypothesis, we performed a robust binomial generalized linear model (robust GLM, Cantoni & Ronchetti, 2001) with British exclusionary experience (versus the control condition) as a predictor, SDO as a moderator, and their interaction on online support for the radical campaign versus no support. As with Study 4, we used the robust package (Maechler et al., 2022) in R programming software for our analysis and Mean-centered the moderator due to its involvement in interaction (Aiken & West, 1991).

Hypothesis 2 stated that exposure to a radical message for climate change after an inclusionary online experience drives online support for a radical campaign for climate change. Hypothesis 3 stated that these societal practices drive processes of fusion with the radical group, which, in turn, predicts action intentions that influence the behavioural response. These hypotheses were tested with the regressed path that is presented in Figure 1 using the same analytical approach with Studies 3 and 4. Hypothesis 4 is that feelings of empowerment increase identity fusion. Adding empowerment as another predictor of identity fusion in the regressed path violated the

underlying assumption regarding the correlation of the residuals in relation to activist intentions and behaviour. Since there aren't any similarities between these variables to allow for their correlation, empowerment was excluded from the model and tested separately with an ordinal regression of feelings of empowerment on fusion. Consistent with the previous studies, all models were tested for the degree to which they improved the Intercept-only model.

Results

Table 4 presents the correlations, Means and Standard Deviations of the measures included in Study 5.

Manipulation checks. We tested whether the Cyberball task triggered feelings of exclusion. A series of *t*-tests of the exclusionary condition on feeling ignored and feeling rejected showed that participants felt both more ignored under exclusion than inclusion ($M_{exclusion}$ = 16.47, SD = 4.43 > $M_{inclusion}$ = 11.56, SD = 3.21), $t(62) = 5.07$, $p < .001$, d =0.86, and more rejected under exclusion than inclusion ($M_{exclusion}$ = 15.97, SD = 4.30 > $M_{inclusion}$ = 11.31, SD = 3.07), $t(62) = 4.98$, $p < .001$, d =0.81. Being excluded from the social group decreased the probability of perceiving frequent ball receptions compared to social inclusion, β = -.77, SE = .13, t = - 6.16, $p < .001$, 95%CI [-1.05, -.49][15].

Table 4

Correlations, Means and Standard Deviations of the Factors Included in Study 5

	1.	2.	3.	4.	5.	6.	7.	M(SD)
1. Identity Fusion								2.97 (1.22)
2. National Identification	-.09							3.57 (1.12)
3. Conservatism	-.15	.26***						9.78 (3.97)
4. Empowerment	.42***	-.06	-.14*					4.54 (1.07)
5. System Justification	-.12	.54***	.61***	-.08				3.21 (0.85)
6. SDO	-.14	.33**	.64***	-.13*	.55***			2.17 (1.01)
7. Activist Intentions	.21**	-.17	-.31***	.36**	-.26*	-.19***		4.55 (1.22)
8. Radical Intentions	.11*	-.16	-.24***	.39**	-.20*	-.04**	.46**	2.91 (1.47)

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$.

Process 1

Preliminary analysis. We explored the relationship between conservatism and the strength of US identification with system justification and SDO. A linear regression of ideological orientation and identification on system-justifying beliefs, $F(2,92) = 50.4$, $p < .001$, $R^2 = .51$, indicated that system-justifying beliefs increased for every unit increase in conservatism, $\beta = .11$, $SE = .02$, $t = 6.75$, $p < .001$, 95%CI [0.08, 0.14], as well as for every unit increase in the strength of US identification, $\beta = 0.31$, $SE = .06$, $t = 5.47$, $p < .001$, 95%CI [0.20, 0.42]. A similar regression on SDO[15], $F(2,92) = 33.22$, $p < .001$, $R^2 = .41$, showed that SDO increased for every unit increase in conservatism, $\beta = 0.06$, $SE = .01$, $t = 7.08$, $p < .001$, 95%CI [0.05, 0.08] and every unit increase in US identification, $\beta = 0.07$, $SE = .03$, $t = 2.10$, $p = .039$, 95%CI [0.003, 0.13].

Hypothesis 1 stated that exposure to a radical message for climate change after an exclusionary experience reduces the probability of online support for a radical campaign versus no support when people hold SDO beliefs. A robust binomial GLM with exposure to the radical message after an exclusionary experience (dummy-coded with control as the reference level) as a predictor, SDO as a moderator (Mean-centered), and their interaction on support for the radical campaign versus no support did not improve the Intercept-only model, $\Delta\chi^2(3) = 4.04$, $p = .27$. Individual effects were not statistically significant, all $p > .14$. The results reveal no evidence of radical endorsement after an exclusionary experience when people hold SDO beliefs[16].

Process 2

We tested a regressed path of exposure to a radical call for climate change after social inclusion, which was expected to directly predict endorsement vs no endorsement of the radical campaign for climate change but also indirectly through processes of identity fusion and action intention (H2). Although this regressed path did not fit the data well, $\chi^2(2) = 8.82$, $p(\chi^2) = 0.01$, RMSEA = 0.19, CFI = 0.73, SRMR = 0.09[1], individual effects supported most of the proposed relationships.

Specifically, there was a significant direct effect such that participants exposed to the radical message while being socially included tended to copy the hashtag in support of the radical campaign, $\beta = .63$, $SE = .28$, $z = 2.27$, $p = .02$, 95%CI [0.09, 1.17]. The total indirect effect was not statistically significant, $\beta = .02$, $SE = .04$, $z = .60$, $p = .55$, 95%CI [-.05, .10]. Failing to support our predictions, the inclusionary condition did not predict significant differences in identity fusion, $\beta = .14$, $SE = .23$, $z = .61$, $p = .54$, 95%CI [-.31, .59], $R^2 = .004$. However, identity fusion predicted an increase in activist intentions, $\beta = .39$, $SE = .13$, $z = 3.05$, $p = .002$, 95%CI [0.14, 0.64], $R^2 = .12$, while activist intentions predicted an increase in endorsing the radical campaign, $\beta = .41$, $SE =$

.08, $z = 4.95$, $p < .001$, 95%CI [0.25, 0.57], $R^2 = .28$ (for the path to radical endorsement).

In a second iteration of this model, we replaced activist intentions with radical intentions, $\chi^2(2) = 7.25$, $p(\chi^2) = 0.03$, RMSEA = 0.17, CFI = 0.62, SRMR = 0.11. The model showed a similar pattern of individual effects. An inclusionary experience did not predict fusion, $\beta = .06$, $SE = .23$, $z = .25$, $p = .80$, 95%CI [-0.39, 0.50], $R^2 = .001$, but fusion predicted radical intentions, $\beta = .34$, $SE = .13$, $z = 2.52$, $p = .012$, 95%CI [0.08, 0.60], $R^2 = .06$. Radical intentions, along with inclusion, predicted endorsement of the radical campaign, $\beta = .32$, $SE = .10$, $z = 3.30$, $p = .001$, 95%CI [0.13, 0.51], and $\beta = .64$, $SE = .28$, $z = 2.30$, $p = .02$, 95%CI [0.09, 1.19], respectively ($R^2 = .27$ for the path in support of the radical campaign). The total indirect effect was not statistically significant, $\beta = .01$, $SE = .02$, $z = .25$, $p = .80$, 95%CI [-0.04, 0.05].

Fusion & Empowerment. Hypothesis 4 predicted that feeling empowered after reading the message increases identity fusion. The results from the ordinal regression of empowerment on identity fusion showed an improved fit over the Intercept-only model, $\Delta\chi^2(1) = 19.32$, $p < .001$, $R^2 = .18$ and supported the role of empowerment: for every unit increase in empowerment, fusion with the radical group increased from 1 (*no overlap*) to 5 (*total overlap*), $\beta = .82$, $SE = .20$, $t = 4.26$, $p < .001$, 95%CI [0.45, 1.21].

Discussion. We found evidence that a radical campaign for climate change was supported in the US as a result of exposure to a radical message for climate change followed by an inclusionary experience. The results suggest that identity fusion and its impact on activist intentions determined this online behaviour. However, in this case, feelings of empowerment drove radical support distinctively from the effect of inclusionary experience. In this way, the immediate contextual experience leads to online support for a radical campaign, but the group processes that impel actions of

support are triggered by the emotional appraisal of the radical message. Whether feelings of empowerment and inclusionary experiences initiate radical endorsements separately or in conjunction, this finding demonstrates the role of socio-political context and cultural variation in online radical support. On the other hand, SDO and system-justifying beliefs strengthened social order and inhibited any form of action. The result replicated findings from Studies 3 and 4 suggesting that system justifying beliefs impede online support for radical action across contexts in both the US and the UK.

General Discussion

Since social exclusion is perceived to be unfair (Lind & Tyler, 1988), it motivates people to resolve the perceived injustice (van den Bos & Lind, 2009), which is likely to be achieved by joining a radical group (Bal & van den Bos, 2017). Here, we sought to extend this hypothesis by showing how exposure to terrorist and radical narratives interact with social inclusion/exclusion in different socio-political situations to influence political radicalisation. In five studies, we examined how social inclusion and social exclusion are likely to elicit support for radical campaigns across the political spectrum. We tested these ideas for the first time in the context of a hate speech incident (Study 1), a non-specified context (Study 2), Brexit (Study 3), vote denial in European elections (Study 4), and climate change (Study 5). We also identified the underlying processes that are likely to facilitate radical endorsement. These effects were influenced by the interplay of social inclusion and exclusion with the absence or presence of a radical group's rhetoric, the perceived identity of this radical group and cultural dynamics.

Study 1 examined how physio-cognitive processes develop as a result of the interaction of social exclusion and inclusion with terrorist or radical narratives, in the socio-political context of a hate speech incident and national cultural values

(Britishness) to elicit radical endorsements. Results found that social exclusion elicited processes of threat avoidance. By contrast, social inclusion regulated cognitive performance (e.g., via heart rate deceleration) after exposure to a radical message and allowed anti-discriminatory radical preferences. Study 2 confirmed that the influence capacity of the radical message is context-driven. National dispositions and validation of the radical messages being representative of the social reality rendered the influence of this radical message successful.

In Studies 3 to 5, we shifted our focus to the processes that predicted by the contextual interdependency of social inclusion/exclusion, radical rhetoric, and broader socio-political contexts, drove pro-radical endorsements. Study 3 explored how an ingroup/outgroup radical source may exert influence after an inclusionary or exclusionary experience to drive support for a radical or a reactionist campaign, respectively. Results showed that a combination of a pre-existing belief system and identity processes determine the direction of behaviour change. Exclusionary experiences followed by an outgroup radical message, as well as an anti-egalitarian belief system, tended to drive reactionist support. Study 4 emphasised that dynamics of identity fusion and a belief system of democratic dysfunctionality tended to elicit radical endorsement triggered by a shared experience of vote denial. Study 5 confirmed that these societal experiences and identity processes can drive similar outcomes via different influence manifestations across socio-political contexts and cross-culturally.

Theoretical Contributions

The present studies advance research on political radicalisation. First, our results highlight how different contextual influences come together to promote different radical responses. Despite individual exclusionary experiences being considered as tipping points to radicalisation (McCauley & Moskalenko, 2011), this finding was derived from

case studies of individuals who had already committed violent offences. Our research used the contextual interdependency of social exclusion and inclusion with radical exposure to investigate the initial steps to radicalisation. It utilised different sets of contexts to determine the influence capacity of a radical group. It predicted which context characteristics are likely to encourage radical action for positive change or further polarisation. In this way, it offered a range of context markers and combinations that may explain otherwise inconsistent behavioural outcomes.

A second contribution to political radicalisation literature emerges from identifying the underlying processes that, alongside context, drive this diversity in behavioural responses. Studies 3 to 5 systematically replicated findings in line with Bal and van den Bos' (2017) framework by showing that system justifying-beliefs tend to diminish online support for any form of a radical campaign across contexts. However, our findings extend this previous research by showing that identity differences and anti-egalitarian beliefs may drive campaign endorsement. More specifically, Study 3 shows that an outgroup radical message is likely to drive an antithetical behaviour where individuals actively support extreme actions that oppose those proposed in the message (reactionist endorsement) when these actions share common ideological ground with one's belief system. As such, social exclusion involves a dimension of identity threat (Hales & Williams, 2018), which can be resolved by endorsing radical ideologies that affirm the ingroup identity (Hogg, 2014).

The third contribution of our research to this previous work is that it adds another route to political radicalisation by accounting for the influence of social inclusion. Social inclusion signals fair treatment and offers a sense of belongingness and connectedness, especially when it originates from the ingroup. When group members have a chance to affirm their ingroup identity, they become more positive and less

defensive about their ingroup (Derks et al., 2011; Glasford et al., 2009) and, thus more likely to be influenced by radical voices from within their group (Smith et al., 2020). The results suggested that although this effect of social inclusion depended on the context in which the inclusionary experience is placed, it was sustained in both the UK and the US, demonstrating the capacity of social inclusion to drive radical endorsements across contexts and cross-culturally.

The group processes underpinning radical support in relation to inclusionary experiences unfolded as follows. Throughout Studies 3 to 5, feelings of empowerment by the radical message triggered fusion with the group's identity, leading to activist and radical intentions to act. These intentions, then, promoted online support for radical campaigns. The findings support the idea that identity processes are facilitated by two characteristics of a radical message, its resulting psychological empowerment and its relevance to the self and social reality. The former is associated with the perceived efficacy of a proposed action (Selvanathan & Lickel, 2019) and the latter with the socio-cognitive influence of the message. Previous research has suggested that single-issue groups are likely to be influential when their positions reflect the broader social reality (Mugny & Papastamou, 1982), which was further corroborated here as initial steps to radicalisation.

