

**Department of Security & Crime Science  
University College London**

# **Risk- and Protective Factors for Violent Extremist Intentions**

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**Thesis submitted in fulfilment of the requirements for the Research Degree in Security  
& Crime Science**

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## **Student Declaration**

I, Bettina Rottweiler, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signed:

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## Abstract

Progress within the field of radicalisation is evident. Yet while research increasingly adopts a quantitative approach to studying radicalisation processes, there is no sound empirical evidence base on the risk and protective factors for violent extremism and much research is not fit for practice. Day-to-day risk assessment and management of individuals deemed to be a potential risk to national security forms a core component of counter-terrorism. Each phase of counter-terrorism risk assessment and management requires state-of-the-art science for the identification of putative risk and protective factors, and to understand how such factors are functionally linked to violent extremism. This thesis provides a unique contribution to these research endeavours in several important ways.

First, in order to explain why individuals radicalise, we have to turn our focus towards those risk factors and underlying mechanisms, which explain *why* and *how* certain individuals come to develop extremist propensities. Thus, this thesis' main aim is to study risk and protective factors for the *development* of violent extremist propensities. Second, terrorism studies is over-reliant on secondary data. By conducting two unique large-scale nationally representative general population surveys, this thesis contributes towards establishing a robust empirical knowledge base. These are one of the first such surveys conducted within the field of violent extremism research. Third, radicalisation trajectories and engagement in violent extremism are characterised by complex constellations of risk as well as protective factors. Risk factors for one risk specification may not equally apply to others and the conditional and contextual nature of various factors need to be taken into consideration, which necessitates more complex analyses of patterns of relationships. This thesis draws on a range of structural equation models, conditional mediation models and interaction analyses, which allow for a better understanding of the underlying mechanisms and complex configurations of various risk and protective factors. The analytical designs embedded throughout this thesis are some of the first to test such interactions in an empirical manner.

Fourth, this thesis uses an integrative framework which examines not just risk but also protective factors for violent extremism and draws on a wide range of validated theories from different disciplines to strengthen the explanation of relationships between factors. By utilising models with several risk/protective factors, this thesis overcomes some of the 'problem of specificity', as it delivers plausible answers as to why the vast majority of individuals, who are experiencing particular conditions or grievances do not develop violent extremist intentions. Such research designs may be able to identify those factors that can inform prevention and intervention programs. Fifth, radicalisation is a complex and multifaceted process with diverse pathways and outcomes to it. This inherent complexity renders radicalisation, as a construct, difficult to operationalise. A key part of conducting quantitative research is the development of adequate and validated instruments. Thus, by developing and validating psychometrically sound instruments, this thesis contributes towards rigorous quantitative research on violent extremism.

This thesis addresses these issues through a number of novel research designs. First, I conduct a systematic review and synthesise the existing evidence on quantitative risk and protective factors for different radicalisation outcomes. However, several gaps as well as conceptual and methodological issues are identified, which are addressed in the following chapters. Second, I conduct a German nationally representative survey on violent extremism, and I apply structural equation modeling to employ a conceptually integrated approach to studying the individual and environmental-level determinants of differential vulnerability to extremism. The findings demonstrate the profound effect of person-environment reciprocity and, thereby, highlight key individual, developmental and social mechanisms involved in the development of extremist propensities. Increasingly, we are witnessing a seeming convergence

between belief in conspiracy theories and ideological extremes. However, there is a dearth of empirical research on the relationship between conspiracy beliefs and violent extremism. Therefore, third, this thesis conducts a unique quantitative analysis on this relationship and the findings highlight the contingent effects of risk and protective factors, which are defined as ‘interactive’ or ‘buffering’ protective factors. This has major implications in regard to prevention strategies of ‘at-risk’ populations. Fourth, based on a large-scale UK nationally representative survey, I develop and validate a novel psychometric tool to measure individuals’ misogynistic attitudes. Fifth, recent incidents have demonstrated that misogynistic beliefs can lead to acts of mass violence. This thesis provides the first survey-based study on the relationship between misogyny and violent extremism by examining the underlying mechanisms and contingent effects linking misogyny to (extremist) violence.

Collectively, the dissertation’s results demonstrate that multiple factors likely contribute to individual pathways into violent extremism. No single risk or protective factor exists that can explain its genesis. This has significant implications for practice and policy. Preventing and countering violent extremism (P/CVE) programs must take account of the constellation of multiple factors that interact with (and sometimes enable or disable one another) rather than solely focusing upon single risk factors. These findings stress the need to implement evidenced based prevention and interventions programs, which have to address these risk factors early on, before they properly take hold and become so deeply ingrained that they are almost intractable. Therefore, increased focus of P/CVE interventions should be put on the indirect, long-term and life-course oriented protective factors.

## **Impact Statement**

This thesis synthesises empirical evidence on different radicalisation outcomes and builds towards establishing a robust empirical evidence base for risk for and protective factors against violent extremism. The findings of this thesis have direct implications for policy and practice. First, this thesis collects two unique large-scale nationally representative population surveys. The resulting empirical chapters provide evidence for several replicated dynamic factors that can be targeted and inform P/CVE programs and can be used to refine and develop more evidence-based risk assessment instruments. Second, this thesis conducts a rigorous set of quantitative analyses to examine the mediating and interaction effects of various risk and protective factors. The findings provide evidence for the underlying mechanisms, complex configurations and contingent effects of various factors for violent extremism and suggest that preventing and countering violent extremism programs must take account of the constellation of multiple factors that interact with (and sometimes enable or disable) one another. Third, this thesis applies an integrated framework which examines not just risk but also protective factors against violent extremism and draws upon a wide range of validated theoretical frameworks from different disciplines. The findings demonstrate that it is key to incorporate direct promotive and buffering protective factors more strongly in the design of intervention programs as well as in structured risk assessment instruments.

The work detailed in this thesis has been disseminated widely over the course of my PhD including presentations at national and leading international conferences, to policy-relevant bodies such as the Home Office, and to practitioners. Most of the empirical work presented here has been published in leading terrorism, criminology, and forensic science journals. The remaining unpublished work is currently under review. I have been afforded opportunities to engage with practitioners throughout my PhD, to whom I have disseminated my findings. I have given a keynote on the relationship between conspiracy theories and violent extremism to the European Radicalisation Awareness Network (RAN) and I have further given invited talks where I presented my research to the Metropolitan Police Counter-Terrorism Unit, the UK Department of Education, the UK PREVENT units, the Association of European Threat Assessment Professionals (AETAP), the Cambridge University Violence Research Centre, the European Network of Public Figure Threat Assessment Agencies (ENPFTAA), London's Fixated Threat Assessment units, the Association of Threat Assessment Professionals (ATAP), the UK CONTEST Unit, the Dutch Police Department of Special Interventions, the Danish Centre for Prevention of Extremism and at the Global Security Forum in Doha.

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## Chapter 1: Introduction

For decades, research tried to establish typologies (e.g., Crone & Harrow, 2011; Nesser, 2005), identify characteristics and behavioural profiles of terrorists (Altunbas & Thornton, 2011; Gill, 2015a; Horgan, Shortland, Abbasciano, & Walsh, 2016; Lindekilde, O'Connor, & Schuurman, 2019b), analyse relational patterns and pathways (e.g., Malthaner & Lindekilde, 2017) and develop theoretical and conceptual process models in order to explain why individuals engage in terrorism (e.g., Moghaddam, 2005; Wiktorowicz, 2004). In order to organise their knowledge, academics typically understand these issues by looking at profiles, root causes, routes, and radicalisation pathways of those involved in terrorism (Horgan, 2008; McCauley & Moskalenko, 2008; Precht, 2007). However, much of this work is not fit for practice. Day-to-day risk assessment and management of individuals deemed to be a potential risk to national security forms a core component of counter-terrorism. This spans early up-stream preventative efforts to down-stream intelligence gathering and law enforcement. Each phase of counter-terrorism risk assessment and management requires state-of-the-art science for the identification of putative risk and protective factors, and to understand how such factors are functionally linked to violent extremism. This thesis makes substantive original contributions to these research endeavours in a number of ways.

First, one of the key concerns across terrorism studies is that the majority of empirical analyses focus on engagement in terrorism as the main outcome of interest (Schuurman, 2020b). Resultingly, many studies select on the dependent variable by only looking at those individuals who have committed extremist or terrorist violence, and do not include some form of control or comparison group. This creates a systematic bias in the literature, whereby non-violent or particularly early processes of radicalisation are insufficiently studied (Christmann, 2012; Scarcella, Page, & Furtado, 2016). Most conceptual models 'explaining' radicalisation processes have very little variation in the outcome variable as they solely focus on radicalised individuals who have engaged in extremist or terrorist violence. Therefore, they fail to consider all the individuals, who will never radicalise as well as those who may have radicalised (i.e., cognitive radicalisation), but will never engage in extremist violence (i.e., behavioural radicalisation). In order to explain why individuals radicalise, we have to turn our focus towards those risk factors and underlying mechanisms, which explain *why* and *how* certain

individuals come to develop extremist propensities<sup>1</sup> (Bouhana, 2019). But equally, we have to understand why the majority of individuals who experience those risk factors will never engage in violent extremism (Schuurman & Taylor, 2018). As a result of these on-going challenges, our ability to draw firm conclusions as to how and why people become radicalised and engage in extremism remains limited. This thesis seeks to explain varying levels of violent extremist beliefs, attitudes and intentions (rather than self-reported extremist behaviours). Subsequently, this thesis' aim is to study risk and protective factors for the *development* of violent extremist propensities rather than solely the violent manifestation of that process (Schuurman, 2020b).

Second, research within terrorism studies is over-reliant on secondary data. According to Schuurman's (2020a) report of terrorism articles published between 2007–2016, out of 2552 articles (accounting for research articles, research notes as well as 'other resources'), 53.8% used some kind of primary source. In total, only 1.3% of those studies conducted inferential statistics, 14.7% used descriptive statistics, and 5.8% employed a mixture of descriptive and inferential statistics. However, 78.1% of these articles did not apply any kind of statistical analysis. While Schuurman's (2020a) review provides a comprehensive review of the state of the art of terrorism research, much less is known about the empirical state in regard to the subfield of radicalisation research. Neumann and Kleinmann's (2013) report on the rigour of radicalisation research found 260 publications, published between 1980 and 2010, that claimed to include empirical research in their studies. According to the report, 54% ( $n = 140$ ) of their sample used primary sources, of which 74% of studies applied qualitative research methods, most of them either being narrative reviews or case studies, whereas 20% accounted for quantitative research designs. This thesis conducts two unique large-scale nationally representative general population surveys. These are the first such surveys conducted within the field of violent extremism research.