Our results provide a better understanding of the intersection between inclusionary experiences and radical endorsement by further identifying the contextual dynamics and belief system that supports this influence. The perceived inclusion due to a shared exclusionary experience was adequate to both collectivise and radicalise responses against vote denial. This finding confirms previous research that both perceptions and experiences of injustice may drive political radicalisation (van den Bos, 2018). Additionally, this finding advances it in that inducing a component of

collectivity instigates endorsement of the radical campaign as a pro-group behaviour resulting from an emergent common affiliation (e.g., Gaertner et al., 1993). This radical endorsement is further supported by perceptions of democratic inefficiency, which allow for differential treatments to counter this perceived injustice (Feddes et al., 2019).

Moreover, our results inform the social psychological theorising for social inclusion. They suggest that social inclusion is a distinctive social process that has its own psychological propensities and capacities to drive behavioural change. That is, social inclusion is not a social condition solely defined in relation to exclusionary experiences. Across the studies, we provided evidence that social inclusion regulates social cognition and facilitates radical influence. On the physio-cognitive level, social inclusion functions as a buffer that allows the influence of societal experiences because it decreases heart rates and triggers attentional vigilance to negative social cues. According to the defence cascade model (Lang et al., 1997), the defensive system is moderately activated, but action is not imminent (Bradley et al., 2001). Study 1 corroborates this interpretation and extends this by conveying the capacity of social inclusion and radical exposure to promote radical endorsement.

Empirically, the statistical analysis provides additional evidence of the effects of context interdependency on radical endorsement. Analysis of regressed paths showed differences in model fit across the studies. In Study 3, the results suggested an equal possibility of different relationships influencing radical endorsement. In Study 5, the model fit on data was not adequate. While this could imply a poor choice of variables, experimental design, or potentially missing important variables, the regressed path in Study 4 showed adequate fit. Given that most measurements were kept consistent, and experimental design and sample size were relatively similar, this discrepancy may be linked to context differences. This mixed evidence of the model supports the notion that

context interdependency matters when investigating radical endorsements and adds to the explanatory value of our findings.

Limitations and Future Research

Relative to previous work, this paper (1) demonstrated how incorporating context facilitates the emergence of different forms of support for online radical campaigns relative to an exclusionary or inclusionary experience; (2) identified the biopsychosocial mechanisms relevant to these behaviours; (3) assessed the consistency of the radical emergence across contexts and cultures. However, there are some limitations that need to be addressed.

First, Study 1 provided evidence of latency biases in the dot probe task, but no other oculomotor responses. This is inconsistent with previous research, which found directional and durational biases due to social exclusion (Chen et al., 2017). However, some of these biases were associated with positive affective stimuli, whereas we aimed to examine the impact of negative information on the development of radical propensities. Additionally, it has been proposed that non-significant results to eye tracking attentional biases are related to the time course of attentional allocation (Amir, Foa, & Coles, 1998; Bar-Haim et al., 2007; Mogg & Bradley, 1998). Further research could benefit from adding positive stimuli and orienting different time points when investigating the underlying cognitive processes that drive radical interest in the context of a hate speech incident, or injustice, more broadly.

Second, Study 1 (including the pilot study) did not test whether the suspect's individual characteristics affect how the suspect is judged or viewed. For example, we did not test for sex differences. Research in criminology and criminal justice confirms differential public perceptions of female and male offenders (Covington & Bloom,

2003; Rodriguez et al., 2006; Russell, 2013). From a different perspective, Kteily and colleagues (2014) argued that perceptions of negative ambiguous targets are dependent on their perceived ideological orientation. However, Busemeyer and Townsend (1993) suggested that attitudinal responses have less to do with individual differences of the target and more with the probability of an expected outcome. Whether either of these notions affected how the suspect in Study 1 was perceived beyond and above any contextual influences requires further investigation.

Third, Study 1 used two different types of narratives (terrorist and radical) to investigate their influence on radical preferences in conjunction with an exclusionary or inclusionary experience in the context of hate speech. Despite the commonalities between these types of narratives regarding their communicative characteristics and use of language, their qualitative differences pertain to the use of violence and their ideological foundation. However, Study 1 has yet to control for ideology, which may have confounded the results. Although Study 2 proposed that social relevance might be a factor that explains the influence of the radical rather than terrorist message, the results need to be treated with caution. Similarly, the adverts used as a behavioural measurement in Study 1 have not been tested as to whether they are perceived to reflect violent, radical, or neutral characteristics. While the creation of these adverts relied on linguistic features associated with these categories, a pilot study could have further confirmed the results. Another consideration is relevant to whether the radical advert is indeed perceived to be radical or activist. Whereas participation in a study aiming for anti-discriminatory change can be considered an activist act, we perceived that it included an element of urgency and would still be non-normative at the time of investigation, which qualifies for a radical measurement (Capelos et al., 2017). Further

research using real-life adverts that include linguistic features of the respective category might shed light on the effect of context interdependency relative to hate speech.

Forth, the psychological processes examined here need to be tested in different sets of contexts to investigate how generalisable these results are. For example, it would be useful to test these processes in conditions defined by being exposed to opposite radical rhetoric and societal experiences of blame (see Malle et al., 2014 for a theory of blame). In addition, we cannot forge a direct comparison between US and UK cultural institutions affect the relationship between context and radical endorsement because we did not test an identical design on the same contexts in both the US and the UK to reach conclusions. Rather, we aimed to identify the different ways in which influence unravels to predict radical support. The findings corroborate the emergence of similar influence patterns across countries. Expanding research on context functionality and belief systems beyond the Western culture, across campaigns, or testing within campaign variation can provide insights into the socio-political differences embedded in group processes to political radicalisation.

Practical Implications

Regarding the applied implications of this research, the findings have relevance for launching campaigns that can attract public support. Our results suggest that the political direction and ramifications of online radical engagement are context-dependent and emerge from the influence capacity of a radical rhetoric that acts upon how people are positioned online through the practices of others. In other words, they show that people are more likely to endorse a radical campaign after assessing whether the proposed narrative fits within their belief system and in line with their interpretations of their contextual experiences. When organising a radical campaign aiming for social good, NGOs, issue-based social groups, or third parties can benefit from setting up a

contextual experience, which not only provides information and a course of action but also introduces an inclusive experience based on a common identity. A successful campaign needs a psychological dimension driven by contextual specifics. This is because individuals develop a "contextual mindset" that infiltrates radical positions and courses of action. If these elements are consistent and in accordance with one's social presence, their campaign will likely be endorsed (Study 2). Accounting for these contextual dispositions further facilitates campaign management and specifies the actors through whom communicating the campaign may be more effective.

The various ways in which public reactions are shaped have further implications for policymaking. To avoid divisive social outcomes, policymakers need to account for the way intragroup dynamics come about and unfold in response to practices of social exclusion and inclusion relevant to a socio-political matter. The findings from Study 4 suggest that even after an exclusionary experience, providing a sense of inclusivity in the exclusionary experience can diminish behaviours of further polarisation, such as those in Study 3. It is how these contextual experiences are perceived and interpreted that moderates radicalisation processes (van den Boss, 2018). Practically speaking, a radical message that emphasises these shared views and the group's potential to induce pro-social change is likely to be perceived as empowering and exert influence when the immediate societal experience and broader context are not threatening to the individual. However, an unexpected exclusion from the dominant group combined with a radical message that emphasises the potential to induce societal change triggers a boomerang effect leading to the endorsement of counter-campaigns via an ingroup-outgroup distinction. In this way, identifying the functionality of context in social interaction and societal experiences can inform current counter-extremist intervention and security

decision-making. By detecting how identity processes develop, practitioners can intervene to forestall those processes that may enhance political violence.

This paper provides new insights into how incorporating online contexts, broader socio-political contexts, physio-cognitive and identity processes shape online radical endorsements across the political spectrum. Rather than conventionally focusing on the transition of political radicalisation into violent extremism (Borum 2011a, Schmid 2013), this research investigated the early stages of radicalisation that are non-violent and relevant to contexts that largely co-exist in modern societies. In this way, it tested the ability of social inclusionary experiences to facilitate radical changes for public good and the contextual and identity dynamics through which societal experiences can be thwarted in extreme polarisation. Political radicalisation is a diverse process manifested through the integration of proximal and distal contexts that affect automatic and identity dynamics to transform social behaviour.

Endnotes

1. The reasoning for using the pictorial identity fusion derives from previous research that used the Inclusion of Self in the Ingroup Scale (Tropp & Wright, 2001). This was a pictorial scale where the self and the group were presented with two circles in different degrees of overlapping. Participants needed to report which one best represents their relationship with a given group. The more the overlapping, the more the inclusion participants perceive. Beyond the similarities between these scales that made them an appropriate measurement for our study, the theoretical basis of identity fusion as a relational, synergetic concept that, under circumstances, drives extreme pro-group actions (Swann & Buhrmester, 2015) better fits with the aims of our studies. The measurement was kept consistent across this paper.
2. We performed a series of robust binomial regressions with the experimental conditions as in the previous models and used violent vs radical adverts as the outcome variable. Our results indicated no significant differences across conditions, all $p > .13$.
3. Social inclusion and exposure to the radical message were added to test for consistency between intentions and behaviour. For exploratory purposes, we performed the same analysis with radical rhetoric and social exclusion, as well as with exposure to terrorist rhetoric and social inclusion/exclusion. Violent intentions were not predicted by either of these practices, all $p > .24$.
4. Due to high correlation between Felt Rejected and Felt Ignored, we also performed a *t*-test of exclusionary status on felt excluded (where scales were combined). Results showed that participants felt more excluded under exclusion rather than inclusion ($M_{exclusion} = 31.76$, $SD = 7.50 > M_{inclusion} = 21.00$, $SD = 7.96$), $t(118) = 7.62$, $p < .001$, $d = 1.22$.
5. Activist intentions showed that fitted a normal distribution (AIC = 936.38).

6. We took the log of scores to correct for the underlying assumption of residual normality.
7. Due to high correlation between Felt Rejected and Felt Ignored, a *t*-test of exclusionary status on felt excluded (where scales were combined) showed similar results. Participants felt more excluded under exclusion rather than inclusion ($M_{exclusion}$ = 33.33, *SD* = 6.35 > $M_{inclusion}$ = 20.28, *SD* = 8.06), $t(113) = 9.64$, $p < .001$, d =0.58.
8. Scores of ball reception fitted a Gamma distribution, AIC = 913.78. A GLM Gamma with log link and the same predictors on reception scores showed improvement on the Intercept-only model, $\chi^2(1) = 47.93$, $p < .001$.
9. Scores of unexpectedness fitted a Gamma distribution, AIC = 600.82. A GLM Gamma with log link and the same predictors on reception scores showed improvement on the Intercept-only model, $\chi^2(1) = 2.09$, $p < .001$.
10. For exploratory purposes, we examined the impact of system justifying beliefs and anti-egalitarian beliefs on action intentions. The results confirmed that activist intentions decreased for every unit increase in anti-egalitarian beliefs, β = -.09, *SE* = .02, t = -3.69, $p < .001$, 95%CI [-.13, -.04], , $F(2,142) = 9.67$, $p < .001$, R^2 = .11. System justifying beliefs did not significantly affect activist intentions, β = -.06, *SE* = .12, t = -.47, p = .64, 95%CI [-.30, .19]. These factors did not predict any differences in radical intention, both p >.21.
11. In line with Study 3, we further explored the impact of system justifying and anti-egalitarian beliefs on action intentions. Although our results confirm that activist intentions decreased for every unit increase in anti-egalitarian beliefs, β = -.12, *SE* = .02, t = -5.44, $p < .001$, 95%CI [-0.17, -0.08], system justifying beliefs did not significantly affect activist intentions, β = .03, *SE* = .13, t = 0.23, p = .82, 95%CI [-0.23, 0.28], $F(2,131) = 17.32$, $p < .001$, R^2 = .20. Similarly, radical intentions decreased

for every unit increase in anti-egalitarian beliefs, β = -.39, *SE* = .14, *t* = -2.83, *p* = .005, 95%CI [-0.67, -0.12], whereas system justifying beliefs did not affect radical intentions, β = -.004, *SE* = .05, *t* = -.07, *p* = .94, 95%CI [-0.09, 0.10], $F(2,132) = 4.84$, $p = .01$, $R^2 = .05$.

12. We took the log of radical intentions to correct for underlying assumption violations.
13. Correlation between Felt Excluded and Felt Ignored, $r = .95$, $p < 001$.
14. Comparison of distribution fit for percentage indicated that an exponential distribution fitted this index better than the rest of positively skewed distributions, AIC = 527.93. A GLM of exponential distribution is a GLM with Gamma distribution where the dispersion parameter is set equal to 1. On fitting a model of exclusionary experience on perceived percentage, we found improvement on an Intercept-only model, $\chi^2(1) = 34.71$, $p < .001$. Due to high correlation between Felt Rejected and Felt Ignored, we also performed a *t*-test where these scales were combined. Results confirmed that participants felt more excluded under exclusion rather than inclusion ($M_{exclusion}$ = 32.44, *SD* = 8.58 > $M_{inclusion}$ = 22.88, *SD* = 6.17), $t(62) = 5.11$, $p < .001$, $d = 0.57$.
15. To correct for the normality of residuals in this model we took the log of SDO.
16. In consistency with the previous studies, we further examined whether SDO and system justifying beliefs reduce action intentions. A linear regression model of system justification and SDO on activist intentions showed no statistically significant effects, all $p > .07$. A Gamma distribution fitted better on radical intention distribution, AIC = 592.46. However, a model of system justification and SDO on radical intention showed no improvement on an Intercept-only model, $\Delta\chi^2(2) = 1.00$, $p = .15$. Individual effects showed no statistically significant differences on radical intentions, $p > .08$.

Chapter 4

Thesis Discussion

Thesis Discussion

In this Chapter, I summarise the findings across the empirical chapters, consider the theoretical and practical implications from my thesis, highlight the limitations to the presented work and suggest avenues for future research in the study of early stages of political radicalisation.

This thesis examines the function of context in developing processes of radicalisation. Both contextual and psychological factors to radicalisation have received attention in the literature (McCauley & Moskalenko, 2011; Moghaddam, 2018). This attention has led to the emergence of research on radicalisation and extremism as a distinct discipline. There are academic journals and special issues on radicalisation and extremism (e.g., Oluf Gøtzsche-Astrup et al., 2019), review papers (du Bois et al., 2019), recent calls from the European Commission and national government agencies on supporting the prevention of radicalisation leading to violent extremism. There are radicalisation awareness networks, think tanks, and research centres that aim to inform assessment tools, interventions, and provide guidelines for conducting research on radicalisation (e.g., https://www.radicalisationresearch.org/). Although there is consensus among these sources regarding the causes of radicalisation, there remains a lack of empirical research that has sought to understand what context combinations are likely to predict radical shifts, and even less that has detected how these context combinations influence the psychological processes that drive different forms of radical endorsements. As such, this thesis presented a series of empirical studies that tested the combined effects of different context categories on radical responses. The contexts categories examined across the studies were surveillance and privacy violations, social inclusion and social exclusion, alongside exposure to radical and terrorist messages relative to different socio-political situations and national cultural contexts. The findings

emphasised the importance of accounting for context interdependency to investigate shifts to radical action and add empirical evidence on understanding the diversity in human responses at early stages of radicalisation.

1. Revisiting the Research Questions

RQ1: How does combining immediate (online/offline) societal, socio-political, and national cultural contexts influence radical endorsement?

In answering RQ1, I first reviewed the literature on the contextual drivers and psychosocial processes associated with political radicalisation to propose a conceptual framework of context interdependency to radical support (*Chapter 1*). This review contributed to the research question by showing how an integrated approach, where radicalisation is perceived as resulting from the interaction between the individual, the immediate social milieu, the state acts, embodied cultural capital, and the Internet, explains variation in support for radical action. The proposed framework assumed that radical support develops from different sets of context categories where nuanced changes can drive intragroup and intergroup differences, as well as differences in individual dispositions and cognitions relative to radical outcomes. Due to its contextual focus, the framework allows the investigation of different types of context categories and variations within categories. For example, it allows the investigation of other types of radical narratives a user can encounter online in conjunction with various types of societal practices (e.g., discrimination) to examine radicalised shifts. This flexibility in including different sets of context categories allows model adaptation to contextual changes and newly emergent social systems (e.g., new radical groups, socio-technical systems that include more complex human-computer interactions) making it possible to examine radical emergence from a range of combined context categories.

In reviewing the core models of radicalisation, it became clear that the use of context interdependency manifestations as lenses to interrogate political radicalisation is still scarce. Yet, Chapter 1 showed that studying this interdependency offers significant opportunities for a deeper understanding of radical action and the group processes that likely figure in disparities of radical support. Investigating this interdependency empirically speaks to key challenges to political radicalisation research in relation to: i) how is context conceptualised, ii) which contextual features determine radical endorsements with relation to different socio-political situations, iii) the need for consistency in the relationship between context and direction of radical behaviour to allow for comparative evaluations in research (Neumann & Kleinmann, 2013; Victoroff & Adelman, 2012; Wolfowicz et al., 2019). Findings in *Chapter 2* and *Chapter 3* inform some of these key challenges.

First, radicalisation models tend to refer to context categories, such as 'cultural' and 'social', to describe the levels at which radicalisation processes take place (e.g., McCauley & Segal, 2009). A lack of conceptual clarity in the extent to which these categories include similar or different context features (e.g., grievance and oppression) may create problems in identifying the most relevant context for a given outcome, as well as problems in interpreting and applying relevant findings (Nilsen & Bernhardsson, 2019). Driven by previous theories that social contexts impact individual behaviour (Aker, 1998), we identified the context categories, their features, and the structural determinants that promoted radical outcomes across the studies of this thesis. This typology is presented in Table 1. A theoretical contribution of this typology is that it conceptualises context as a dynamic system of various context categories whose structural properties determine the behavioural outcome. The empirical findings across the studies showed that by examining the joint effect of these context categories, we

may be better positioned to detect the psychological processes that drive radicalised responses and explain differences in the direction of these responses.

Table 1

Proposed Typology based on the Empirical Work in Chapter 2 and Chapter 3

Context Categories	**Context Features**	**Structural Determinants**
Socio-cultural	Values relative to national matters (e.g., on governance)	
Social	Ingroup versus Outgroup Distinction from (dis)similar others-social comparison	Socialisation: Tested via vicarious interaction
Socio-political	Incidents of corruption, Incidents of violation of human rights, failure of policy or law implementation	Group Processes: Emergence of a shared identity, consensualisation and validation (from within the group), Identity fusion
Immediate Societal (online/offline)	Experienced societal practices, access to information (narratives), task characteristics	
Temporal	Point of time when an event happens or is salient, frequency of event occurrence and duration	

Second, the proposed context categories and structural determinants include spatiotemporal and psychological components, which represent the different influences that may drive radical endorsement. Here, I did not aim to be exhaustive of context categories and structural determinants but rather to investigate whether using a

minimum set of context categories as a system may systematically lead to radical endorsements. While there are many context-specific risk factors, there is little systematic assessment of the varied and sometimes contradictory evidence base (Bondokji et al., 2017; Allan et al., 2015). This thesis addresses this absence by identifying the combinations of context categories that consistently enable radical endorsements. An inclusive experience (*immediate societal*) was found to trigger support for radical campaigns (*Chapter 3*) and an urge to interact with radical groups (*Chapter 2*) when combined with the presence of a radical group (*social*) that advocates for change against the status quo *(immediate societal)* relative to a socio-political matter (*socio-political*) that, at the time of the investigation (*temporal*), induced a moderate conflict with other parts of the society, and supported by one's belief system cross-nationally (*socio-cultural*). By contrast, an exclusive experience (*immediate societal*) followed by exposure to a radical message from an outgroup *(social)* promoted reactionist endorsement relative to Brexit (*socio-political situation*) that, at the time, induced increased polarisation with other parts of the society. This relationship was associated with a different belief system (*Chapter 3*). In both cases, the behavioural response was moderated by group processes and existing belief systems (see later), suggesting a combination of spatiotemporal and psychological components to explain radical shifts.

Third, the findings of this thesis suggest that combining different context categories influences radicalised behaviours differently. Chapter 2 showed that radical actions are more likely to result from experiences of injustice when these apply to a large social group and are combined with the potential of interacting with radical others who are not perceived to threaten the shared identity (i.e., exposure to radical ideas from the ingroup), or progressively endorsed due to the magnitude of certain incidents (e.g.,

privacy violations). Findings in Chapter 3 supported this notion. They showed that inclusionary societal experiences combined with exposure to radical narratives that are in line with one's belief system tend to promote radical support. However, Chapter 3 extended this by demonstrating that a negative societal experience (social exclusion) combined with exposure to a radical group's narratives whose identity is perceived to threaten a positive for the individual resolution (i.e., exposure to a radical message from an outgroup) is more likely to promote reactionist rather than radical support relative to the socio-political context of Brexit. In this way, individuals are more likely to endorse a radical action for prosocial change when it is consistent with a positive interpretation of the prevalent set of context categories, and a reactionist action when it is consistent with a negative interpretation of the prevalent set of context categories. This difference in findings is essential considering that negative experiences have been the predominant risk factor for radicalisation (Bal & van den Bos, 2017), and empirical research on mixed evidence is lacking (McGilloway et al., 2015).

How different sets of context categories unfold to promote different radicalised preferences is determined by the way the design and functionalities of online communication media are used to mobilise individuals (e.g., Postmes et al., 2001; Sassenberg & Boos, 2003), form, disseminate and replicate attitude and behaviours (Jaishankar, 2008; Yar, 2006). The findings of this thesis supported that exposure to radical rhetoric on newspaper interfaces alone cannot predict radicalising actions unless combined with other concurrent context categories, such as practices of inclusion and exclusion from the national group. By identifying the structural determinants associated with these categories, it is possible to explain certain forms of action. *Chapter 2* (Study 2) utilised two forms of socialisation: "being asked" about the best way to deal with the issue of privacy violation and providing an opportunity to interact with like-minded

others for a radical solution. While this micro-contribution has been mostly investigated relative to online activism (e.g., Garrett, 2006; Mercea, 2012), results in *Chapter 2* showed that they are likely to influence support towards radical groups or actions. This evidence is in line with a connective type of action in online platforms (Nekmat et al., 2019) and supports the radicalising capacity of online interactions (Matamoros-Fernández, 2021).

An important contribution of *Chapter 2* was to identify cultural differences in the group processes that facilitate pro-radical support and how real-life events influence pro-radical behavioural shifts in different countries. The findings from the Google search data indicated different behavioural patterns in the US and the UK. This study relied on the assumption that when people are interested in a particular issue, they tend to search for resources, news, websites, and other information related to that issue (Scheiter, 2011). It has been found that such search patterns are predictive of actual behaviour in relation to election voting (Swearingen & Ripberger, 2014), racism (Chae et al., 2015) and new policy (Troelstra et al., 2016). Chapter 2 showed that both the US and the UK public is expected to seek information for the topic of mass surveillance but to differ in searching for self-protective or pro-radical materials. The UK exhibited a *transitional* behavioural pattern from searches for self-protective measures to pro-radical material. In contrast, the US exhibited a *transformational* pattern indicated by a shift from not seeking information for potentially pro-radical contents to increasingly searching for them over four years. This difference resulted from an increase in the emergence of online data breaches. By using a validated measure of public behaviour, Study 3 (*Chapter 2*) demonstrated the context-performance relationship in early engagement with pro-radical resources.

This evidence informs three critical points relative to the role of culture in the early stages of political radicalisation. First, while most studies tend to investigate the cultural dimension of radicalisation processes or counter-radicalisation interventions by comparing democratic and non-democratic countries (e.g., Zhirkov et al., 2014), the findings suggest socio-cultural differences between culturally more similar countries, such as the US and the UK. While these comparisons have been rare in the radicalisation literature (Wolfowicz et al., 2021), the results in this thesis showed different behavioural patterns relative to the same events in these countries. They demonstrated that the UK and the US give greater weight to some factors over others (which I explore next). Echoing this, a second critical point is associated with recent suggestions that engagement with and diffusion of pro-radical materials and online actions is likely to be geographically biased (Youngblood, 2020). *Chapter 2* showed that these interpretations are context-sensitive and can be adequately assessed through a dynamic examination of how short-term events cumulatively drive long-term behavioural trends.

Third, results inform policy research on whether to target context-specific or universal factors of political radicalisation (e.g., Hasisi et al., 2019). Consistent with crime prevention research (Hardy, 2020), the results support the notion that radical endorsement emerges from a combination of socio-cultural values, immediate societal experiences, and the prevailing socio-political situation. More specifically, Chapter 2 demonstrated that a distinction between universal versus context-specific factors might underplay their combined effect on radical behaviour. Indeed, in examining similar context combinations and series of events in the US and the UK, we have shown that similar behavioural outcomes derive from different mechanisms. Study 2 of Chapter 2 showed that involvement with pro-radical action in the US and the UK included

differences in the role of collective efficacy, individuals' belief systems regarding the authorities and democratic governance. The significance of this finding relates to the fact that socio-cultural beliefs are associated with different influence mechanisms and, thus, shape reality differently. Thus, investigating these differences moves research beyond understanding radicalisation as a unified process.

In answering RQ1, our results provide evidence on the way incorporating immediate societal experiences, broader socio-political and national cultural context categories influence radical endorsements by i) introducing a conceptualisation of context that allows for a context-adaptive investigation of radicalisation processes, ii) identifying the structural components that in combination determine the forms of endorsement, iii) providing evidence on the way multi-layered socio-cultural influences embedded in individuals often beyond the level of consciousness affect group processes, context interpretations and behavioural trends to pro-radical engagement. Such delineation will allow researchers to focus on the combination of variables that are mostly relevant to political radicalisation (as shown throughout the empirical Chapters) and may also identify differences in how variables operate across contexts or countries (especially countries with the same defining features as shown by the findings for the US and the UK). The way context is understood here may have a considerable impact on how the concept of context is studied in radicalisation literature de facto. Further comparative research is needed to explore this typology's applicability and better understand how context interdependency can both challenge and amplify political radicalisation (Kepel & Rougier, 2016).

RQ2: How does context interdependency affect the psychological processes that promote different forms of radical endorsement?

To answer this question, I examined how physio-cognitive and group processes develop from immediate societal experiences (e.g., surveillance, social exclusion, exposure to radical rhetoric), broader socio-political situations, and national cultural references to elicit radical endorsements. Results from the empirical Chapters suggest context interdependency as a risk regulator (Glass & McAtee, 2006) since they influence the processes that either facilitate or hinder radical support.