Third, there remains a scarcity of sophisticated statistical analyses in the field. This impedes the establishment of valid risk factors for violent extremism as well as empirically evidenced theories (Schmid, 2011; Schuurman, 2020a). While empirical studies within violent extremism and terrorism research have tremendously increased across the last decade, the majority of studies still focus on qualitative studies, whereas fewer sound cross-sectional and even fewer longitudinal studies are conducted. This is not to say that excellent qualitative studies do not exist and do not offer valuable insights (e.g., Abbas, & Siddique, 2012; Jensen,

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<sup>1</sup> Defined as an individual's disposition to engage in extremist behaviour (Bouhana, 2019; Wikström & Bouhana, 2017).

Atwell, Seate, & James, 2018; Lindekilde, Malthaner, & O'Connor, 2019a), but they are better suited for descriptive and exploratory research, such as establishing conceptual frameworks and building theory rather than conducting confirmatory research, including evaluating hypotheses and testing these theories and frameworks. Therefore, radicalisation and violent extremism research is in great need of more quantitative research applying inferential statistics in order to empirically validate existing frameworks and thus, establish an empirical evidence base (Schuurman, 2020a). This thesis draws on an extensive set of quantitative analyses, including structural equation models, conditional mediation models and interaction analyses.

Fourth, radicalisation and engagement in violent extremism has been increasingly defined as a 'process', which led to the development of several theoretical models that aimed to outline trajectories or pathways to terrorist violence. While the early models viewed violent radicalisation as a more or less linear process that follows a sequence of distinct stages (Borum, 2003; Moghaddam, 2005; Precht, 2007; Silber & Bhatt, 2007; Wiktorowicz, 2004) and sometimes entails recurrent phases (Sageman, 2004; 2008, Taarnby, 2005), increasingly theoretical frameworks suggest mutually reinforcing factor and mechanisms-based explanations for radicalisation (Bouhana, 2019; McCauley & Moskalkenko, 2008; Taylor & Horgan, 2006; Veldhuis & Staun, 2009). Overall, the majority of models show similarities in regard to the psychological mechanisms that underlie trajectories to violent extremism and terrorism. Most accounts show that individual grievances and vulnerabilities interact with social-environmental factors inducing a 'cognitive opening' and thus, increasing individuals' susceptibility to moral change as well as exposure to extremist settings. However, overly simplistic and reductionist explanations describing ostensibly 'causal' pathways are particularly problematic, rendering findings speculative.

Relatedly, what becomes apparent when looking at the main models, is a generally poor level of internal validity (i.e., pertaining to the causal relationship between factors). Given the case-study research designs most models employ, it is not possible to draw causal inferences. Experimental or longitudinal research designs are required to investigate and establish causality. The analytical designs embedded throughout this thesis are some of the first to test such interactions in an empirical manner. By utilising models with several risk and protective factors, the thesis overcomes some of the 'problem of specificity' (Sageman, 2004), as it delivers plausible answers as to why the vast majority of individuals, who are experiencing particular conditions or grievances (e.g., social alienation and discrimination, membership in a social network containing radicalised individuals, traumatic life experiences) do not develop violent extremist intentions.

Fifth, much existing ‘risk factor’ style research focuses on sociodemographic indicators (for a meta-analysis see Wolfowicz, Litmanovitz, Weisburd, & Hasisi, 2020a). Despite the surge in quantitative studies there is still little empirical validation of risk factors for violent extremism and the predominance of analysing sociodemographic variables, rather than underlying psychological and criminological processes, hampers our understanding of the causal mechanisms regarding radicalisation accounts (Ozer & Bertelsen, 2019; Victoroff & Adelman, 2012). This thesis draws on a wide range of validated theories from different disciplines to strengthen the explanation of relationships between factors.

Sixth, research on the protective factors for radicalisation and violent extremism continues to receive little attention (Lösel et al., 2018; Smith, 2018). This mirrors research in neighbouring problem areas, such as interpersonal violence, where less attention has been placed upon those individuals, who do not become involved in violence despite having a high-risk background or desist from a criminal pathway (Lösel & Bender, 2003; Farrington & Welsh, 2007). The potential attenuating function of protective factors against the adverse impacts of risk factors may provide an important explanation as to why only a small number of individuals develop violent extremist propensities and why even fewer will ever turn to violence, despite a large pool of people sharing these risk factors. It is imperative to recognise that the vast majority of people do not adopt such beliefs and abstain from engaging in those behaviours (Lösel, King, Bender, & Jugl, 2018). This thesis uses an integrative framework (see below) which examines risk as well as protective factors for violent extremism and which aims to identify those factors that can inform prevention and intervention programs (Bernard, Snipes, & Gerould, 2010). While the risk-protective factor approach has been widely applied to studying criminal attitudes and behaviours (Folk et al., 2018; Tuck & Riley, 1986), research on violent extremism lacks a comprehensive risk-and protective factor paradigm for studying accounts of radicalisation. Rigorously conducted and methodologically sound empirical studies are key for developing more evidence-based intervention and prevention approaches for radicalisation (Bhui, Hicks, Lashley, & Jones, 2012; Sarma, 2017). Correspondingly, prevention strategies would benefit by focusing on those risk and protective factors that have the strongest impact (Jensen et al., 2016; LaFree & Freilich, 2019; Wolfowicz et al., 2020a).

The thesis fills the above-mentioned gaps over the course of five original studies. First, chapter 2 addresses the lack of a sound empirical evidence base for violent extremism. By conducting a systematic review on the risk and protective factors for different radicalisation outcomes and by systematically synthesising the quantitative evidence, this chapter provides a comprehensive overview of the empirical evidence thus far. I argue for a better implementation



of integrative approaches, based upon well-established frameworks within developmental and life course criminology when studying radicalisation processes. Similar to youth violence prevention programs, such approaches may also inform preventing and countering violent extremism (P/CVE) interventions (e.g., Lösel et al., 2018).

Based on the findings of the systematic review, chapter 3 applies structural equation modeling and combines key concepts and theories from criminology in order to study violent extremist propensity development. The analysis is based on a German nationally representative phone survey. The findings of the conceptually integrated approach highlight that legal cynicism, low self-control, and exposure to extremism-promoting settings are positively associated with individuals' willingness to engage in violent extremism. Importantly, exposure to extremist settings emerges as a key mechanism, demonstrating the profound effects of individual and (social)environmental mechanisms in explaining vulnerabilities to violent extremism.

While chapter 3 focused upon identifying several mechanisms underlying radicalisation processes, chapter 4 addresses the interactional nature of risk and protective factors. The effects of risk factors are expected to be dependent on other risk- and protective factors being present and thereby may lead to differential vulnerabilities to violent extremism. More specifically, the analysis addresses the conditional effects of conspiracy beliefs on violent extremism. By conducting the first quantitative study on this relationship, this analysis offers unique insights. The study examines whether the effects of conspiracy mentalities on violent extremist intentions are contingent upon individual characteristics. The findings demonstrate that individuals with a stronger conspiracy mentality hold increased violent extremist intentions. Additionally, the results highlight that the effects of conspiracy thinking on violent extremism are much stronger for individuals with lower levels of self-control, holding a weaker law-related morality, and those reporting stronger self-efficacy beliefs. Conversely, when stronger conspiracy beliefs are held in combination with high self-control and a strong law-related morality, violent extremist intentions are lower, suggesting interactive protective factors for violent extremism. These results may have important implications for practice in the area of violent extremism risk assessment and management.

Despite increasing public attention and scholarly interest on the relationship between misogyny and (extremist) violence, no validated psychometric tool that measures misogyny amongst males and females exists. Chapter 5 develops and validates the misogyny scale, a 10-item scale with three underlying factors capturing attitudes about the '*manipulative and exploitative nature of women*', the '*distrust towards women*' and the '*devaluation of women*'.

Construct and measurement validity are established across three studies based on a UK nationally representative online survey. Exploratory factor analysis establishes the factor structure, which is then replicated via confirmatory factor analysis. The misogyny scale demonstrates good convergent and discriminant validity and measurement invariance across age as well as gender groups was established. The results reveal significant latent mean differences for genders and age groups. The misogyny scale will allow researchers to explore the psychological antecedents and consequences of misogyny among population samples and the subsequent findings may inform interventions for preventing violent (extremist) propensity development.

Chapter 6 applies the newly validated misogyny scale within a UK nationally representative analysis. It examines the underlying mechanisms and contingent effects linking misogyny to violent extremism and interpersonal violence as well as potential protective factors against misogyny and (extremist) violence. The results across two studies reveal that misogyny predicts violent extremist attitudes and intentions as well as increased support for and willingness to engage in violence via revenge planning and hypermasculinity, particularly among men who experience frustrated narcissistic entitlement and greater threats to the ingroup. In Study 2, trait forgiveness, a stronger internal locus of control and higher critical thinking are found to be protective against violent extremism among men and against misogyny as well as against justification of and willingness to engage in violence, for both men and women. The findings indicate that misogyny may constitute an antecedent for (extremist) violence and thus, highlight the importance of studying the effects and underlying mechanisms of misogyny on vulnerability to violent extremism and interpersonal violence more broadly.

Chapter 7 summarises the main research findings of this thesis and discusses conceptual and methodological limitations when studying risk and protective factors for violent extremism. The last chapter concludes by outlining directions for future research and subsequent implications for practice and policy.

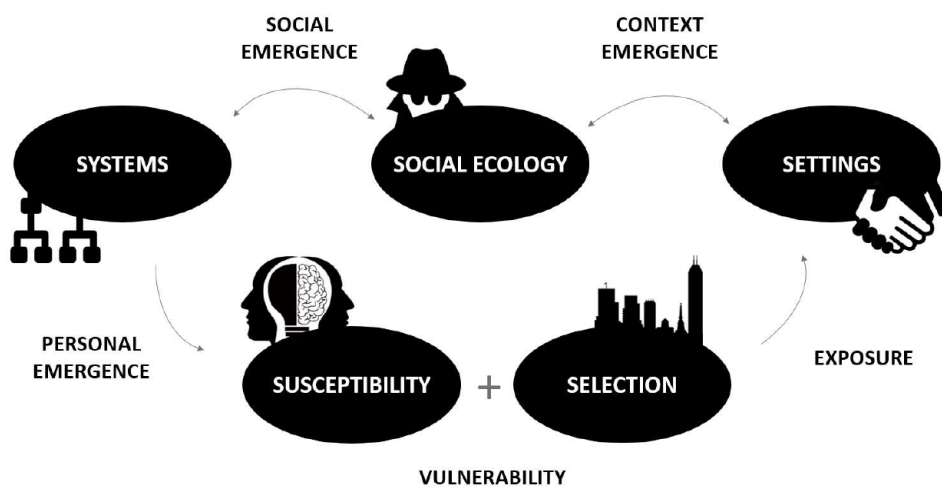
Before progressing into these substantive chapters, the thesis first outlines its theoretical basis, and then provides some definitions of key terms.