An empirical examination of physiological processes showed that context interdependency tends to change physiological activity to adapt to context requirements, but not in all context systems. While an inclusionary experience decreased physiological arousal after exposure to terrorist rhetoric (*Chapter 3*), there were no differences in physiological arousal after exposure to terrorist rhetoric and surveillance compared to a resting period (*Chapter 2*). Yet, in Chapter 2, surveillance triggered attentional bias. That is, surveillance determined the cognitive resources, namely attention, an individual selectively devoted to processing negative cues in their online environment (Ripberger, 2011). In combination, societal experiences of exposure to symbolic terrorist rhetoric and surveillance drove a deliberate attempt for response inhibition (as shown by an increase in omission errors), namely an executive function that involves controlling one's behaviour to override context-specific dispositions (Diamond, 2013). These findings suggest that cognitive bias driven by different societal experiences tends to evoke task performance in compliance with societal expectations when these societal experiences are combined. Thus, societal experiences of surveillance and exposure to terrorist rhetoric can change cognitive boundaries in coping with these experiences, which shows in subsequent social behaviour.

Findings in Chapter 3 give a different account of the way context categories regulate physio-cognitive processes. In Study 1 of Chapter 3, it was the interactive

effect between terrorist rhetoric and social inclusion that predicted physiological changes. This interactive effect of societal experiences elicited physiological deceleration and an attitudinal tendency to support more severe punishments for ambiguously deviant others. Although, attentional biases still occurred, they were not induced by a salient societal experience (such as with surveillance in Chapter 2) but rather by independent cognitive functioning. Yet, visual behavioural patterns of longer fixation duration, namely attention allocation, tended to encourage severe punishment. This finding is consistent with previous research that visual attention affects legal decisions by influencing interpretations of visual information, especially of ambiguous targets (Leopold & Logothetis, 1999), which serve as a basis for subsequent judgement (Treisman, 2006). When a threatening societal experience (exposure to terrorist rhetoric) is combined with a positive one (social inclusion), the latter works as a physiological buffer of threat and allows for harsher judgements towards deviant targets. The findings show that physiological reactivity was adaptive to societal experiences, while cognitive processes of attention allocation provided the means for attitude formation in relation to an influence attempt. Thus, physio-cognitive processes make an individual resilient to contextual influences and constitute an anchor point for social comparisons by facilitating attitude formation towards others.

In answering RQ2, Chapters 2 and 3 explored how group processes are formed from different combinations of context categories to predict radical endorsements. Chapter 2 examined group processes to radical support in relation to the emergence of a contextually meaningful social identity, while Chapter 3 examined group processes by adhering to existing radical groups. Findings from Chapter 2 indicate that individuals' radical shifts depend on the interpretations of the prevalent societal practices in relation to a socio-political matter and how *intragroup dynamics* develop to redirect groups to

specific actions (e.g., Levine et al., 2012). More specifically, the perceived injustice of privacy violations induced a moral obligation to act against these violations, driving a new social identity to support privacy protection. This identity, then, initiated activist intentions that drove radical support.

To bring about radical change, a message of unfair treatment and a proposed action must be communicated among group members. Online social interaction is required to reinforce group processes (Smith et al., 2015). As shown in Study 2 of Chapter 2, this communication is facilitated by the Internet's capacity to channel ideas between people instantly. This Internet capacity in the context of institutional privacy violation encouraged radical influence by i) inducing the radical action as operating based on the shared identity, ii) allowing for the social validation of the proposed action, and iii) driving individuals to perceive share common goals with the radical members (Bagozzi & Lee, 2002; Terry & Hogg, 1996). Notably, the behavioural measurement here was about facilitating further interaction with radical members rather than endorsing a specific radical act per se. Thus, context interdependency in Chapter 2 shows how a newly emergent group membership becomes relevant or salient to specific grievances and provides a means for this group-based social identity to be expressed and manifested in radical involvement.

Findings from Chapter 3 have shown that social inclusion can promote radical endorsements directly or by initiating relevant group processes depending on the context system in which it is placed. In exploring additional context categories, Chapter 3 proposed that exposure to radical rhetoric associated with a positive societal context category (social inclusion) can influence identity processes to radical endorsement. This assumption contradicts previous radicalisation research, which associated radical outcomes with negative societal experiences, such as social exclusion (Bal & van den

Bos, 2017) and a process of identity fusion (Swann et al., 2009). Gómez et al. (2011) found that identity fusion predicted extreme support in response to social exclusion. A perceived experience of other UK and EU citizens being denied a vote in the European election in conjunction with exposure to a message that emphasises a radical solution predicted fusion with the radical group, which drove activist intentions. In turn, activist intentions elicited support for a radical campaign. Although vote denial when you have a right to vote is an unfair treatment, the results suggest that this process did not occur when only EU citizens or only UK citizens were excluded from voting and were subsequently exposed to a radical call. By contrast, it occurred due to a collective experience of both groups being excluded reflecting a sense of inclusiveness after a common experience.

In its operation in other socio-political situations, the experience of social inclusion combined with exposure to a radical message tended to directly support radical endorsement. Although Study 2 (*Chapter 2*) and Study 4 (*Chapter 4*) have shown that context interdependency drives specific group processes that encourage radical endorsement, others have shown a direct relationship between context interdependency and behavioural response. Across Studies 3 to 5 of Chapter 3, identity fusion elicited activist intentions, which, then promoted radical endorsements. This process was found in the context of Brexit, vote denial, and climate change, and in both the US and the UK suggesting its influence on political radicalisation cross-nationally. However, a direct effect of social inclusion and radical message was found in the context of a hate speech incident and climate change but not Brexit or vote denial. It seems that in extremely polarised socio-political situations (Brexit) or matters of governance (elections), social inclusion alone may not be adequate to facilitate the endorsement of specific radical solutions.

Notably, in Chapter 3, when social inclusion was combined with exposure to a radical message from the ingroup, we noticed no shifts towards the radical campaign (Study 3). This is inconsistent with the positive attributions associated with social inclusion and one's social identity (Williams et al., 2013). It is also inconsistent with findings from Chapter 2 that suggested ingroup influences contribute to joining a forum for pro-radical action. This may be attributed to unfair events affecting people's reactions more strongly than fair events (e.g., Van den Bos & Spruijt, 2002; Van den Bos & Van Prooijen, 2001). While privacy violations were perceived to be unfair (*Chapter 2*), Brexit is not necessarily perceived as an unfair event, given it was the outcome of a previous referendum. The polarisation due to Brexit negotiations when Study 3 (*Chapter 3*) was conducted may corroborate this. In this case, not endorsing a Brexit-related radical campaign can be a form of *reactive distinctiveness*, a tendency to differentiate the ingroup from similar outgroups (Spears et al., 2002). Although participants had a socially inclusive experience and the radical message against Brexit had been advocated by British delegates, who is considered to be an ingroup based on the national identity, it may as well be perceived as an outgroup based on a political position. If so, not endorsing the radical campaign is a potential response to the distinctiveness threat.

Whether identity processes influence radical shifts seems to be relevant to the emotional appraisal of the radical group's narrative. Studies 3 to 5 (*Chapter 3*) showed that feelings of empowerment after reading the radical message systematically influenced fusion with the radical group. Previous research on message persuasion tended to focus on the framing of a persuasive message (Smith & Petty, 1996), differences in information processing (e.g., Petty et al., 1986) and the degree of attitudinal commitment an individual has to the message sender or subject (Allen &

Meyer, 1990), leaving feelings of empowerment under-investigated. Accordingly, empowerment in relation to collective action has mostly resulted from a shared identity (Drury & Reicher, 1999) rather than facilitating it. In protests that led to violence, people felt empowered when acting on the basis of their shared identity, which also increased their sense of power (Drury & Reicher, 1999) and perceptions of collective efficacy (Selvanathan & Lickel, 2019). In this thesis, feelings of empowerment predicted fusion with the radical group communicating the radical message. While much of "hot cognition" (Kunda, 1999) in radicalisation is related to intense emotions of unfairness and threat (van den Bos, 2018), the results in Chapter 3 indicated that radical rhetoric is perceived to be more self-relevant than terrorist rhetoric and associated with feelings of empowerment. Thus, a radical narrative encompasses *social and emotional proximity* elements that facilitate successful influence.

An additional contribution of this thesis is that it unravels the belief system that supports the identity fusion process to radical endorsements. Consistency between this belief system and the proposed action tended to support radical endorsement in *Chapters 2* and *3*. Beliefs about democratic governance (including human rights) and support for the police constitute this belief system. Research has shown that UK citizens are less accepting of the police using new technologies due to privacy concerns (Bradford et al., 2020) and less supportive of the police after negative contact with the police (Dhont et al., 2010). By contrast, research on the US has shown that US citizens tend to be more supportive of the police (Ivkovic, 2008). This cultural difference is in agreement with results from *Chapter 2* and indicates that cultural differences in the belief systems shape radicalisation. Yet, cross-cultural examination revealed that dissatisfaction with democratic functioning and respect for human rights was associated with activist intentions against privacy violation in the US but not in the UK (*Chapter*

2). However, dissatisfaction with democratic governance predicted activist intentions of UK citizens in response to voting denial in European elections (*Chapter 3*). This discrepancy in the results emphasises that a belief system is an *interpretive system* of mental representations of the socio-political reality. How it contributes to radical influence is likely dependent on the context system in which it unfolds.

This context system > identity fusion > activist intention > radical endorsement process shares similarities with a socio-cognitive model of violent radical engagement proposed by Garcet (2021). This model includes four phases: collective pressure, fascination, radicalisation, and engagement. Collective pressure refers to context incentives. The rest phases comprise two stages each, which eventually lead to the stage of terrorist involvement. Initially, the individual attributes value and positive valence to the radical cause, making them adopt the victim's position about injustice or societal demand. Then, the individual evolves toward identity adherence with the radical group and adopts polarised attitudes. To adhere to the radical identity, the individual has internalised the radical discourse, has created relevant representations and reinforced cognitive mechanisms of moral neutralisation by the radical group. On the basis of this identity, they then endorse radical actions that outrun social and democratic norms. After this "activism phase" (Garcet, 2021), additional cognitive mechanisms are activated to drive terrorist involvement. This model was constructed based on testimonials of people at different levels of involvement in radicalisation relative to the "Islamic State." Similarities include combining a societal experience with radical exposure, identity adherence and positive valence. However, in the socio-cognitive process proposed in this thesis, positive valence is associated with a set of positive feelings of empowerment rather than fascination per se. The presented research expanded this model by i) focusing on specific context categories and their structural

determinants, ii) identifying moderators and their consequences for radical influence, and iii) adding positive societal experiences as drivers for radical endorsements.

Except for a radical versus no-radical distinction in the sample population, another difference between these models relates to activism. Garcet's socio-cognitive model refers to "peri-democratic" activism that includes threats and support of the group's radical actions to violent attacks. In this thesis, I distinguished activist and radical actions and intentions based on legality and violence. For example, this distinction is explicit in the ARIS scale (McCauley & Moskalenko, 2009) that was used across the studies. According to ARIS, activist intentions are legal and non-violent, whereas radical intentions can be illegal or violent. I believe this distinction makes the results more transferable. Having said that, the behaviour endorsed is also defined based on its subsequent consequences to impose swift social change. Moreover, there was an explicit reference to the action as a radical in most of the behavioural measurements used in this thesis, expect for Study 2 (*Chapter 2*), which is why a post hoc questionnaire was administered. Taken together, this evidence suggests: i) terminological reconciliation across disciplines would be beneficial for radicalisation research, ii) socio-cognitive model comparisons help identify the applicability of specific influence mechanisms across contexts, iii) structural determinants of socialisation and group processes influence subsequent behaviours and need to be accounted for in combination.

Important to note here that we do not perceive as an inconsistency between intention and behaviour that activist intentions predicted support for radical campaigns and engagement with radical others in the studies of this thesis. In criminology and sociology, actions for swift change are frequently named as “radical activism” (e.g., Corry & Reiner, 2020). In this sense, activist intentions are likely to predict some form

of radical behaviour. These findings are consistent with the findings of fundamental theories on the intention-behaviour relationship, such as the Theory of Planned Behaviour (Ajzen, 2011). Moreover, radical intentions tended to support radical endorsement in response to vote denial in European elections (UK) and climate change (US), suggesting that as long as individuals develop action intentions, a radicalised shift may be possible. Future research can assess the psychological processes that elicit these relationships between certain forms of action intentions and behaviour in some contexts but not others. This may be attributed to social representations related to these contexts, as shown by real-life events, such as the DHS case about climate activists, or pre-existing dispositions associated with this issue. Such an investigation can enrich our understanding of potential targets and radicalised outcomes.

Alongside the processes that facilitate radical endorsement, empirical the empirical Chapters provided evidence of the processes that seem to drive reactionist endorsement or hinder any form of support. The findings agree with previous research on political radicalisation that system justifying beliefs forestalls radical endorsements (Bal & van den Bos, 2017). Here, not endorsing a radical campaign is not necessarily a form of inaction. Instead, I treat it as a form of action that entails social meaning. Whether it represents a rejection of the proposed campaign or compliance with societal expectations, as shown in Study 1 (*Chapter 2*) and the status quo (*Chapter 3*), it is still a social doing that shapes contexts and relationships. In assessing the belief system that supports this relationship between system justification and behaviour, its ideological stance became apparent and was found consistently in both the US and the UK and across socio-political situations. Conservatism and nationalism were the main components of this belief system. They both predicted system justifying beliefs, while nationalism decreased action intentions (*Chapter 3*) (in line with Jost et al., 2004).

While a combination of social exclusion and exposure to radical narratives (*Chapter 3)* did not promote system justifying beliefs, it did promote the endorsement of a reactionist campaign in response to an outgroup narrative against Brexit. Cohen (2003) showed that individuals respond differently to policies depending on the political party from which they perceive this policy originated. Acting against the outgroup narratives conveys *reflective distinctiveness* (Spears et al., 2002). This is a process of increasing the differentiation of the ingroup to dissimilar outgroups, especially when found in unexpected position (social exclusion, Study 3).