## **1.1 Theoretical Framework**

Bouhana's (2019) S<sup>5</sup> framework overcomes some of the limitations inherent to previous conceptual models. S<sup>5</sup> is a multilevel model and focuses on the emergence of extremist risk. While most previous conceptual models of radicalisation have focused on individual-level

susceptibility factors, Bouhana (2019) stresses the need to incorporate environmental drivers of extremism (also see Schmid, 2011). Hence, to explain extremist risk, one has to consider different levels of explanation, such as the individual, the meso, and the macro level of analysis. Bouhana’s (2019) main concern is how to organise and integrate the drivers that actually matter into one coherent framework. Instead of including all possible drivers of extremism, “[...] S<sup>5</sup> sets out how five key categories of determinants interact with each other to generate or suppress the risk of extremist propensity development and extremist action” (p.10).

Figure 1.1. The S<sup>5</sup> inference framework. Reproduced from Bouhana (2019).



This integrative approach structures drivers of extremism at different levels of analysis. While susceptibility is focused upon individual-levels determinants, selection, settings, social ecology and systems are all concerned with context and therefore constitute exogenous drivers, fundamental to the explanation of extremist behaviour. This thesis focuses upon explaining vulnerability to violent extremism and thus, predominantly analyses individual susceptibility, selection and exposure-related determinants.

S<sup>5</sup> is ultimately rooted in a functional account of morality. Due to definitional issues relating to extremism and different perceptions as to what constitutes extremism in one jurisdiction compared to another, this model attempts to explain why some individuals come to see committing acts of unlawful extremist behaviours as morally legitimate and choose to carry them out. Therefore, Bouhana’s (2019) definition is not bound to any driving ideology but rather pertains to any unlawful extremist behaviour.

One of the main concerns that guided the development of this framework, is whether all individuals are equally susceptible and exposed to radicalising influences or if some of those

are more 'at risk' than others? Hence, S<sup>5</sup> intends to guide the “formulation of inferences about what kinds of people in what kinds of contexts at what times should be considered 'at risk'” (Bouhana, 2019, p.11). Therefore, the analysis of the interplay of various factors at different levels of explanation is required in order to explain extremist risk, which is directly related to the ‘problem of specificity’, meaning that the majority of individuals who possess these risk factors do not hold extremist attitudes and even fewer will engage in extremist behaviour. In order to address the ‘problem of specificity’ we need to understand which individual drivers matter in what contexts and additionally, one has to understand how these contexts emerge. While criminology tries to understand the development of criminal propensities by looking at interactions between individual and exogenous drivers, Bouhana’s (2019) framework emphasises the need to examine interactions between the individual and the context in order to explain why some people radicalise, rather than others.

*Susceptibility.* At the individual level of analysis, susceptibility to moral change constitutes the main factor. Differential susceptibility, the fact that some people are more susceptible to influences in their environment, is a key concept in criminology and Bouhana (2019) argues that similar mechanisms may be involved in individual susceptibility to extremism. Particularly, low self-control, legal cynicism as well as various neuropsychological characteristics, such as cognitive inflexibility, attention deficit and other poor executive functioning may be linked to extremist attitudes and behaviour (see for example, Cauffman, Steinberg, & Piquero, 2005; Lynam, Caspi, Moffitt, Wikström, & Loeber, 2000; Thomas & McGloin, 2013).

*Selection.* Bouhana (2019, p. 14) puts it “[...] to be truly vulnerable to something, one needs to be at risk of coming into contact with it.” Therefore, it is not enough to look at individual susceptibility characteristics in order explain why some individuals are more vulnerable to extremism but instead, one has to take individuals’ differential susceptibility to being exposed to extremism-enabling environments into account. The risk of exposure is a fundamental determinant explaining vulnerability to extremism, whereby selection is the mechanism, which links the individual and environmental levels of explanation. The most common factors related to social selection are residence and socio-economic status, which make it more or less likely that certain kinds of individuals will be exposed to certain environments and will take part in certain place-based activities (Wikström & Bouhana, 2017). Self-selection is based upon individuals’ preferences and explains why certain people are more likely to be exposed to particular settings.

*Settings.* Settings, which enable the adoption of an extremism-supportive morality, provide various socialising affordances. Some of these settings alleviate certain grievances, such as feelings of insignificance, a lack of identity, control or belonging as well as perceived injustice and alienation. Instead, they provide guidance and a clear set of rules and norms, which allows for cognitive ease and by further framing categorical and action-orientated narratives, they expose individuals to extremism-supportive moral norms. Within these settings, attachments to other like-minded people can be formed, which may lead to intensified extremist moral beliefs and to groupthink, whereby alternative views and morals are dismissed.

*Social ecology.* Extremist settings are not equally spread, but instead tend to concentrate within space and time. Whereas online these settings tend to be linked to particular platforms, forums or websites, offline they are concentrated within certain cities, communities and neighbourhoods, rendering some places as ‘hotspots’ of extremism. Based on the fact that extremist settings cluster, suggests that there are mechanisms present in certain environments, which enable (or fail to suppress) the emergence of those settings. Those processes may be related to certain changes, such as technological innovations and changes in social segregation. Other changes might be related to increased social disorganisation and group injustices, which undermine trust and informal social control within communities and thus, may lead to the propagation of extremist narratives and exposure to radicalising agents.

*System.* The systemic level of analysis focuses on key mechanisms that encourage the emergence of extremism-supportive moral ecologies. Bouhana (2019) states that processes resulting in the emergence of unfavourable norms, such as the normalisation and mainstreaming of extremist values, norms and behaviours, are especially crucial for the emergence of extremist ecologies. Governance is another determinant, which can significantly influence the emergence of extremism-supportive moral contexts. Effective governance of the online space concerning the spread of extremist narratives is a vital component in determining whether extremism-supportive moral ecologies can take hold within societies. Further, residential as well as symbolic segregation within society that trigger feelings of deprivation or fuel polarisation between social groups, are thought to contribute to extremism-supportive ecologies. Ultimately, Bouhana (2019) argues that in order to prevent extremism from emerging within our societies, a multilevel analysis which takes a systemic perspective is required.

## 1.2 Defining Risk and Protective Factors for Radicalisation and Violent Extremism

### 1.2.1 Risk Factors

A risk factor can be described as an individual or social (-environmental) characteristic that increases the probability of negative outcomes (Kraemer, 2005). Yet, the term '*risk factor*' has been conceptualised relatively broadly across various different disciplines. Risk factors have often been referred to as predisposing or preceding factors as well as a vulnerability rendering adverse outcomes more likely (Kraemer et al. 1997; Murray, Farrington, & Eisner, 2009). Across the terrorism literature, qualitative studies have identified numerous preceding factors or vulnerability indicators for involvement in terrorism, such as individual needs, relational patterns, ideological affiliations and narratives, triggering events as well as group identities, just to name a few (e.g., Böckler, Leuschner, V., Zick, A., & Scheithauer, 2018; Lindekilde et al., 2019a). However, these '*risk factors*' are neither sufficient to explain radicalisation nor will they be present within every radicalised individual (Borum, 2011; Jensen et al., 2016; Webber & Kruglanski, 2018). As such, a risk factor for violent extremism is a determinant which predicts a high probability or an increased risk that individuals will develop extremist attitudes, extremist intentions or engage in extremist behaviour (Wolfowicz et al., 2020a). Whilst it is the ultimate aim to find the causes for violent extremism, due to the complex nature inherent in radicalisation processes and due to most statistical data so far being correlational, these risk factors most often only allow correlational rather than causal relationships to be established. As such, nuanced categorisations are imperative to distinguish between risk markers, associated/ putative risk factors and truly causal risk factors (Unpublished manuscript Bouhana, 2017; also see Lösel, Bender, Jugl, & King, 2020; Wolfowicz et al., 2020a).

Risk markers can be characterised as correlates related to a causal factor, e.g., gender attributes may be markers for particular socialisation processes experienced by male vs. female individuals, which themselves play a causal role within radicalisation accounts. As such, the relationship can be operationalised as a statistical association between two variables. While risk markers may help detect and predict certain outcomes, they are not able to explain *why* individuals develop these propensities and hence do not exert a causal impact by themselves.

A range of disciplines have further labelled some factors as 'putative risk factors' (Kraemer et al., 1997; Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001). Putative risk factors are factors that can be identified through a correlational design by demonstrating that they strongly correlate with the criterion variable and are operating in the expected direction for

individuals displaying the outcome of interest compared to those people who do not (e.g., for psychology see May & Klonsky, 2016; for criminology see Assink et al., 2019; for radicalisation research see Bhui et al., 2012). While there is evidence to suggest that these factors constitute risk factors, they fall short of fulfilling the established criteria for labelling them as causal risk factors (Kraemer et al., 1997). Attitudinal and psychological variables, such as legal cynicism or low self-control may depict ‘putative’ risk factors and hence, they may simply be classified as ‘associated’ risk factors as we cannot determine which factor, the ‘risk’ factor or the ‘outcome’ variable, has preceded in time. Associated risk factors depict correlates related to the outcome, but we cannot identify whether they are merely associated with one another (e.g., both being caused by another third variable related to confounding or spurious associations) or if the risk factor is of causal nature (Ibid; Kraemer et al., 2001). In theory, only longitudinal studies are able to detect risk factors (Murray et al. 2009), yet cross-sectional studies examining previous experiences, such as adverse childhood experiences, could also fulfil the criteria for being categorised as putative risk factors (Wolfowicz et al., 2020a).

Relatedly, in establishing what is merely an associated/ putative and what is a causal risk factor, different types of data are required. For instance, cross-sectional data is suitable to identify statistically significant associations, whereas longitudinal and well-controlled experimental data may detect the true causes. While cross-sectional regression models may offer predictive quality, they are unable to determine whether a risk factor has preceded the outcome in time, as mentioned above. Instead, causal risk factors not only provide predictive quality but further allow for the temporal ordering of the factors. Such factors are required for establishing cause-effect relationships and to explain and subsequently to prevent or disrupt the causal processes responsible for the adverse outcome (Kraemer, Lowe, & Kupfer, 2005). However, only the most sophisticated and carefully designed experimental and longitudinal studies may be able to detect truly causal risk factors. Accordingly, causality may be established in controlled interventions when the change of a specific variable leads to a change in the outcome of interest (Lösel & Farrington, 2012). Therefore, scholars across various fields recommend that one should first identify what factors constitute associated or putative risk factors and determine their relative impacts and clustering via cross-sectional designs, before researchers should employ more sophisticated techniques through experimental or longitudinal designs (e.g., Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Kraemer et al., 1997). In an emerging field such as violent extremism research, this constitutes one of the key steps towards identifying causal factors for radicalisation (see for discussion on establishing causal risk factors Rutter, 2005; Wolfowicz, Litmanovitz, Weisburd, & Hasisi, 2020b).

### 1.2.2 Protective Factors

Conversely, a protective factor constitutes an individual or social (-environmental) characteristic, which predicts a low probability of adverse outcomes (Lösel & Farrington, 2012). Doosje et al. (2016) refer to protective factors as 'shields of resilience' that may prompt the adoption of non-extremist attitudes or disrupt radicalisation trajectories. Yet, there are far less studies examining protective factors against violent extremism than there exist studies on risk factors (Lösel et al., 2020). This resembles what we generally see within the wider literature on interpersonal violence and delinquency where the majority of the research and related structured violent risk assessments instruments are focused on risk factors, placing much less emphasis on the role protective factors might play (Lösel & Farrington, 2012; Ttofi, Farrington, Piquero, DeLisi 2016b).

However, to better understand why individuals are differentially vulnerable to adopting violent extremist attitudes, intentions and ultimately may engage in extremist violence, a stronger focus has to be placed upon protective mechanisms. This may help us explain why people who have similar risk profiles display diverse behavioural outcomes (Lösel et al., 2018; see Corner, Bouhana, & Gill, 2019 for the concept of multifinality). The vast majority of individuals who experience some identified risk factors for violent extremism do not acquire a violent extremist propensity (Cragin, 2014). As such, it is hypothesised that protective factors might buffer against certain risk factors which is key for understanding radicalisation pathways and for designing successful prevention programs (Borum, 2014). This is consistent with research on interpersonal violence which has found that understanding the dynamic relationship between risk and protective factors for violence and delinquent behaviour constitutes a fundamental step for establishing developmentally informed models of prevention (Cicchetti & Lynch, 1993).

Similarly, most risk assessment tools for violent extremist risk place less emphasis on potential protective factors within their instruments (for an exception see VERA-2, Pressman & Flockton, 2012). Including such protective factors within risk assessment tools may increase the validity and thus, reduce the rate of false positives by more accurately predicting who will develop violent propensities and who may eventually mobilise towards action (Sarma, 2017). In accordance with this, Lösel & Farrington (2012) posit that the integration of more direct promotive and/ or buffering protective factors is likely going to increase the predictive quality as well as the explained variance in the outcome variables. At the same time, on conceptual and methodological grounds, the integration of risk and protective factors is more challenging than assessing risk alone. Yet, such approaches may enable more differentiated configurations



of risk to be identified and subsequently might be valuable to violence prevention and treatment approaches (Jolliffe, Farrington, Loeber, & Pardini, 2016; Lösel & Bender, 2014).

The vast majority of research on protective factors has its origin within the context of resilience research (Cicchetti & Garmezy, 1993; Luthar, Cicchetti, & Becker, 2000; Rutter, 1985). Rutter (2012, p. 336) defines resilience as a “reduced vulnerability to environmental risk experiences, the overcoming of stress or adversity, or a relatively good outcome despite risk experiences”. A core part of resilience research is the universal finding of great heterogeneity of outcomes after all types of environmental adversity (Rutter, 2012). According to Cicchetti (2010) resilience denotes a dynamic and interactive developmental process encompassing positive adaption by individuals, despite experiences of trauma, threat or adversity (also see Luthar et al., 2000).

Relatedly, Masten et al. (1990) referred to the notion of ‘elastic adaption’ in which resilience has further been defined as a healthy development despite a high-risk status (e.g., growing up in a neighbourhood with high levels of community disorder), maintaining competence under specific stressors (e.g., coping with family disruptions), or recuperating from severe trauma (e.g., recovering from domestic violence) (also see Lösel & Bender, 2003, p. 132; Masten, Best, & Garmezy, 1990). Similarly, Rutter (1987; 2006), posits that resilience is inferred from differential outcomes among people who have experienced those stressors and adversity. This is consistent with the multifinality in developmental processes, which refers to the almost infinite different ways in which individuals react to as well as interact with vulnerability and protective factors at different levels of their ecology, which results in diverse developmental outcomes (Cicchetti & Rogosch, 1996). Resilience and positive adaptation to and coping with developmental stressors necessitate protective mechanisms (Lösel & Bender, 2003; 2017).

Protective factors have been operationalised differently across studies, which has led to conceptual and methodological issues (Lösel & Bender, 2003; Masten, 2016). There are broadly three different ways previous research has defined protective factors. First, they have been treated as the absence of a risk factor and have been referred to as individual or social characteristics that might be preventative by inhibiting the emergence of certain risk factors. For instance, within violence research O’Shea and Dickens (2016a) treated the absence of previous violent behaviour as a protective factor, whereas Jessor and Turbin (2014) viewed informal social and personal controls as protective factors for problem behaviour among U.S. and Chinese adolescents.

Second, protective factors have further been treated as the opposite of a risk factor on a continuum. For instance, Shader (2001) viewed excellent school performance as a protective factor against delinquency and problem behaviour, whereas its contrary, poor performance at school constituted a risk factor. The same mechanisms apply to the conceptualisation of social support for pro- and anti-social behaviour as well as the presence of pro- and anti-social role models (Dickens & O'Shea, 2018), which are implemented within the Short-Term Assessment of Risk and Treatability instrument (START; Webster, Nicholls, Martin, Desmarais, & Brink, 2009). As such, depending on what 'side of the coin' is operationalised, certain variables may function as a risk as well as a protective factor at the same time (Lösel & Farrington, 2012; Werner & Smith, 2001). However, Lösel and Bender (2003; 2017) emphasise that a protective factor may often not simply be the other 'side of the coin' or the opposite pole of a continuous risk factor. They further suggest that research on protective factors necessitates more differentiated research methods and often requires direct protective factors to be measured separately in order to quantify the individual effects.

Third, some studies refrain from conceptualising protective factors as the absence of or the opposite end of a risk factor. Instead, they operationalise them as distinct determinants, which can both influence problem- as well as prosocial behaviours (also see Lösel & Bender, 2003; 2017). In these instances, they are viewed as independent and conceptually distinct entities with no corresponding risk factor (Sameroff & Fiese, 2000). This approach tends to be the most common conceptualisation within risk assessment tools, such as the 'structured-professional-judgement' approaches like the Structured Assessment of PROtective Factors (SAPROF), START and the Dangerousness UNDERstanding, Recovery and Urgency Manual 3 and 4 (DUNDRUM-3/4) (e.g., O'Shea, Picchioni, Dickens, 2016b).

Further, protective factors vary in the way in which they exert their impact. They have either been treated as determinants that directly reduce negative outcomes (direct promotive protective factors) or alternatively mitigate or nullify the adverse effects of risk factors (Herrenkohl, Lee, & Hawkins, 2012; Loeber, Farrington, Stouthamer-Loeber, & White, 2008). The former, direct promotive protective factors may directly enhance pro-social behaviours, and therefore, indirectly increase resilience towards adverse outcomes (Jessor & Turbin, 2014). Direct protective factors may directly reduce the dysfunction and thus minimise risk by preventing the onset of a risk factor (Dickens & O'Shea, 2018). These promotive effects are not dependent upon the level of risk present. Hall et al. (2012) refer to these as 'direct protective' (promotive) factors and suggest prevention efforts involving such factors should be focused upon general populations of youth. Uni- and multivariate regression analyses are suitable for

analysing these relationships (Hall, Simon, Lee, & Mercy, 2012; Pauwels & De Waele, 2014). At the same time, Lösel and Farrington (2012) suggest that the analysis of direct promotive protective factors must be sensitive to linear and non-linear main effects and thus, requires curvilinear relationships between protective variables and outcomes of interest to be analysed.

Alternatively, some protective factors may exert mediating and/or moderating effects, which dampen the effects and hence, predict a low probability of adverse outcomes in the presence of risk (Rutter, 1987; Sameroff & Fiese, 2000). These have either been labelled as 'interactive protective factors' (Ttofi et al., 2016b) or as 'buffering protective factors' (Hall et al., 2012). The buffering protective effects may be different among high-risk groups compared to low-risk groups (Loeber & Farrington, 2012; Lösel & Farrington, 2012). Rutter (1987) stresses the importance of examining the interactional nature of such risk and protective factors. Rutter (1987; 2012) suggests that it is in those adverse circumstances (e.g., the experience of risk factors) where the true value of protective factors becomes apparent. Hall et al. (2012) suggest these forms of protective factors should be emphasised in preventive measures focused upon 'at risk' populations (e.g., selective strategies).

A recent study conducted by Rottweiler and Gill (2020) has shown that high self-control and a strong law-related morality can act as interactive protective factors, which buffer against the adverse effects of conspiracy beliefs on violent extremist intentions. Such protective factors may increase resilience by exerting protective effects on violent extremism when risk factors are present. These empirical findings are similar to previous resilience research addressing interpersonal violence (Ttofi et al., 2016b). In addition, resilience research has found that protective factors which increase resilience exert their effects both directly and indirectly among individuals at risk in the form of chain reactions. Some protective mechanisms have the potential to disrupt such chain reactions at different stages that are specific to individuals (Lösel & Bender, 2003; Rutter, 1999).

To summarise, according to Hall et al. (2012) detecting direct and moderating protective mechanisms is challenging and such research necessitates (1) studying the dose-response relationships among proposed risk and direct promotive/ buffering protective factors (2) analysing the buffering effects of proposed protective factors within high-risk populations (e.g., with moderation analyses) (3) analysing the complex relationship between risk, direct (promotive) protective as well as buffering protective factors (e.g., with conditional mediation analyses) (4) delineating particular combinations of potential direct promotive protective factors in compensating for the effects of specific risk factors.

## **Chapter 2: A Systematic Review on Risk and Protective Factors for Different Radicalisation Outcomes Derived from Quantitative Studies**

A coherent knowledge base on the origins and development of radicalisation is key for establishing effective preventing and countering violent extremism (P/CVE) approaches. Robust empirical evidence on risk and protective factors may further inform and advance the development of violent extremist risk assessment instruments. This chapter conducts a systematic review to analyse the state of the quantitative research on risk and protective factors for the development of extremist attitudes, intentions and behaviours. This review determines which factors are associated with an increased risk for or conversely exert protective effects against violent extremist attitudes, intentions and self-reported extremist behaviour. Inferential statistical analyses allow researchers to establish effect sizes of risk and protective factors, which may inform research and preventative approaches against radicalisation and engagement in violent extremism by prioritising those factors which seem to exert the strongest effects upon different radicalisation outcomes.