Overall, investigating how specific context categories come together to affect processes of radicalisation, findings showed that this pertains to differential interpretation of inclusion as a personal societal experience or perceived outcome of a collective experience. This informs the political radicalisation literature by providing empirical evidence on the many facets of social inclusion. Sometimes is not the unfair treatment per se but how it psychologically shapes a sense of inclusivity that matters for radical support. In conjunction with exposure to radical rhetoric, social inclusion drove radical endorsement and initiated identity fusion processes. The findings agree with Swann et al. (2012) that in salient group contexts, the personal self can be fused with the collective self and endorse behaviours that involve attributes of the radical source. While some context categories and their associated beliefs may matter more in one country than another, social inclusion and identity-related processes tend to be common cross-culturally (Bartlett et al., 2010; Proctor, 2019).

Moreover, context interdependency shapes radical influence by capitalising on the ways Internet capacity allows the development of group processes to radical support. It forms a very subtle mechanism according to which individuals can be members of social groups, but at the same time act autonomously. Or better, in the

studies presented in this thesis they were given a choice. This "opt-in/opt-out" type of behavioural measurement that was used here has been found to permit the creation of flexible coalitions (Bennett & Segerberg, 2012) that boosted influence mechanisms to radical support. While this allows intergroup competition, individuals still comply with social rules. That is, they support radical campaigns or join relevant groups because they chose to do so and not because they had to (e.g., Stukas et al., 1999). Even via vicarious interaction and quasi-experimental designs, the results of this thesis illustrate that context interdependency can influence contemporary social action, and by implication, add a new line of research on contentious politics (Calderano, 2011).

The findings further inform an ongoing debate on the drivers of "good" and "bad" political radicalisation. This often reflects distinguishing between radicalised actions as drivers of democracy and radicalised actions that can resort in extremism and political violence (van den Bos, 2018). The findings contribute to this debate by detecting the processes that drive radical and reactionist endorsements. Whether these outcomes resort to extremism can only be assessed by examining people's behaviour after the radical endorsement, which can benefit future research. However, a reactionist endorsement can increase social polarisation. Although this could be considered a "bad" outcome for the public good, people who radicalise in this study are unlikely to attract authority's attention. In that sense, this thesis examined micro-radicalisations, movements and processes that induce conflict but allow for the symbiotic relationship between conflicting parts (Bailey & Edwards, 2017). By detecting the group dynamics that shape radical support relative to lived or perceived experiences and the structural determinants of the potential outcomes, this thesis explains variation in radical endorsement and serves to provide a degree of reconciliation to some of the scholarly debates in the literature.

2. Practical Implications

The framework suggested here incorporates the explanatory power of a multifaceted context conceptualisation and biopsychosocial mechanisms to investigate their influence on different forms of radical endorsement. Given its focus on tapping into social matters prevalent in modern society, this thesis has practical implications for policy-making for different societal institutions. Accounting for the influence of context as a system may be necessary to explain how or why specific implementation outcomes are achieved. The empirical Chapters provide evidence on the combination of context categories and underlying processes that drive different forms of radical support, informing existing frameworks for policy-making for the context-related questions they need to consider. The findings have shown that determining which context categories a policy should capitalise on and what are the structural determinants and individual characteristics they build upon, matters for the way they predict implementation outcomes. Using the proposed typology is more likely to achieve conceptual and terminological clarity and facilitate comparative evaluations across contexts or populations. Approaching context as a multi-system of interconnected sub-contexts may explain how certain behaviours occur, while failure to do so may limit informed interventions in different settings. *Chapter 2* illustrates that context interdependency is likely to provide a better explanation of the mechanisms of online influence that can be adopted from policies related to institutional privacy violations to account for group-based decisions and consequences. Findings in *Chapter 3* add to this by identifying the sets of contexts categories and their features (perceived identity, own vs others' experience) as tools for conflict management when aiming to prosocial outcomes.

In trying to delineate practical insights for policy decision-makers, the empirical Chapters suggest that closer attention needs to be paid to how different situations are

perceived and interpreted by individuals through socio-cultural lenses (e.g., Leung, 2005; van den Bos, 2018). Chapter 2 suggested that government-led practices that are perceived to contradict with socio-cultural beliefs are less likely to be accepted by individuals who already feel a sense of unfairness in relation to these practices. In Chapter 3, the psychological meaning attributed to these practices (inclusivity after a collective exclusionary experience due to government administrative practices) and identity fusion enriched understanding of subsequent radical support. These studies can inform security interventions on how state actions on contemporary socio-political matters trigger pro-radical endorsement and help shape policies that account for the relationship between identity and societal practices when aiming to address and mitigate security interventions. Like Gillespie (2010), we note that in times of crisis, when such practices have been expanded to every aspect of individual and social life to the extent that impose behaviours and lifestyles, policy-making needs to be reframed as a dynamic process that does not rely solely on automated forms of identification and does not prioritise the increase of state security independently of "situation transcending phenomena."

Moreover, the results have implications for the planning and implementation of online campaigns. Chapter 2 demonstrated the psychosocial dynamics that contribute to the emergence of a shared identity which, through an influence process that was orchestrated online, triggered the initial "click" to join a radical forum. This shared identity mobilised all involved parties to act collectively against institutional privacy violations. Additionally, a campaign tailored to a specific matter is more likely to be influential than a campaign that addresses social injustice more generally. A campaign that gives options and advocates for small actions that enhance the visibility and efficacy of a group effort was more likely to be endorsed when associated with specific

context categories (*Chapter 2*). In line with Nekmat et al. (2019), our findings suggest that these micro-actions in support of a radical campaign, such as posting a hashtag of the campaign in social media (*Chapter 3*) or joining a forum (*Chapter 2*), were more easily endorsed when placed in a specific socio-political situation compared to clicking on website links to get informed for a radical call (Study 2, *Chapter 3*).

While no conclusions can be reached as to whether people will sustain their commitment or engagement with the radical campaign, previous research has shown that people who endorse these forms of behaviour are more likely to be involved in collective action in the future (Mercea, 2012). Our findings suggest that contextualised representation permits the social actor to adapt to the reality of the moment, even online. Google Search data analysis (Chapter 2) corroborates this notion. People tend to shift towards pro-radical engagement with relevant groups and practices online over four years and display relatively stable mass-level interest in matters of privacy violation. Notably, it also shows that this behavioural trend is developed differently across countries. This information is important when planning a cross-cultural campaign and shows how current social events affect subsequent behaviour, which acts upon the context.

A further contribution of this thesis is on the issue of investigating and implementing procedures to weaken radicalisation. By adopting a contextual approach, this thesis provides a better understanding of variation in radical endorsements and shifts focus on the prioritisation of certain radicalisation policies over others. It identifies a number of context categories that consistently (social inclusion) or distinctively (social exclusion) promote different radical outcomes. More specifically, the results connect early stages of political radicalisation with group processes and emphasise that the functionality of the context appertains to its influence capacity to

direct either radical or reactionist endorsements. That is, it introduces the question of what kind of radicalised responses need to be disrupted in an intervention and provides evidence on the belief system that shapes these responses. For example, this body of research points to support for actions that may have more separatist consequences, and the context interdependency and group dynamics that could be targeted to reduce their influence. In this way, it suggests paying more attention to societal polarisation at early stages of radicalisation (Azough, 2017) and integrating critical reasoning about different context categories in counter-radicalisation training.

Much work has been focused on combatting radicalisation by preventing the development of "risky" factors or cognitions and reinforcing protective factors, such as social inclusion, as primary-level interventions (Barlett et al., 2010; Silva & Deflem, 2020). This work has led the creation of risk assessment tools, such as VAF (Vulnerability Assessment Framework, https://www.gov.uk/government/publications/channel-vulnerability-assessment) and Radar (Barrelle, 2015). Often these assessment tools have been criticised for taking a nominal approach to scoring (Lynch, 2017; Scarcella et al., 2016). The results suggest that a contextual approach facilitates an adaptive way to weigh factors, as well as to assess their predictive capacity and make decisions based on the consequences of the outcome. Moreover, empirical evidence in *Chapter 3* showed that so-called protective factors (e.g., social inclusion) are likely to instigate radical shifts, albeit different in direction compared to those identified in this previous body of research (i.e., extremist action). By utilising belief systems and group processes placed within a spatiotemporal dimension, their combined effect informs which factors need to be targeted (Wolfowicz et al., 2021) or whether multiple factors need to be targeted simultaneously. By using a

context-sensitive tool, it might be possible to understand nuanced changes in behaviour and provide appropriate support before this affects the wider group.

3. Limitations and Future Research

Despite important theoretical and practical implications, this thesis is not without limitations. While the empirical Chapters include a more detailed investigation of the limitations of individual studies, here I refer to limitations associated with this body of work as a whole. In acknowledging the limitations of this thesis, I consider new avenues for future research.

Scope. The first limitation is relevant to the scope of the findings of this thesis. Here, we argued that context interdependency will likely explain different forms of radical support. We did not aim to be exhaustive, and as such, combining the societal experiences investigated here with new contexts categories may lead to different behavioural outcomes. For example, research has shown that unemployment is a potential driver of political radicalisation because it serves as a grievance (Belanger et al., 2017, 2019), and, thus, employing individuals at-risk has been included in counter-radicalisation interventions in the UK (Windisch et al., 2016). What we cannot conclude from the work presented here is that combining unemployment with exposure to radical rhetoric (which fits with the radical messages presented in Study 1 and 2 of Chapter 3) will lead to endorsement of a radical action against unemployment or that this combination may initiate similar identity processes. However, the main contribution of this thesis is to account for the role of context interdependency on radical influence by identifying and testing the context categories and structural determinants relevant to an intervention. While the typology proposed in this thesis can help how to think about context categories, it should not be evaluated primarily for its predictive power but

rather for its explanatory virtue. The findings show that adopting a context-sensitive approach where context categories and structural determinants that are relevant to an issue have been assessed and accounted for can contribute to the detection of the ways radicalised outcomes may occur relevant to this issue.

A second limitation is a need for more information on the participant's location in investigating context interdependency. The socio-political situations were decided based on matters that were prevalent at the time of investigation (e.g., Cambridge Analytical Scandal, hate speech incident on campus) and based on those issues that scored higher as socio-political problems of our times in Study 2 (Chapter 3), such as Brexit, government governance, climate change. By contrast, there is little evidence on the impact of geo-information, meaning the effect of immediate context from where the participant joined the study. Lab experiments in Chapters 2 and 3 were conducted in the same lab and lab conditions, allowing for a comparative evaluation. Findings in Study 1 (*Chapter 2*) suggest that being under surveillance in a university environment may be normalised (in line with Stuart & Levine, 2017) and thus induce an increased effort for compliance with task requirements. Chapter 2 showed that the university environment allowed for radical preferences after experiencing inclusive practices in this environment. Yet, whether the location of an individual (being, for instance, a workplace, house, or lab) is another context dimension that needs to be added in the typology cannot be assessed here since the presented studies do not allow for causality accounts nor can this environment be specified for the studies conducted online.

Generating a more complex understanding of context systems that include the immediate location, immediate online experiences, their structural components, and interpretations relative to a socio-cultural context and belief system requires further research that includes measurement of actual online interaction. This would require

further thinking about the way these data can be collected. While the use of vicarious interaction or quasi-experimental design served practically and logistically as an initial examination of the effect of context interdependency, responding in online contexts may affect the continuity of action and not reflect how people interact in constantly changing contexts. With initial evidence driven by behaviour in situ presented in Study 3 (*Chapter 3*), this research needs to be expanded and can benefit from using new technologies. Using data from digital devices to examine location and movement (Hinds et al., 2021) or distractions from the environment (Pizzamiglio et al., 2017), or audio data (Dennis et al., 2019) combined with data from social media platforms where people tend to express and reinforce cultural logics (Cisneros & Nakayama, 2015) provides a plausible way to investigate this context system. This would i) lead to the development of complex, multi-level, non-linear models of context influence, ii) allow for longitudinal examination of behaviour, and iii) track changes in within-person behaviours extending findings in Study 2 (*Chapter 2*). In other words, it would contribute to developing a theory on how context functionality is shaped, disrupted, and adapted and the consequences of this on political radicalisation.

A third limitation relates to the types of behaviour investigated. In empirical Chapters, the radical or reactionist endorsement was investigated using a yes/no logic. That is, behaviour had the form of choice at a given moment. This does not necessarily affect the validity of the measurement because the campaigns included here were actual campaigns, and the actions proposed were among the most frequent in online campaigns. However, it does not provide evidence on sustained behaviours. With the exception of Study 3 (*Chapter 2*) where Google Search data were investigated over time and revealed dynamic changes in behavioural trends in the US and the UK, the rest of the analysis lacks an examination of the effects of context interdependency on dynamic

behaviours, including naturalistic behaviours, and changing behaviours. A difference between the tested behaviours and similar behaviours in naturalistic settings is that the former is very strict in interpretation. Since this thesis aimed to provide initial evidence on the impact of context interdependency, I used a measure of behaviour as an outcome indicator of endorsement versus no endorsement. In Chapter 3, an additional option was added to explore this possibility. Investigating more dynamic forms of behaviour would allow researchers to monitor an individual's cognitive function. By examining how people behave when more choices of radical action are available, we could better understand how context dynamics are perceived and evaluated. For instance, radical endorsements may be less likely if the implementation of a practice coincides with numerous other initiatives for change that matter to the person (e.g., Friemel, 2008).