This review further provides a systematic overview of the psychometric scales used to operationalise the different radicalisation outcomes in these quantitative studies and it differentiates between those scales assessing either radical attitudes, intentions or behaviours. More specifically, this study reviews these radicalisation scales in regard to the measure of outcome, type of ideology, item structure, construct validity as well as author(s) expertise. The purpose of evaluating these psychometric tools was to identify which of those scales constitute psychometrically sound instruments for measuring radicalisation. Subsequently, these scales may be used in future studies to assess radicalisation pathways and underlying psychological mechanisms of risk and protective factors for violent extremism. While the current analysis does not examine risk assessment instruments, the results of this study may inform and guide the development of more evidence-based risk assessment tools by providing empirical evidence for the effects of different risk and protective factors on radicalisation outcomes.

This chapter updates upon a previous systematic review conducted in 2018. Final data sifting finished in January 2021. Overall, over 9500 documents were screened, which were published between 1998 – 2021. Inclusion criteria were limited to: (1) Quantitative studies with an appropriate control group employing inferential statistics (2) Radicalisation had to be assessed as either violent extremist attitudes or violent extremist intentions or as self-reported violent extremist behaviour (3) Cognitive radicalisation measures (attitudes and intentions) had to be measured with psychometric scales including at least three items (4) Risk and protective

factors had to relate to either psychological factors, such as attitudinal and/or personality traits and/or social environmental constructs and/ or previous experiences rather than sociodemographic indicators. Overall, the systematic review identified 127 individual studies in 70 documents, which analysed risk and/or protective factors for different radicalisation outcomes. The review identified 79 risk and 40 protective factors for violent extremism. The most commonly found significant risk and protective factors included in this review demonstrate great similarities with risk factors for and protective factors against interpersonal violence and delinquency. In addition, a considerable number of factors closely resemble previous research findings on intergroup relations, particularly those on collective action and intergroup emotions.

Based on the systematic review findings, I recommend a better theoretical and conceptual integration of risk and protective factors within violent extremism research and within P/CVE programs. Such an integrative approach should be based upon well-established theoretical frameworks within developmental and life course criminology but should further consider social psychological research on intergroup relations and collective violence to better understand the psychological factors underlying radicalisation processes. Moreover, the findings suggest that more research on the protective factors against violent extremism is required in order to elaborate how these may prevent the onset, nullify or buffer against the adverse effects of risk factors. Moving forward, this seems a promising approach in trying to understand the multifinality of risk factors, i.e., why similar risk profiles often lead to very different outcomes. I will also address the conceptual and practical implications and discuss on-going issues in studying radicalisation and violent extremism.

## **2.1 Inclusion and Exclusion Criteria**

Prior reviews' decisions to apply a very broad set of inclusion criteria has impeded their ability to systematically synthesise and categorise the empirical evidence<sup>2</sup>. Due to these methodological limitations, it was decided to synthesise quantitative studies that examine risk and protective factors using well-defined and specific conceptualisations of radicalisation. By limiting the scope to narrow and more precise inclusion criteria, this analysis aims to contribute and advance the empirical evidence-base on risk and protective factors for different radicalisation outcomes. The vast majority of studies included in the systematic review are

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<sup>2</sup> This review applied a scheme to summarise the characteristics of the included studies, which can be found in Table 3.1 and Table 3.2 and in the supplementary materials Table S.3.2.

based on cross-sectional data that means we cannot establish any truly causal risk factors, however, across the analysis the terms ‘putative’ and ‘associated’ risk factor are used interchangeably and they will be simply referred to as ‘risk factors’. As mentioned previously, much has been reviewed in regard to sociodemographic risk factors for radicalisation and terrorism, which is why the analysis refrained from including sociodemographic variables within this review. In addition, a significant proportion of studies did not report any estimates for the sociodemographic variables and the remainder used them merely as statistical controls.

### **2.1.1 Outcome Variables**

Previous reviews have included overly broad inclusion criteria, particularly in regard to the dependent variable which led to comparisons of studies with differential outcomes (e.g., Campelo, Oppetit, Neau, Cohen, & Bronsard, 2018; Madriaza & Ponsot, 2015). Due to these shortcomings, it was decided to analyse radicalisation based on a theoretically grounded typology with a narrow inclusion criterion, which allows for well-defined outcomes. Similar to Wolfowicz et al.’s (2020a) systematic review, the outcome classifications of the Two-Pyramid Model of Radicalization was applied (TPM; McCauley & Moskalenko, 2017) based on the model’s empirical and theoretical qualities as well as its ability in differentiating between cognitive (attitudes, intentions) and behavioural outcomes of radicalisation (Gøtzsche-Astrup, 2018; McCauley & Moskalenko, 2017). The TPM is based on the Theory of Planned Behaviour (Ajzen, 1991), which distinguishes between attitudes, intentions and behaviours, whereby attitudes lead to intentions and intentions, in turn, are the proximate determinants of related behaviours (McCauley & Moskalenko, 2017).

The conceptualisation of the TPM is concerned with the problem of ‘specificity’, which is one of the most prominent criticisms of current radicalisation models and theories (Sageman, 2004; Schuurman & Taylor, 2018). Most accounts fail to explain why the vast majority of individuals holding extremist attitudes will never become engaged in violent extremism (Schuurman, 2020b). Conversely, there are cases of terrorists who were not overly radicalised (Schuurman & Taylor, 2018). As mentioned previously, while ‘radicalisation’ still suffers from a lack of definitional and conceptual consensus as well as specificity issues, social psychological research on attitudes- behaviour relations has shown that the level of specificity of attitudinal or intentional antecedents of behaviours is what determines which attitudes and intentions can be operationalised as proxies for the outcome variables (Ajzen, 2012; Webb & Sheeran, 2006; for meta-analysis see Armitage & Conner, 2001). As such, a key element of attitudinal and intentional measures is to reach a satisfactory level of predictive quality in

regard to the behavioural outcome (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Measures of support or justification for extremist violence as well as intentions or willingness to engage in extremist violence offer the highest level of specificity in regard to violent extremism (McCauley & Moskalkenko, 2009; 2017).

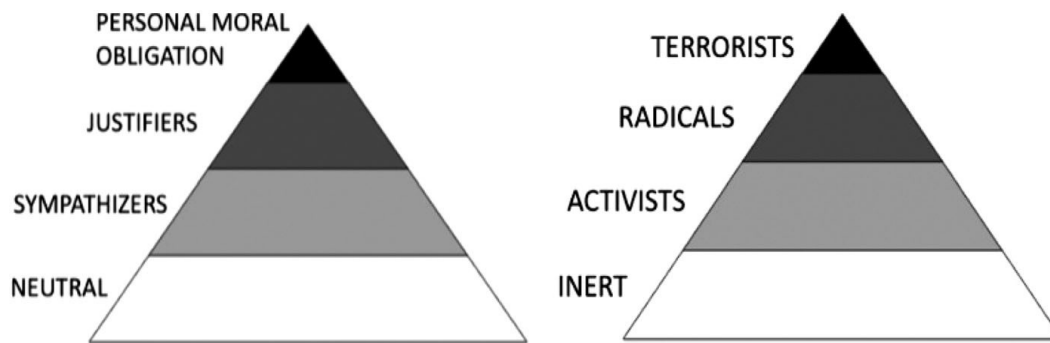
Beck and Ajzen (1991) have extended the TPB to explain criminal behaviour, demonstrating that the cumulative and interactive effects of risk as well as protective factors are crucial for determining if and when attitudes might translate into actual behaviour. They suggest that the absence of certain risk factors and/ or the presence of various direct and buffering protective factors is decisive for determining why supportive attitudes and intentions may not result in actual engagement in certain behaviours. Criminological studies have further provided empirical evidence to support the attitudes-behaviour approach by identifying under what circumstances criminal attitudes and intentions can potentially lead to criminal behaviours (Folk et al., 2018). Wolfowicz et al. (2020b) suggest that the classifications of TPB constitute a highly suitable framework for studying risk and protective factors in relation to cognitive and behavioural outcomes of radicalisation. While engagement in extremist violence or any type of violent behaviours is a relatively simple indicator, operationalising cognitive radicalisation is much more challenging and various proxy measures have been applied (e.g., Slooman & Tillie, 2006) (see supplementary materials Table S.2.3). Relatedly, the inclusion was limited to studies which used outcome variable(s) of at least one of the three outcomes<sup>3</sup> identified within McCauley and Moskalkenko's (2017) two-pyramid model (TPM) of radicalisation:

1. Attitudes towards violent extremism (Justification/support for violent extremist behaviours and terrorism)
2. Intentions to engage in violent extremism (Willingness towards involvement in extremist behaviour and terrorism), and
3. Violent extremist behaviour (Self-reported involvement in violent extremist behaviours)

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<sup>3</sup> The present study refers to 'extremist' attitudes, intentions and behaviours rather than the original term 'radical' used by McCauley and Moskalkenko (2017). From a definitional and conceptual viewpoint, the operationalisation by the authors of the TPM aligns with the definitions of 'extremism' in this thesis.

Figure 2.1. Two-pyramid model. Reproduced from McCauley and Moskalenko (2017).



Hence, studies operationalising cognitive outcomes of radicalisation by either measuring violent extremist beliefs/attitudes or violent extremist intentions/ willingness as well as studies applying measures to assess self-reported engagement in violent extremism, were considered to have met the inclusion criteria. These operationalisations provide a satisfactory level of specificity as they are closely aligned with the outcome of interest (violent extremism) and further ensure similarity between included studies as they are examining highly similar constructs.

### 2.1.2 Operationalisation of Psychometric Scales

The inclusion criterion was limited to those studies, which operationalised cognitive radicalisation outcomes (attitudes, intentions) with at least 3 items in order to create a psychometric scale, which allows for latent variable modeling. Latent variables are constructs which are not directly observable and are inferred from observable variables. Relatedly, cognitive radicalisation is a multifaceted and complex process (Kruglanski et al., 2014; Ozer & Bertelsen, 2018), which is not directly observable and thus cannot be obtained with a single exact measurement. Observed variables, namely manifest variables, are imperfect measurements of a single underlying concept (Ullman, & Bentler, 2003). Yet, latent variables allow measurement error within observed variables to be determined. Each manifest variable depends on the latent variable through a linear equation, which manifests itself in factor loadings (Cole & Preacher, 2014). Therefore, in order to operationalise individuals' cognitive radicalisation outcomes, a minimum of 3 attitude-related or intention-related items had to be operationalised. For this reason, studies utilising the PEW survey were excluded. The single-item outcome measured support for suicide terrorism by asking participants whether they agreed to the following statement: *“Some people think that suicide bombing and other forms of violence against civilian targets are justified in order to defend Islam from its enemies. Other*



people believe that no matter what the reason, this kind of violence is never justified. Do you personally feel that this kind of violence is often justified to defend Islam?" (Pew Research Center, 2007).

### **2.1.3 Types of Risk and Protective Factors**

Risk factors were defined as characteristics that predicted an increased probability of outcomes like violent extremist attitudes, intentions and behaviours. Conversely, protective factors were factors that reduced the probability of those outcome variables. Statistically significant ( $p < .05$ ) positive regression coefficients indicated an increased risk, whereas significant negative coefficients demonstrated protective effects. The inclusion criteria allowed for static as well as dynamic (changeable) risk and protective factors. Dynamic factors are associated with the possibility of changing the probability of radicalisation processes and violent extremist risk over time. These include attitudinal variables, such as adherence to law or perceptions of injustice but also encompass constructs, such as personality traits, individual differences and neuropsychological characteristics, including self-control. While the latter constructs are relatively stable over time, they are not fixed and may change due to various life experiences, treatments etc. On the contrary, static factors refer to fixed or past elements that will not change (such as childhood/ adolescent experiences as well as age and gender). Although these static factors cannot be changed, their presence may be associated with an increased or decreased risk.

### **2.1.4 Control Groups**

Only studies with an identifiable control group met the inclusion criteria. As such, the inclusion criteria were limited to studies that showed variation in the dependent variable (Higginson et al., 2014). More specifically, studies which seek to identify risk and protective factors for violent extremist attitudes and intentions are required to also include individuals in their sample who do not hold extremist attitudes or intentions (McCauley & Moskalenko, 2017). This also applies to violent extremist behaviours which necessitate a suitable comparison group (Berrebi, 2007). As the main focus of this quantitative review was to identify the psychological and social environmental risk and protective factors for violent *extremist* attitudes, intentions and self-reported behaviours and not risk factors for *terrorism*, only population surveys are included, since these samples are able to provide variation in the cognitive outcomes for radicalisation (extremist attitudes and/or extremist intentions) as well as the behavioural outcomes (self-reported extremist violence). Due to the fact that the emphasis is placed upon

violent extremism rather than terrorism, the general population does not serve as a suitable control group for the behavioural measure as population samples may indeed be comprised of individuals who have been involved in violent extremist behaviours.

Therefore, studies were excluded which were not based on quantitative data and/ or studies comparing the general population to a sample of terrorists (e.g., Clemmow, Schumman, Salman, & Gill, 2020), studies comparing terrorist offenders to other types of offenders, such as non-ideological criminal offenders (Liem, van Buuren, de Roy van Zuijdewijn, Schönberger, & Bakker, 2018) or (mass) murderers (Clemmow, Gill, Bouhana, Silver, & Horgan, 2020; Dhumad, Candilis, Cleary, Dyer, & Khalifa, 2020), comparative studies of different types of ideological terrorists (e.g., Gill & Young, 2011) or other types of comparisons between terrorists, such as lone actors vs. group actors (e.g., Corner & Gill, 2015). Analyses utilising samples of different ideological activists (Jásko, Szastok, Grzymala-Moszczyńska, Maj, & Kruglanski, 2019) and studies using samples such as the PIRUS ‘Profiles of Individual Radicalization in the United States Database’ (Jásko, LaFree, & Kruglanski, 2017) analysing ideologically motivated violent and non-violent extremists in the United States (Jensen et al., 2016) as well as studies based on the extremist crime database (ECDB; Chermak & Gruenewald, 2015) were also included. These studies did not provide adequate comparison groups in regard to the cognitive or behavioural outcomes.

### **2.1.5 Research Designs**

While qualitative studies are important for identifying risk factors for radicalisation, much on this has already been published, as mentioned in the literature review (e.g., McGilloway, Ghosh, & Bhui, 2015). Hence, this study is solely concerned with studies applying rigorous quantitative methods. High-quality cross-sectional studies, including experimental designs, as well as longitudinal studies are included. In addition to correlational designs, intervention analyses are included if they reported quantitative data on specified risk and/ or protective factors. In order to ensure a high quality of quantitative studies only samples  $n \geq 50$  were included. Further, smaller samples sizes for experimental and longitudinal studies were accepted if they met the other specified inclusion criteria. Included studies had to apply inferential statistical techniques, such as regression analysis (e.g., linear, logistic, polynomial or Bayesian regression) or structural equation modeling and were required to provide adequate statistical information (e.g., beta-weights, path coefficients, significance tests/ confidence intervals) for determining the effects of risk and/ or protective factors. Such estimates are necessitated for determining which factors are significantly associated with an increased or

reduced probability that individuals will espouse violent extremist attitudes and/ or hold violent extremist intentions and/ or are involved in violent extremist behaviours.

### **2.1.6 Extremist Ideologies**

Individuals with violent extremist attitudes, intentions and behaviours may be motivated by a variety of ideologies, such as religious/ ethnic<sup>4</sup>, far-right, far-left, single issue (e.g., anti-abortion, environmental protection), or nationalist/ separatist ideologies. However, these motivations are not exclusive in that some groups or actors are often motivated by several issues and it is not possible to draw distinct lines between these motivating ideologies (Lösel et al., 2018). For instance, Doosje et al. (2016) categorise some terrorist groups, such as ISIS as being motivated by more than one type of extremism, i.e., religious as well as nationalist-separatist, due to their claim for territory. At the same time, individuals adopting different ideologies nonetheless often share similar developmental factors and mechanisms (Jensen et al., 2016; Obaidi, Kunst, Kteily, Thomsen, & Sidanius, 2018b) and the underlying ideology rarely is the primary motivating factor (Kruglanski et al., 2014).

### **2.1.7 Similarities and Distinction to Recent Quantitative Reviews**

The search results and findings might be compared and contrasted with recent systematic reviews conducted by Wolfowicz et al. (2020a) and Lösel et al. (2018). However, the authors' reviews differed from the present analysis in regard to data inclusion dates, inclusion and exclusion criteria and subsequent reporting and synthesis of results. The former two likely explain the differences in the number of included studies as well as different identified risk and protective factors compared to this study. For instance, Lösel et al. (2018) systematic review exclusively focused on protective factors against extremism and violent radicalisation. Further, Lösel et al.'s (2018) screening process ended in 2017 and Wolfowicz et al.'s (2020a) ended in 2019, whereas the final search for this chapter finished in January 2021. While the majority of Wolfowicz et al.'s (2020a) studies employed dichotomous outcome variables, such as support or justification for terrorism or specific types of terrorism (e.g., suicide bombings), the attitudes and intentions outcome variables of this present study had to be measured with at least three items in order to capture the complex and not directly observable concept of cognitive radicalisation more adequately and to allow for latent variable modeling. While this chapter's

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<sup>4</sup> 'Religious' extremism is combined with the term 'ethnic' as the ethnic background is often very closely related to religion (Doosje et al., 2016).

review was primarily concerned with identifying psychological, social as well as environmental factors underlying radicalisation, sociodemographic variables were the most frequently identified risk factors within Wolfowicz et al.'s (2020a) report.

Wolfowicz et al. (2020a) additionally conducted a random-effects meta-analysis. However, the wide range of different risk and protective factors makes the computation of reliable effect size extremely challenging, rendering highly sophisticated meta-analyses very difficult. Yet, as mentioned above, many of Wolfowicz et al.'s (2020a) identified factors were sociodemographic variables, which renders it much easier to categorise them distinctively. By contrast, the present study primarily focuses on psychological accounts, such as attitudinal factors and personality traits as well as on social environmental processes. For instance, the construct of 'perceived personal injustice' or 'anomia' just to name a couple, are measured with multiple different scales across studies, yet the individual studies all claim to measure the same construct. Such great heterogeneity in scales and constructs operationalised makes it very difficult to clearly assign various factors to distinct categories. Therefore, it was decided to descriptively report and extensively review the most significant factors within the results section, but the study refrained from conducting a meta-analysis. Further statistical estimates and details of all studies are provided and can be found within the see supplementary materials Table S.2.2.

## 2.2 Method

This analysis is based on a systematic review, which has been conducted by our research team at UCL for the ERC-funded project 'Grievance'. The systematic review was part of a wider project on violent extremist risk factors.<sup>5</sup> In order to establish the evidence base on risk and protective factors for different radicalisation outcomes (e.g., different risk specifications), the present study included the final 191 studies identified within the previous systematic review sift, which operationalised multiple search terms including 'factor' and 'risk' (see supplementary materials Table S.2.1 for details). However, the term '*protective*' was not specifically included in the original search terms and highlights a limitation of the previous analysis. The inclusion criteria of our original Grievance systematic review were much more broadly defined as we included all quantitative as well as qualitative studies reporting determinants of radicalisation or a behaviour associated with a terrorist offence and the outcome data was comprised of official measures (such as police recorded data) or unofficial

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<sup>5</sup> Conducted by the lead author for Public Safety Canada.

measures (such as self-reported experiences). The search protocols are included in the supplementary materials S.2. The Grievance systematic sift concluded in July 2018. All 191 studies were screened, and those studies which met updated inclusion criteria were included. All relevant information was extracted and coded, and the respective psychometric scales were also reported (for the full results see supplementary materials Table S.2.3).

For the purpose of the present analysis and to overcome some of the limitations in regard to the inclusion of protective factors, several extensive steps were conducted in order to identify further studies which have examined risk and protective factors. Overall, over 2500 additional documents were screened. First, in July 2020<sup>6</sup> a forward citation search on all of the above-mentioned 191 studies was conducted and subsequently all studies were screened for title and abstract. Those studies which seemed appropriate, based on the abstract and title, underwent a secondary screening process, which included reading the articles' methodology sections. If the methodology section fulfilled the more narrowly defined inclusion criteria, the papers were read in their entirety. Those studies examining risk and/or protective factors were brought forward and therefore are included in this systematic review. The subsequent step involved coding the independent variables and the study details for each included study. Yet, the screening process was two-fold. All psychometric scales employed in the respective studies were screened and extracted. If a study applied or introduced a scale, which satisfied the scale inclusion criteria (see above outcome inclusion criteria), the scale was extracted even if the study did not meet the inclusion criteria for the systematic review and subsequently was not included in the risk and protective factor review. That decision was made as this chapter's analysis also set out to synthesise and review all self-report scales measuring violent extremist attitudes, intentions and behaviours.