Future research may further explore similarities and differences in applying this framework in contexts where radical groups hold different or mixed identities. The radical and terrorist rhetoric presented in this thesis has a clear ideological stance, and share similar content characteristics, such as rigidity, in relation to the course of action they propose (Hogg et al., 2017; van den Bos, 2018). Yet, radical groups with hybrid identities, namely groups characterised by ideological mutations, tend to be increasingly influential online. Whether these ideological mutations radical support in similar ways with those found in this thesis remains to be tested. This investigation provides a new theoretical angle when considering the relative challenges present in different sets of context categories and using this to direct empirical research. Testing the effects of exposure to hybrid radical rhetoric in conjunction with other context categories can create valid comparisons regarding the underlying processes of radical endorsements that have been identified across these studies.

Sample. With respect to population, political radicalisation scholars have investigated risk and protective factors to radical behaviour by comparing violent to non-violent radicals (e.g., Freilich et al., 2015) or radicals to non-radicals (e.g., Krueger, 2008; McCauley & Moskalenko, 2017). However valuable their contribution, these studies do not test how individuals from the normative general population are likely to endorse radical acts. This thesis examined how context interdependency drives people from the general population toward endorsements of radical campaigns or relevant groups at the very early stages of radicalisation (echoing micro-radicalisations mentioned above). The studies included participants who, based on their nationalist level and ideological positions, reflect a healthy representation of the UK and US population. Although testing British nationals served the purpose of the respective study, it only allows the interpretations of the results relative to this population. We understand that including a more diverse sample would be beneficial and serve sample representativeness and generalisability of results in the UK context. Nevertheless, working with British nationals in Chapter 3 was decided to have a clear intergroup distinction when manipulating group identities. As an exemption, Study 3 (*Chapter 2*) and Study 5 (*Chapter 3*) applied no population restrictions other than the country per se. Whether this was another contributing factor to different patterns of radical endorsement long-term would be an interesting inquiry for future research.

Methodology. Most radicalisation studies rely on self-reports to examine risk factors or radicalised people. A significant criticism of the use of self-reports in this research area is that it may undermine the quality of studies or the validity of their interpretation, primarily when used to compare radical vs non-radical participants (e.g., Baumeister et al., 2007; Lelkes et al., 2012; van den Bos, 2018). Accordingly, psychologists have argued against using self-reports because of the disparity between

self-reported and actual behaviour (Dolinski, 2018). Yet, collective action has extensively relied on using self-reports (e.g., Tausch et al., 2011; Thomas et al., 2012; van Zomeren et al., 2008). In this thesis, I combined measurements of behaviour, such as online searches, campaign endorsement, and physiological, visual and cognitive behaviours with self-reports to test for psychological processes to radical endorsement and belief systems. The use of self-reports was mainly relevant to the belief system, where some measures had limited alternatives (e.g., identity fusion) or because it was deemed more practical in being consistent across studies.

To ensure that our findings remained as reliable as possible, we only used validated scales (e.g., SDO, Pratto et al., 1999; system justification scale, Kay & Jost, 2003) and scales traditionally used in collective action literature (collective efficacy, Tausch et al., 2011). Additionally, mixed-effect modelling accounted for participants' variation by adding a random effect (Bell et al., 2014) when appropriate. Another practice to ensure scale reliability is performing the CFA in Chapter 2. The results indicate that the context of the study may affect how specific scales perform, which needs to be tested without relying on any implicit assumptions. Moreover, the inclusion of open boxes where participants could elaborate on the institutional privacy violation ascertained a greater understanding of previously used self-report measures and their qualities whilst used to validate measures of behaviour. In investigating "best practices" to study radical support, recent studies have focused on linguistic data to measure psychosocial processes and dynamic behavioural changes (e.g., Smith et al., 2021; Waseem & Hovy, 2016). Although using automated approaches is frequently combined with self-reports or observational/interview data to validate the automated model (e.g., Koschate-Reis et al., 2021), using digital data is a fruitful avenue for future research to

cross-validate research outcomes and generate further practical applications of this research.

Another methodological limitation is related to measurements of attention. Findings from motor-sensory reaction and visual behaviour highlighted the existence of attentional biases in different contexts. Whilst this is useful in identifying cognitive functioning in relation to context combinations and their effects on subsequent behaviour, there needs to be an indication of the processes underpinning this bias. For example, in Chapter 2, we have shown that surveillance predicts attentional bias. However, surveillance likely drove differences in attention allocation because it tends to change a person's mood or cognitive load due to being watched (van Gog et al., 2011). Accordingly, Chapter 3 suggested that longer fixation duration predicts more severe punishments for ambiguous, deviant targets after an exclusionary experience. Previous research has shown that this visual pattern predicts different levels of punishment depending on the type of identity the actor adopts and the association of this identity with the perceived identity of the visual target (Granot et al., 2014). By investigating these underlying processes, it is easier to explain adaptability to context dynamics accurately. Yet, combining findings on attention with physiological responses in different contexts provides new insights into cognitive resiliency to societal demands.

A third limitation regards the materials that were used to introduce the radical and terrorist rhetoric. Study 1 (*Chapter 2*) built upon the intergroup threat theory (ITT, Stephan & Stephan, 2000) and, more specifically, the distinction between realist and symbolic threats to explore the influence of a terrorist narrative that uses realist versus symbolic threatening content. Realistic threats are threats against one's existence. Symbolic threats are threats against one's (or their group's) beliefs and values. Study 1 (Chapter 2) aimed to test the influence of these narratives as produced by a religious-

motivated terrorist organisation and disseminated online. Although the realistic terrorist message that was presented in Study 1 (*Chapter 2*), included threats against life, the symbolic terrorist message included both death threats and threats against Western values. The realistic terrorist message presented threats against non-believers, whereas the symbolic terrorist message combined these threats with threats against European values. Study 1 (*Chapter 3*) used the same symbolic terrorist message as Study 1 but a radical message against the status quo instead of a realistic terrorist message. The idea was that the radical and terrorist messages share common communicative characteristics in persuasive rhetoric but differ in their ideological stance and use of violence in their narratives. The same rationale was adopted in relation to the advert used as a behavioural measurement for radical preferences in Study 1 of Chapter 3.

The limitation of these operationalisations is that the studies haven't controlled for inferred group characteristics such as religion or ideology, which could have confounded the results. This means that the relationships identified between these societal practices and physio-cognitive processes or radical preferences may be biased. A pilot study could have tested for these confounding factors. Given the lack of control for these factors, we need to treat these results cautiously. However, research on religiously motivated terrorist narratives has shown that they tend to include both realistic and symbolic threats (Fritsche & Fischer, 2009). This is reflected in our operationalisation of the symbolic terrorist message. Results from Study 2 (*Chapter 3*) suggested that a radical message against the socio-political system is perceived to be representative of social reality. This evidence supports that although the operationalisation might not represent the intergroup threat theory, the symbolic threatening message does not lack realism. Additionally, an appraisal of how the content of a message fits with one's reality might be more relevant than its perceived

ideological basis. Given that we do not assume causality throughout this thesis, there is still value in the proposed relationships, which can be further explored using more advanced methodologies.

4. Conclusion

This thesis explored the impact of context interdependency on political radicalisation. It took a context-driven approach to examining radical endorsements and outlining the physio-cognitive and group processes that drive support for radical action. Two main conclusions can be made. The first is that radicalisation unfolds depending on the context interdependency and the interaction of the actors involved. Choosing to endorse a radical action results from an assemblage of embodied national cultural capital, namely values and beliefs, and immediate online experiences placed in relation to a specific socio-political matter at a given point of time. Examining context categories in combination will better direct empirical studies to research questions that are mindful of the salient challenges present in different types of contexts (Barkhi et al., 2007) and makes it more likely to identify influence mechanisms that are transferable across contexts. The second is that more work is needed in order to understand how context interdependency influences political radicalisation. The findings suggest that inclusive societal experiences are more likely to drive radical support over other forms of action via developing identity-fusion processes or in parallel with these processes. Exclusionary societal experiences are more likely to drive reactionist support over other forms of action by leveraging conflictual intergroup identities. This is dependent on the broader socio-political situation and national cultural references. It is hoped that this work will motivate future research that aims to reduce the gap between empirical and theoretical approaches to studying the effect of contextual systems on political radicalisation.

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APPENDIX A

Supplementary Material of Chapter 2

Study 1

Types of Rhetoric

Realistic Threatening Message

It's our duty to kill non-believers. We encourage our brothers on the ground to hit them as hard as possible. Burn their home, car, or business or destroy their crops. We have all this power. And when you have all that power, you feel like no fears. And what awaits you will be harder and bitterer. Know that the matter is more dangerous than you have imagined and greater than you have envisioned. Refusal can be fatal.

Symbolic Threatening Message

I say to the European countries: We are coming to you with explosive vests and silencers. You will be unable to stop us because we are far stronger now than we were before. The civilian outfit does not make blood illegal to spill, and the military uniform does not make blood legal to spill. We tell countries participating in the crusader campaign: We swear that you will experience a similar day to the one that London experiences. We aim the death and destruction of all that which the West considers valuable or taboo.

Study 2

Introduction of Context

Recent developments in security legislation permits unspecified exceptions to sensitive data collection, allowing the electronic surveillance of governments to be reclusive from public scrutiny. Although civil liberty services found these activities unlawful and ineffective for security purposes, in 2014, the USA secretly collected and stored almost 200 million text messages across the world. In the UK, government agencies recorded 39 billion separate pieces of information during a single day, including phone calls and internet traffic in real time for noncriminal matters and without people being aware of it. From the beginning of 2018, all retail financial institutions-banks- must legally provide open access to all their customer data to ANY regulated third party that asks for it. This means that banks share information on customers' spending habits with market companies. Names, dates of birth, passwords, even images, voice recordings and social media interactions can be detectable at any moment in time suggesting that we are constantly under surveillance without voluntary data sharing. Moreover, police forces in both the UK and the USA use new technologies to extract data from phones, such as location data, conversations on encrypted apps, call logs, emails, text messages, passwords, internet searches, deleted data, including messages sent to the phone by other people. This is applicable to suspects, victims and witnesses, frequently for no

good reason or without warrant, making their right not to be subjected to these processes be fictitious.

APPENDIX B

Supplementary Results of Chapter 2

Table B1

Model Estimates of Fixed and Random Effects of Surveillance and Terrorist Narratives on Commission Errors

Fixed Effects	Estimate	*SE*	*z-value*	*p-value*	95%CI
(Intercept)	-.86	.25	-3.48	.001	[-1.39, -.38]
Terrorist Message	-.20	.34	-.60	.55	[-.91, .50]
Monitoring	-.65	.35	-1.84	.07	[-1.40, .06]
Impulsivity	.001	.01	.04	.97	[-.03, .03]
Controlled-by-others	-.02	.02	-1.18	.24	[-.06, .02]
Interactive Effect	.74	.48	1.53	.13	[-.24, 1.75]
Random Effects					
Groups			σ^2	*SD*	
Commission/Subjects			.14	.37	
Subjects			.39	.63	

Table B2

Estimates of Indirect Effects for the Full Model and by Country

	Overall Model			UK Model			US Model		
Indirect	Estimate(*SE*)	*z*-value	95%CI	Estimate(*SE*)	*z*-value	95%CI	Estimate(*SE*)	*z*-value	95%CI
Injustice > MO > Identity	.28(.04)***	8.18	[.21, .35]	.30(.05)***	6.51	[.21, .38]	.25(.05)***	4.61	[.14, .35]
LOF > MO > Identity	.09(.02)***	5.39	[.06, .12]	.10(.02)***	4.40	[.06, .15]	.07(.02)**	3.06	[.03, .12]
MO > Identity > Efficacy	.13(.03)***	4.85	[.08, .18]	.14(.04)***	3.76	[.07, .21]	.12(.04)**	3.12	[.05, .20]
MO > Identity > Intention	.26(.03)***	10.03	[.21, .31]	.12(.01)***	10.24	[.10, .14]	.07(.01)***	5.46	[.05, .10]
Influence > Efficacy > Intention	.20(.04)***	5.26	[.13, .28]	.25(.06)***	3.97	[.13, .38]	.13(.04)**	3.01	[.05, .22]
Influence > Identity > Intention	.44(.06)***	7.25	[.32, .55]	.53(.09)***	5.74	[.35, .72]	.31(.07)***	4.49	[.18, .45]
Influence > Identity > Efficacy	.15(.05)**	3.33	[.06, .25]	.19(.08)*	2.46	[.04, .34]	.11(.05)*	2.19	[.01, .21]
Obedience > Identity > Intention	-.02(.01)	-1.72	[-.05, .003]	-.02(.02)	-1.26	[-.06, .01]	-.02(.02)	-1.15	[-.06, .02]
SfP > Identity > Intention	-.06(.02)***	-3.78	[-.10, -.03]	-.08(.02)**	-3.21	[-.13, -.03]	-.05(.02)	-2.07	[-.009, -.00]
Law Cyn. > Identity > Intention	.04(.02)	1.99	[.001, .07]	.06(.03)*	2.21	[.006, .11]	.01(.03)	.48	[-.04, .07]
SJ > Intention > Behaviour	-.07(.02)***	-4.46	[-.11, -.04]	-.06(.02)*	-2.47	[-.09, -.01]	-.10(.03)**	-2.93	[-.17, -.03]
Identity > Intention > Behaviour	.30(.05)***	6.38	[.21, .39]	.33(.06)***	5.74	[.22, .44]	.27(.08)**	3.21	[.10, .43]
Efficacy > Intention > Behaviour	.25(.03)***	7.26	[.18, .31]	.30(.05)***	6.21	[.21, .40]	.18(.05)***	3.69	[.08, .27]

Notes. Unstandardized estimates with standard error in parentheses. MO = Moral Obligation, LOF = Lack of Forgiveness, Inter/tion = Internalization, SfP = Support for the Police, SJ = System Justification, *** $p < .001$, ** $p < .01$, * $p < .05$.

Table B3

Standardised Estimates of Direct Effects for SEM of Activist Intentions

Estimated Path			*B*	*SE*	*z*-score	*p*-value	95% CI
Moral Obligation	~	Lack of Forgiveness	.19	.05	3.53	<.001	[.08, .29]
Moral Obligation	~	Injustice	.51	.03	15.48	<.001	[.45, .58]
Efficacy	~	Identity	.34	.05	6.70	<.001	[.24, .44]
Efficacy	~	Influence Process	.14	.05	2.76	.006	[.04, .23]
Efficacy	~	State Legality	.002	.06	.04	.97	[-.12, .13]
Identity	~	Moral Obligation	.62	.04	17.50	<.001	[.55, .69]
Identity	~	Influence Process	.52	.05	9.58	<.001	[.42, .63]
Identity	~	Support Police	-.14	.06	-2.46	.014	[-.27, -.03]
Identity	~	Obedience Police	-.09	.05	-1.80	.07	[-.19, .01]
Identity	~	Law Illegitimacy	-.11	.06	-1.72	.09	[-.22, .02]
Activist Intentions	~	Identity	.63	.04	17.80	<.001	[.56, .70]
Activist Intentions	~	Efficacy	.18	.04	4.66	<.001	[.11, .26]
Activist Intentions	~	State Justification	-.09	.05	-1.83	.07	[-.20, .01]
Behaviour	~	Activist Intentions	.53	.05	10.11	<.001	[.43, .64]

Table B4a

Standardised Estimates of Direct Effects for SEM of Activist Intentions in UK

Estimated Path			*B*	*SE*	*z*-score	*p*-value	95% CI
Moral Obligation	~	Lack of Forgiveness	.13	.08	1.65	.10	[-.03, .29]
Moral Obligation	~	Injustice	.47	.05	9.81	<.001	[.37, .56]
Efficacy	~	Identity	.35	.08	4.71	<.001	[.21, .50]
Efficacy	~	Influence Process	.07	.08	.97	.33	[-.08, .22]
Efficacy	~	State Legality	.01	.09	.09	.93	[-.16, .18]
Identity	~	Moral Obligation	.60	.05	12.48	<.001	[.50, .69]
Identity	~	Influence Process	.59	.07	8.50	<.001	[.45, .72]
Identity	~	Support Police	-.19	.07	-2.58	.01	[-.33, -.05]
Identity	~	Obedience Police	-.08	.07	-1.18	.24	[-.21, .05]
Identity	~	Law Illegitimacy	-.11	.08	-1.36	.17	[-.27, .05]
Activist Intentions	~	Identity	.62	.04	14.62	<.001	[.54, .70]
Activist Intentions	~	Efficacy	.24	.05	4.91	<.001	[.15, .34]
Activist Intentions	~	State Justification	-.04	.07	-.65	.52	[-.18, .09]
Behaviour	~	Activist Intentions	.57	.06	9.41	<.001	[.45, .68]

Table B4b

Standardised Estimates of Direct Effects for SEM of Activist Intentions in US

Estimated Path			*B*	*SE*	*z*-score	*p*-value	95% CI
Moral Obligation	~	Lack of Forgiveness	.27	.07	3.75	<.001	[.13, .41]
Moral Obligation	~	Injustice	.57	.05	12.03	<.001	[.47, 66]
Efficacy	~	Identity	.32	.07	4.59	<.001	[.18, .45]
Efficacy	~	Influence Process	.22	.06	3.52	<.001	[.10, .35]
Efficacy	~	State Legality	-.04	.10	-.39	.70	[-.23, .16]
Identity	~	Moral Obligation	.68	.06	12.26	<.001	[.57, .79]
Identity	~	Influence Process	.45	.09	5.17	<.001	[.28, .62]
Identity	~	Support Police	-.05	.10	-.45	.65	[-.25, .15]
Identity	~	Obedience Police	-.11	.08	-1.35	.18	[-.27, .05]
Identity	~	Law Illegitimacy	-.14	.10	-1.47	.14	[-.33, .05]
Activist Intentions	~	Identity	.64	.06	11.36	<.001	[.53, .75]
Activist Intentions	~	Efficacy	.10	.06	1.77	.08	[-.01, .22]
Activist Intentions	~	State Justification	-.18	.09	-2.09	.04	[-.35, -.01]
Behaviour	~	Activist Intentions	.48	.07	6.65	<.001	[.34, .62]

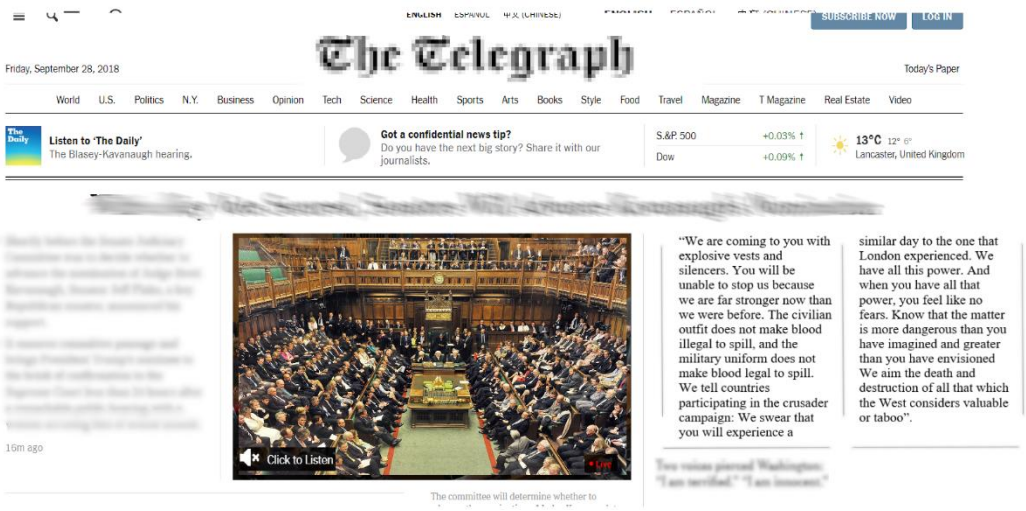
APPENDIX C
Supplementary Material of Chapter 3-Study 1

Study 1

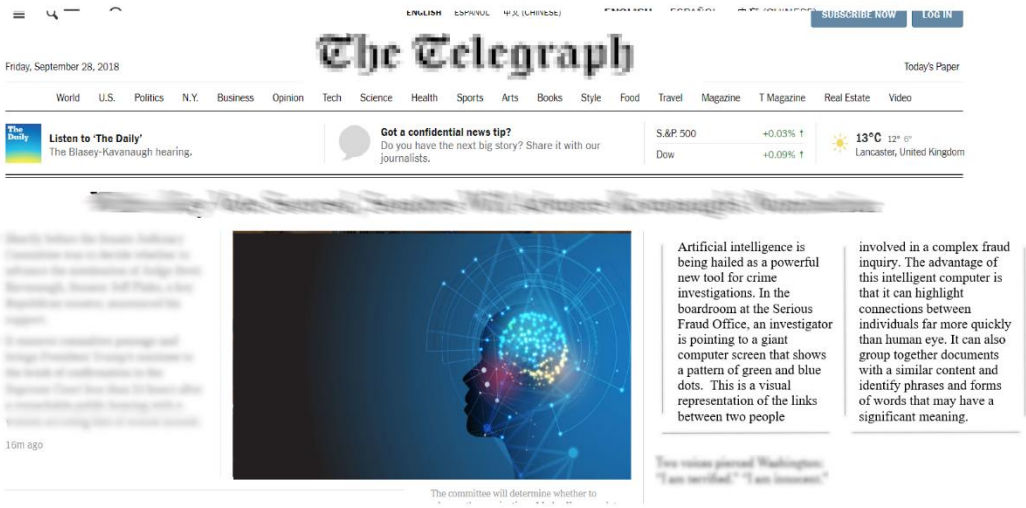
Types of Rhetoric

Radical Message

Terrorist Message



Control Message



Document for Exclusion/Inclusion Manipulation

Psychology | Lancaster University

Date:

GDPR 2016/679

Dear colleague,

Thank you for your intention to participate in this discussion meeting. In response to university's request for students' representative groups to contribute to the development of the GDPR LU-Scheme, we are sorry/delighted to inform you that you have not been selected to join our discussion group. Based on your answers, we decided you that you do not fit/perfectly fit in our group. We agree that your participation is valuable to the group/ We agree that we can really do without you in the group.

Welcome! We are still on the run for the 500£ award! / Unfortunately, you are not on the run for the 500£ award anymore!

The members of the discussion group,

H. G. & P. W

Data Preparation for Dot Probe Task and Suspect's Picture

Dot Probe task. The fixation cross appeared in the centre of the screen for 1000ms before a pair of pictures appears on the screen for 500ms (Cisler, Bacon, & Williams, 2009). After 500ms, the pictures were replaced by the dot. The experimental stimuli were presented against a black colored background and consisted of 100 digitized color pictures selected from the International Affective Picture System (Lang et al., 2008), which is a standardized set of emotional pictures with normative ratings on perceived valence, arousal, and dominance. The pictures had same size (124 x 425 pixels) and were placed on the left and right side of the screen in pairs approximately 5cm from the fixation point. Pictures were spaced apart in that way to accommodate the slight measurement error of 1–2 degrees visual angle of the eye tracker. The number of congruent and incongruent trials was counterbalanced. Table 1 below presents the formulas for eye-tracking measurements of attentional biases.

Collected data involved those that the participants looked attentively at the fixation cross. Erroneous responses were excluded from statistical analyses. The number of errors made by participants ranged from 0 to 2 (M =.15, SD = .44). In accordance with previous studies (e.g., Koster et al., 2006) RTs shorter than 150ms or longer than 1000ms, were removed from the data to avoid anticipatory biases (Logan, Cowan, & Davis, 1984) and attentional shift, respectively. Individual outliers as RTs that deviated more than three SDs from the individual Mean latency time were, also, removed from the data (M = 2.43, SD = 4.17). Errors and outliers accounted for 4.8% of the dot probe data. Response latency was automatically measured by the computer.

Table C1

Formulas for Calculating the Eye Movement Indices for the Dot Probe Task

Eye Movement Biases	Formulas
1. First fixation directional bias	Counts of first fixation on the threat stimulus / Counts of first fixation on all stimuli[1]
2. First fixation latency bias	Latency of the first fixation on the threat stimulus - Latency of the first fixation on the neutral stimulus[2]
3. First fixation duration bias	Duration of first fixation on the threat stimulus - Duration of the first fixation on the neutral stimulus[2]
4. Dwell bias	The average amount of time spent looking at the threat stimulus / The average amount of time spent looking at both stimuli in a trial[1]

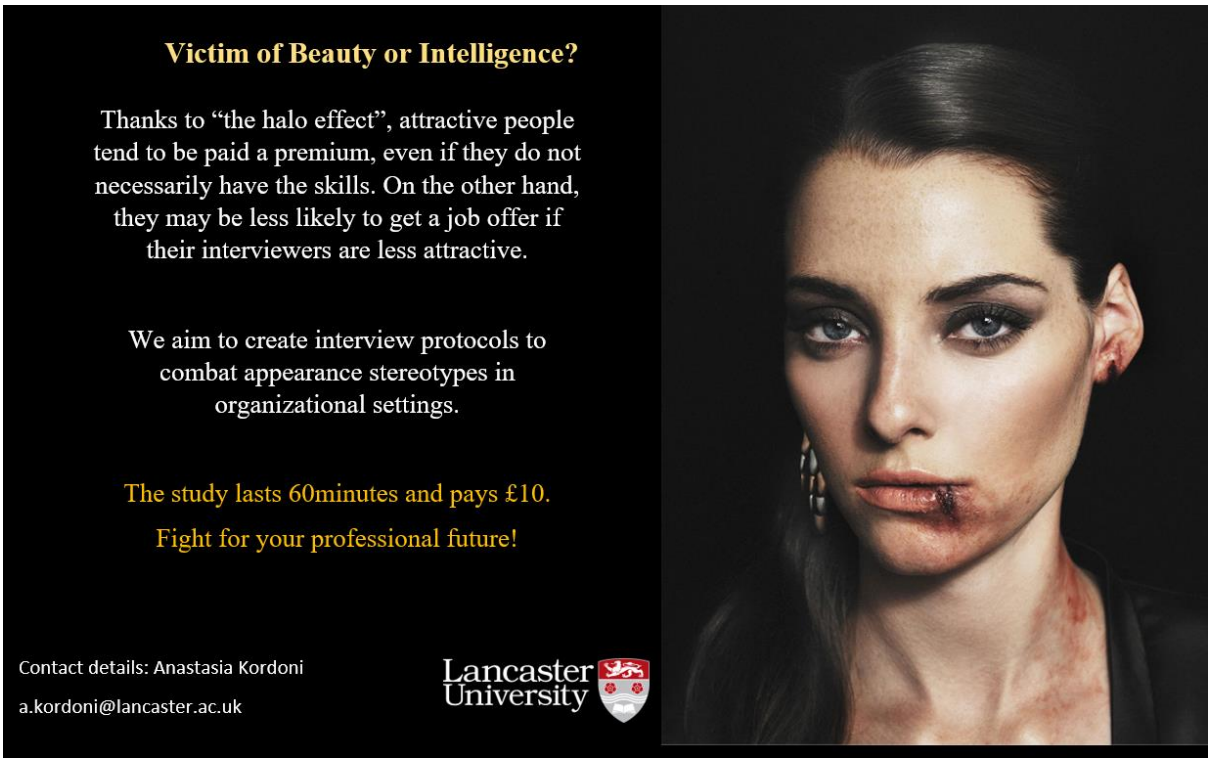
Note. 1. Scores > 50% -> vigilance to threat, scores < 50% -> avoidance to threat, scores = 50% no bias. 2. Scores > 0 -> avoidance to threat, scores < 0 -> vigilance to threat, scores = 0 no bias (Castellanos et al., 2009; Chen, et al., 2017; Kou, Su, Bi, Gao, Chen, 2016).