Additionally, forward as well as backward citation searches on the two recent systematic reviews conducted by Lösel et al. (2018) and Wolfowicz et al. (2020a) were applied as well as on Scarcella et al.'s (2016) systematic search of psychometric scales utilised to identify radicalisation and risk for violent extremism and terrorism. Although these 'snowball' methods are not as representative as a systematic search of databases, it is a widely applied additional procedure when conducting systematic reviews and it is effective in increasing the sample size of primary studies (Lösel et al., 2018). Furthermore, due to the lack of the term 'protective' in our initial search, online databases were searched, such as the UCL library database and Google Scholar to identify relevant literature. Several combined search strings

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<sup>6</sup> I updated the systematic review until January 2021.

were applied with the term ‘protective’ included. The search terms for Google Scholar are reported in the supplementary materials S.2. Only articles in English and German language were screened. For every search term, the results were ordered by relevance and were limited to the first 20 pages displayed by Google Scholar due to the large number of results. The final data screening ended in January 2021.

## 2.3 Results

### 2.3.1 Descriptive Characteristics of Psychometric Scales

Table S.2.3 in the supplementary materials lists all psychometric tools, which were identified during the systematic search. I only included those scales, which have been operationalised in order to identify potential risk factors and/or indicators for individuals who (1) sympathise with/ hold attitudes supportive of violent extremism or (2) who hold intentions to engage in violent extremism or (3) who have engaged in acts of violent extremism. Additionally, in order to satisfy the inclusion criteria, only scales consisting of at least three items were included. A minimum of three items is required in order to conduct rigorous statistical analyses, such as performing latent variable analyses which are able to assess measurement errors of scales. Subsequently, 8 studies assessing radicalisation and violent extremism with only one item were excluded. Among the 1-item outcome variables, the majority ( $n = 5$ ) of those were based on the PEW Research Center suicide terrorism item.

Table S.2.3 includes the research articles where the scale was first introduced. If more than one scale was introduced, all scales are listed. The table includes further details concerning the following study characteristics: 1) Number of scale(s) 2) Acronyms and abbreviations of scale(s) and year published or author name(s) and year 3) Scale title 4) Measure of outcome 5) Type of ideology 6) Short description of scale items (number of items, description of scale items, answer categories) 7) Author(s) 8) Author(s) area of expertise 9) Journal of publication.

#### *Scales by Year*

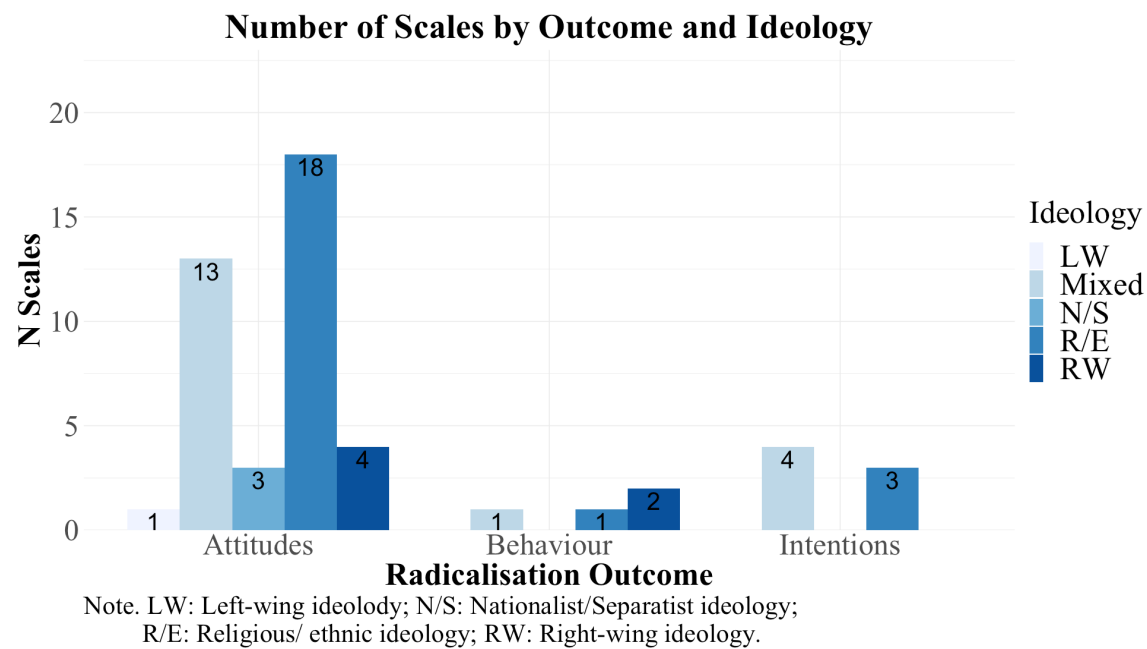
The oldest scale identified had been operationalised in 1998 (Boehnke, Hagan, & Merkens, 1998), whereas the newest one was developed in 2020 by Yustisia, Putra, Kavanagh, Whitehouse, & Rufaedah (2020). The largest number of scales per year ( $n = 8$ ) was developed in 2019, followed by 6 scales in 2018 and 2017, respectively. The majority of scales ( $n = 26$ ) were developed between 2015 – 2020, indicating a stark increase, which is related to a recent

trend of increasing quantitative studies within violent extremism research, as identified by Schuurman (2020a).

### *Scales by Outcome and Ideology*

Overall, 50 scales measuring different outcomes of radicalisation were identified (see Figure 2.2). The majority of scales ( $n = 38$ ; 78%) assessed support for extremist violence (attitudes), 7 scales (14%) addressed willingness to engage in extremist violence (intentions) and 4 scales (8%) measured self-reported extremist behaviour. In terms of the type of ideology, 44% of all measures assessed religious/ ethnic radicalisation, 12% tapped into right-wing ideologies, 6% of all scales assessed nationalist/ separatist radicalisation, 2% left-wing radicalisation, whereas 36% were classified as mixed, indicating a radicalisation measure which is devoid of any specific ideology (e.g., does not specify any specific values or beliefs).

**Figure 2.2.**



### *Psychometric Properties Assessment and Characteristics of Scales*

The scale most frequently operationalised was the 4-item Radicalism Intentions Scale (RIS; Moskalkenko & McCauley, 2009). While the majority of scales had predominantly been employed in the respective studies for which they were developed, the RIS scale has been used

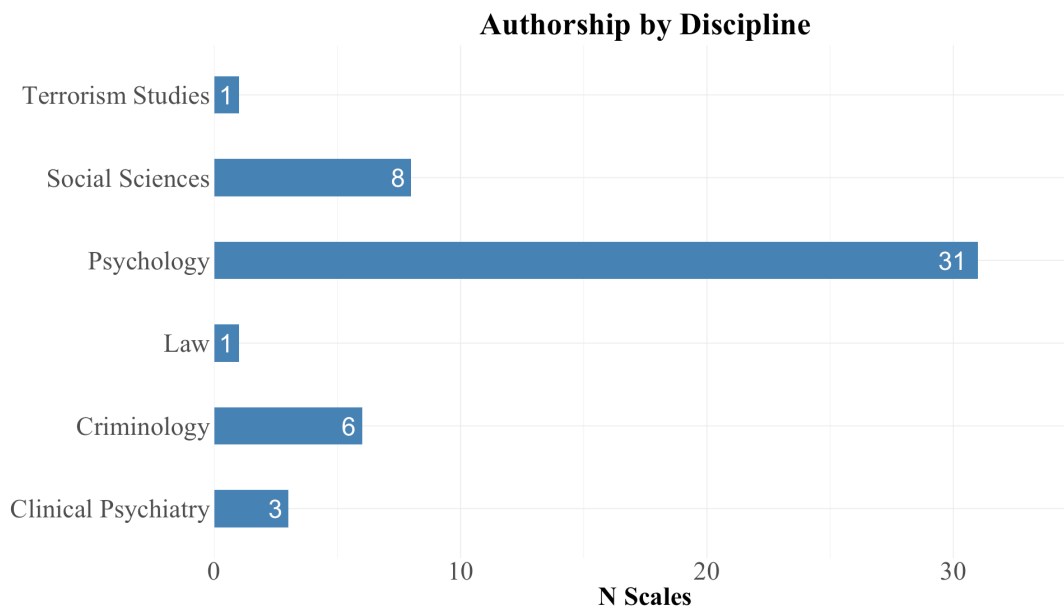
in 22 different studies, whereby 20 of those are based on different survey samples. In order to ensure that the scales operationalised are valid and reliable, psychometric property assessment is required. Moskalenko & McCauley (2009) conducted exploratory principal component analysis (PCA) and found an adequate component structure confirming construct validity for the RIS scale. A recent study based on a German nationally representative sample performed confirmatory factor analysis (CFA) on the RIS scale and found good fit indices (Rottweiler, Gill, & Bouhana, 2021; also see chapter 3). While the majority of studies reported some internal reliability markers, such as the internal consistency by providing the  $\alpha$  value of scales, only  $n = 10$  studies (20%) further analysed construct validity by conducting exploratory factor analysis (EFA) and  $n = 11$  (22%) performed confirmatory factor analysis (CFA) (see Table S.2.3 in the supplementary materials for more details). Scale items ranged between 3 and 44 items per scale. Apart from one scale (see Muluk et al., 2013), which used yes/ no answer choices, all scales measuring extremist attitudes and intentions were assessed on Likert scales, ranging from 4 to 10-point scales. All scales measuring self-reported violent extremist behaviour ( $n = 4$ ) were assessed with yes/ no answer categories.