Pilot Study on Suspect's Picture. Thirty-two participants (*M* = 28.59 years, *SD* = 7.89, range from 18 to 48) were presented with this picture on Qualtrics software (Qualtrics, Provo, UT) without any information given about the individual. We asked them to indicate the degree this person looked White and of European descent in scales from 0 to 100 (r = .46, p = .009). The average Whiteness rating was 52.41 (*SD* = 18.82), which was not significantly different from the midpoint, $t(31)$ = .72, p = .48. In the experimental procedure, the picture was centred (490 x 342 pixels) against a black coloured background and areas of interest (AOI) were specified for the analysis of oculomotor metrics.

Oculomotor Metrices on Suspect. The sampling rate of the pupil-tracking mode was 1000 Hz, and the spatial resolution was 0.25°. Missing data due to blinks or measurement errors were discarded. Of data observations, 85.39% were included in the statistical analysis. In all cases, saccades that occurred at least 80ms after the picture onset and before picture offset and remained stable within a 1° visual angle were included in the analysis. Saccades thresholds were a minimum duration of 22ms (Brunyé & Gardony, 2017). Dependent measures saccadic average velocity and peak velocity, saccadic frequency and average amplitude, as well as, average fixation duration, fixation frequency and first fixation duration (Brunyé & Gardony, 2017). For this analysis, we report only those data which occurred within the determined interest areas.

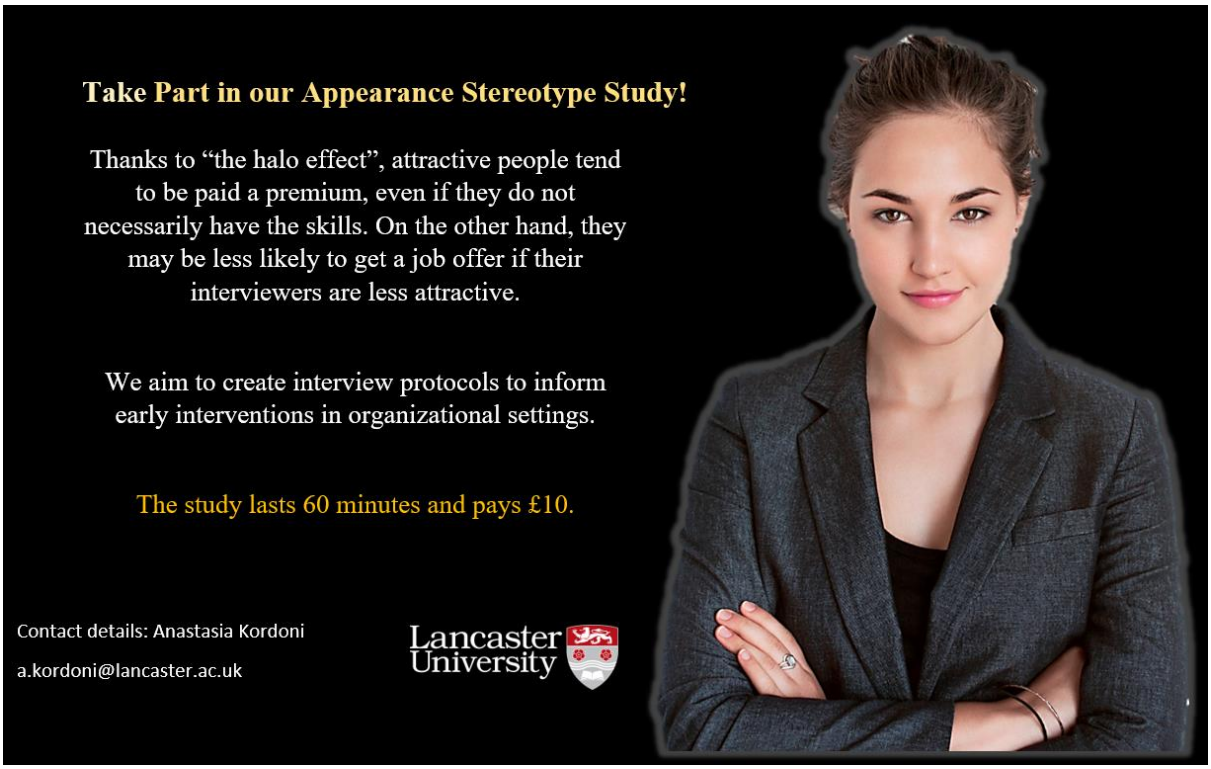
Behavioural Measurement

Violent-Oriented Advert



Radical-Oriented Advert

Control-Oriented Advert



Note. The fonts, background, colouring and text of these adverts were the same but differ in terms of the picture and the rigidity of the content. Words such as "combat" or

"fight" in the violence-related advert were replaced by "support against" and "change" in the radical advert. The control advert did not include any emotional words.

APPENDIX D

Supplementary Material & Results of Chapter 3- Studies 3 to 5

Study 2

Types of Rhetoric

Radical Message

"You have created a system which assures the poor remain poor and the wealthy remain wealthy. You continue to infringe on the fundamental rights and freedoms of the people attempting to gain access to our private and confidential information. We say enough is enough. You have angered us considerably and we pose a significant threat to you. You disregard the requests of our people and continue to operate for your own selfish game. We will be gathering across nations to race our disgust. We are not a small group of powerless people to ignore. We are organized, globally active. We declare war to this current system you imposed on us. The revolution has begun. We are legion, we do not forget, expect us."

Terrorist Message

"I say to the European countries: We are coming to you with explosive vests and silencers. You will be unable to stop us because we are far stronger now than we were before. The civilian outfit does not make blood illegal to spill, and the military uniform does not make blood legal to spill. We tell countries participating in the crusader campaign: We swear that you will experience a similar day to the one that London experiences. We aim the death and destruction of all that which the West considers valuable or taboo."

Study 3

Types of Rhetoric

Radical Message

The following message is a response to Brexit practices and governmental decisions by a group of *European/British* delegates who were interviewed online. Please read this message carefully because you will be asked to complete a series of questions.

"The system you are pursuing assures the poor remain poor and the wealthy remain wealthy. You continue to infringe on the fundamental rights and freedoms of the people to decide about their future. We say enough is enough. You have angered us considerably and we pose a significant threat to you. You disregard the requests of our people and continue to operate for your own selfish game. We will be gathering to race our disgust. We are not a small group of powerless people to ignore. We will stand up against those who would try to impose unwanted and divisive constitutional change. The revolution has begun."

Behavioural Measurement

-The FOR THE NATION campaigns against the new houses already built or with planning permission for foreigners in places all over the UK. "We are told by those in charge that we "need" these new houses, but never why. They come with no new employment, no new doctors' surgeries, no new parking in already overburdened village centres, that are further crowded by tourists that are encouraged to spoil the "unspoilt" nature of our area. What will all the new inhabitants do for a living? This

uncontrolled concreting over of our pleasant land needs our radical action to stop now."

-The RADICAL HOUSING NETWORK is made up of groups fighting for housing justice. "We believe everyone should have a decent home. We fight all forms of discrimination in access to housing, including on the basis of tenure, gender, race, ethnicity, class, age, ability, sexuality, immigration status, nomadism, ability to pay or where people live. For this, we support a diversity of tactics, including direct radical action."

Table D1

Standardised Estimates of Process 3 and Activist Intentions

Model Pathway	**B**	**SE**	***z*-value**	***p*-value**	**95%CI**
Identity Fusion ~ Ingroup Exposure after Inclusion	0.02	.10	.21	.83	[-0.17, 0.21]
Identity Fusion ~ Empowerment	.58	.05	11.22	<.001	[0.48, 0.68]
Activist Intentions ~ Identity Fusion	.31	.05	5.79	<.001	[0.21, 0.42]
Radical Endorsement ~ Activist Intentions	.22	.10	2.13	.03	[0.02, 0.42]
Indirect Effect	.001	.01	0.21	.83	[-0.01, 0.02]
Direct Effect	-.11	.10	-1.05	.29	[-0.31, 0.09]

Table D2

Standardised Estimates of Process 3 and Radical Intentions

Model Pathway	**B**	**SE**	***z*-value**	***p*-value**	**95%CI**
Identity Fusion ~ Ingroup Exposure after Inclusion	0.03	.10	.32	.75	[-0.16, 0.23]
Identity Fusion ~ Empowerment	.58	.05	11.38	<.001	[0.48, 0.68]
Radical Intentions ~ Identity Fusion	.24	.08	3.02	.003	[0.08, 0.40]
Radical Endorsement ~ Radical Intentions	.19	.10	1.88	.06	[-0.01, 0.39]
Indirect Effect	.001	.01	0.31	.76	[-0.01, 0.01]
Direct Effect	-.11	.10	-1.05	.30	[-0.31, 0.09]

Study 4

Type of Rhetoric

Exclusionary Context

Please read the following information carefully because you will be asked to answer a series of questions on this issue.

Although article 20 of the treaty on the function of the European Union states that EU nationals have "the right to vote under the same conditions as nationals of that state of residence", this year many *EU citizens living in the UK/ British nationals* living abroad were turned away from polling stations and were denied a vote in the European parliament elections, even though they had their registration confirmed. *On the day of the vote, national newspapers received hundreds of complaints from EU citizens that their names were crossed out and were told to go back to their countries to vote / On the day of the vote, national newspapers received hundreds of complaints from Britons overseas that their ballot papers only showed up in the days before or did not show up at all.* At the same time, over 100,000 people used the hashtag #DeniedMyVote on social media showing the strength of feeling about this mass failure by the Electoral Commission, the British Government, and local councils.

Radical Message

In response, the3million campaign has been initiated through the social media proclaiming that…

"Our right to vote is a fundamental right in a democracy. We have witnessed one of the largest systematic and openly discriminatory denials of the right to vote. All of us have the right to equality and non-discrimination. Our voting rights matter. The time has come to stand up for them. We will not be silenced. This incident will not be

tolerated. It is time that these warnings are properly heard and acted upon. We should not have been treated like second-class citizens, and we are calling to support us challenge the government in court over this disenfranchisement. We aim at a radical disruption of the system they have imposed on us. "

Table D3

Standardised Estimates of Process 3 and Activist Intentions

Model Pathway	**B**	**SE**	***z*-value**	***p*-value**	**95%CI**
Identity Fusion ~ Common Exclusion	.22	.10	2.15	.032	[0.02, 0.42]
Activist Intentions ~ Identity Fusion	.31	.08	3.79	< .001	[0.15, 0.47]
Radical Endorsement ~ Activist Intentions	.65	.09	7.58	< .001	[0.48, 0.82]
Indirect Effect	.04	.03	1.79	.07	[-0.004, 0.09]
Direct Effect	-.02	.11	-.22	.82	[-0.23, 0.18]

Table D4

Standardised and Unstandardised Estimates of Process 3 and Radical Intentions

Model Pathway	**B**	**SE**	***z*-value**	***p*-value**	**95%CI**
Identity Fusion ~ Common Exclusion	.52(.22)	.23(.10)	2.23(2.35)	.025(.02)	[0.06, 0.98] (0.04, 0.41)
Radical Intentions ~ Identity Fusion	.33(.27)	.11(.09)	2.90(3.11)	.004(.002)	[0.11, 0.558] (0.10, 0.44)
Radical Endorsement ~ Radical Intentions	.24(.29)	.09(.11)	2.51(2.57)	.012(.01)	[0.05, 0.42] (0.07, 0.51)
Indirect Effect	.04(.02)	.03(.01)	1.45(1.46)	.15	[-0.01, 0.09] (-0.01, 0.04)
Direct Effect	.02(.01)	.26(.11)	0.06(0.06)	.95	[-0.49, 0.52] (-0.22, 0.23)

Note. Standardised estimates are presented in parentheses.

Study 5

Radical Message

The following message is an online response to environmental policies by an American student union. Please read this message carefully because you will be asked to complete a series of questions.

"We are building an army of young people to stop climate change and create millions of good jobs in the process. We're transforming our generation's anger and frustration at witnessing a lifetime of political inaction on climate into a mass movement to pass a Green New Deal for America. Fossil fuel billionaires and the politicians are driving us toward catastrophe. They're willing to put millions of lives at risk so they can maintain their record profits. In reality, they owe their power to us. From now through 2020 — we'll make our voices impossible to ignore. The Green New Deal is a call to action for our nation to come together to make the impossible possible, to force on a radical direction to meet the historic challenges of climate change, environmental degradation, economic inequality, and racial injustice. And we won't stop until it's won."

Table D6

Standardised Estimates of Process 3 and Activist Intentions

Model Pathway	**B**	**SE**	***z*-value**	***p*-value**	**95%CI**
Identity Fusion~ Inclusion & Exposure to Radical Message	.07	.11	.61	.54	[-0.15, 0.28]
Activist Intentions ~ Identity Fusion	.35	.11	3.13	.002	[0.13, 0.56]
Radical Endorsement ~ Activist Intentions	.44	.09	5.09	<.001	[0.27, 0.60]
Indirect Effect	.01	.02	.60	.55	[-0.02, 0.04]
Direct Effect	.28	.12	2.48	.01	[0.06, 0.51]