### *Authorship*

Apart from two scales, which were both developed by Fuchs (2003), all remaining scales had been developed by more than one author. The first authors' expertise was predominantly situated within psychology (62%). Among all 31 scales within psychology, 19 of those were developed by researchers within social psychology, 9 had a general psychology background and authors of 3 scales situated themselves within political psychology. The second most common field was social sciences (16%) (i.e., political science, sociology and anthropology). A further 12% of authors had a background within criminology. Among the remaining authors, 6% had their expertise within clinical psychiatry, whereas only 2% were situated within law and another 2 % came from the field of terrorism research (see Figure 2.3)



**Figure 2.3.**



### **2.3.2 Descriptive Characteristics of Risk and Protective Factors**

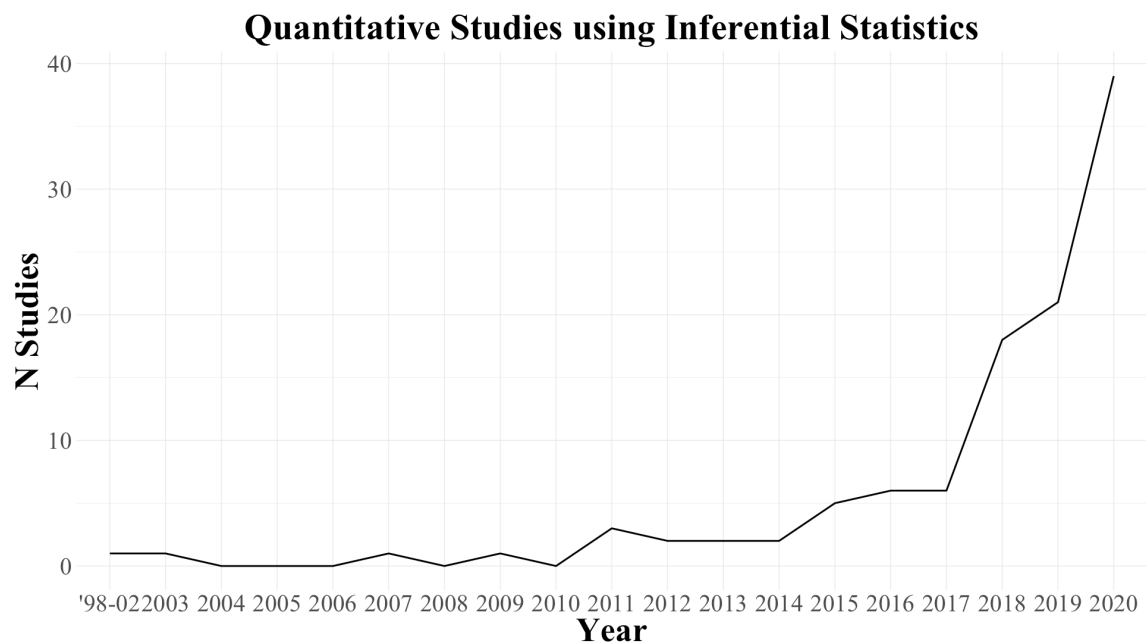
#### *Progress of Quantitative Studies Applying Inferential Statistics*

Overall, 127 studies<sup>7</sup> across 70 research outputs were identified. Seventy of those research outputs were classified as journal articles, whereas one study was part of a PhD thesis. All studies were published between 1998 and 2021 with the largest number of research papers ( $n = 39$ ) being published in 2020. From 2010 onwards, at least two studies applying inferential statistics were published every year. Figure 2.4 highlights the stark increase in quantitative studies applying inferential statistics to examine radicalisation and violent extremism within recent years, whereby 68% of all studies have been published since 2018. This finding echoes Schuurman's (2020a) recent review of research on terrorism. Table S.2.2 in the supplementary materials lists all quantitative studies conducted with those scales which were identified during the systematic search.

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<sup>7</sup> The majority of research articles included multiple separate studies often with different radicalisation scales being implemented.

**Figure 2.4.**

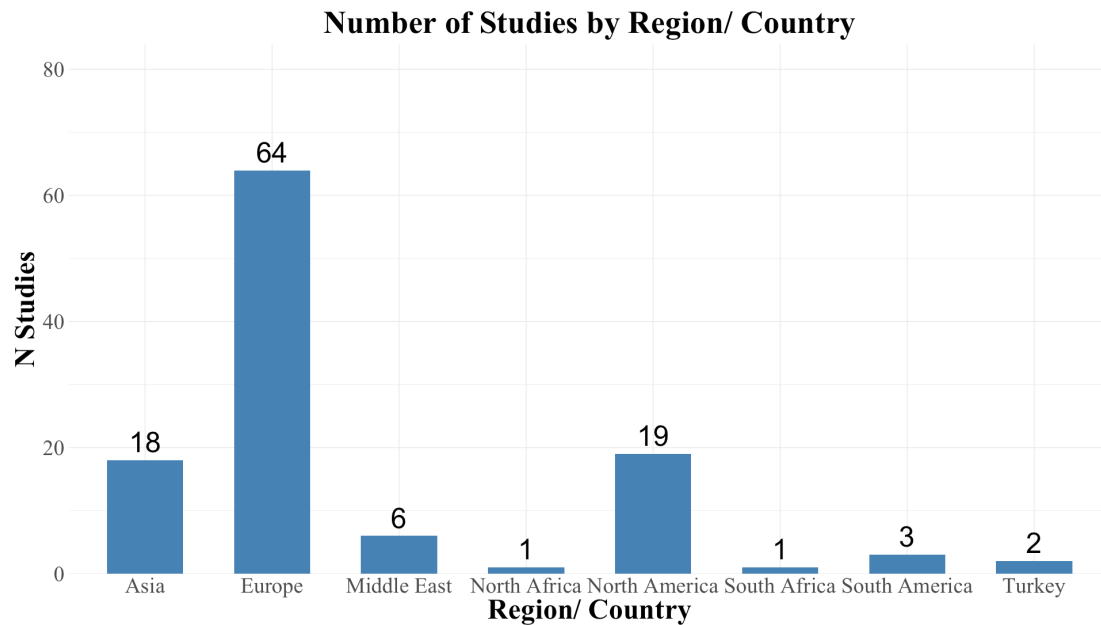


*Context*

The majority of studies per region were conducted in Europe ( $n = 64$ ), with the largest number of studies being conducted in Germany ( $n = 13$ ), followed by Spain ( $n = 10$ ), Denmark ( $n = 8$ ) and Belgium ( $n = 8$ ), yet most of the Belgian studies focused on the same data set (Pauwels & De Waele, 2014) (see Figure 2.5). Another 7 studies were conducted in France, 5 in the Netherlands and 4 in the U.K. However, for the latter, 3 studies were based on the same original dataset (Bhui, Everitt, Jones, & Correa-Velez, 2014). Another two studies focused on Sweden and Norway respectively, whereas only a single study was undertaken in Poland, Serbia, Italy, Switzerland as well as Romania. The second largest number of studies ( $n = 19$ ) was undertaken in North America (the U.S. and Canada). Of these studies, 12 were conducted in the U.S. and 7 in Canada. This was followed by 12 studies conducted in Asia. Of those, 6 were focused on Indonesia, 3 on Afghanistan and 3 on Pakistan. Another 2 studies were conducted in India and Sri Lanka each, whereas only a single study was based on a Philippine as well as a South Korean sample. This was followed by the Middle East region ( $n = 6$ ), where 5 studies focused on Israel and a single study on Lebanon. Within South America ( $n = 3$ ), 2 studies were conducted in Chile and one study in Brazil. Lastly, 2 studies were based on a Turkish sample and a single study was undertaken in South as well as North Africa (Morocco,  $n = 1$ ), respectively. Taken together, 75% of studies ( $n = 95$ ) focused on WEIRD (Western, educated,

industrialised, rich and democratic) countries, whereas 25% ( $n = 32$ ) were based on non-WEIRD countries.

**Figure 2.5.**



### *Sample characteristics*

Overall, the combined number of respondents for all studies was  $n = 110,435$ . The average sample size was  $n = 1004$ , with the smallest sample consisting of  $n = 44$  participants, which was part of a longitudinal study undertaken by Feddes, Mann and Doosje (2015). The inclusion criterion for cross-sectional studies was  $n \geq 50$ , yet longitudinal studies with  $n < 50$  were included. The largest sample ( $n = 18631$ ) was part of a German school study conducted by Baier et al. (2009). The average age of all participants was 27 years. The samples with the youngest average age were both Dutch school samples with  $M_{\text{age}} = 16$  (van Bergen, Feddes, Doosje, & Pels, 2015; van Bergen, Ersanilli, Pels, & de Ruyter, 2016), whereby the oldest sample was a German nationally representative sample with  $M_{\text{age}} = 55$  (Rottweiler et al., 2021). The majority of samples (53%) were comprised of young individuals below the age of 25 and almost one third of studies sampled individuals under the age of 21. In total, 39 studies solely focused on school and university students. For further details about the mean age and sample types see supplementary materials Table S.2.2.

### *Analytical Procedure*

The vast majority of studies ( $n = 118$ ; 93%) applied a cross-sectional survey design in comparison to 9 studies (7%) employing an experimental design. Feddes et al. (2015) and Schumpe et al. (2020) were the only ones who conducted a longitudinal study, which constitutes only 2% of all studies (Schumpe, Bélanger, Moyano, & Nisa, 2020). Rousseau et al. (2020) applied repeated cross-sectional linear-mixed effects models (Rousseau, Miconi, Frounfelker, Hassan, & Oulhote, 2020). In terms of statistical analysis, 68 studies applied regression analysis, including logistic, linear, hierarchical and binominal analyses and 49 studies conducted path analyses, with only a few of those employing full structural equation modelling (SEM) with latent variables. In total, we excluded  $n = 4$  studies, which did not apply any type of regression or SEM based statistical techniques. Furthermore, while we included the scale assessing support for and willingness to engage in violent extremism developed by Simon Reichert, & Grabow (2013), I excluded the related study in the present systematic review on risk and protective factors, as the authors solely reported the estimated interaction terms, rather than the main effects (e.g., individual regression coefficients) (see supplementary materials Table S.2.3 for different analytical procedures).

### *Data Sources*

All studies included were derived from surveys. The vast majority of included studies (94%) used original data, meaning the data analysed in the studies had been collected for those particular studies and had not been published previously. In terms of secondary data, 7 studies were based on datasets from previous studies. For example, Bhui et al. (2016; 2019) used the same dataset in their 2016 and 2019 studies, which had previously been used in a 2014 study by the same authors (Bhui et., 2014; 2019; Bhui, Silva, Topciu, & Jones, 2016). Similarly, Schils and Pauwels (2016), Pauwels and Svensson (2017) and Pauwels and Hardyns (2018) used data that previously had been collected for a study conducted by Pauwels et al. (2014). Additionally, Lobato et al. (2020) used data from a previous study published in 2018 (Lobato Moya, Moyano, & Trujillo, 2018; Lobato, Moya, & Trujillo, 2020). In regard to those studies, if the dependent variable in newer analyses was identical to the previous study, only new risk or protective factors were included. Relatedly, Baier et al. (2016) and Fuchs (2003) both ran two analyses on a single dataset, however, they used two different radicalisation scales for each study. Therefore, all risk and protective factors identified were included (Baier, Manzoni, & Bergmann, 2016). The remaining 2 studies that used secondary data, were based on the

MYPLACE 2012/2013 survey and the Young in Oslo 2015 survey (Storm, Pavlovic, & Franc, 2020).

Furthermore, 3 studies were excluded which solely analysed terrorist offenders as they did not meet the inclusion criteria of providing an appropriate control group. Two of these studies employed the PIRUS database of US based extremist offenders and the other study compared violent terrorists to non-violent terrorist offenders. A further 3 studies comparing violent extremists to the general population were excluded. Individuals in the general population may have engaged in previous violent extremist behaviours and thus, are not a suitable control group. Lastly, 4 studies were excluded, which solely analysed sociodemographic variables as predictor variables as this systematic review was focused on identifying the psychological and social environmental risk and protective factors for radicalisation and violent extremism.

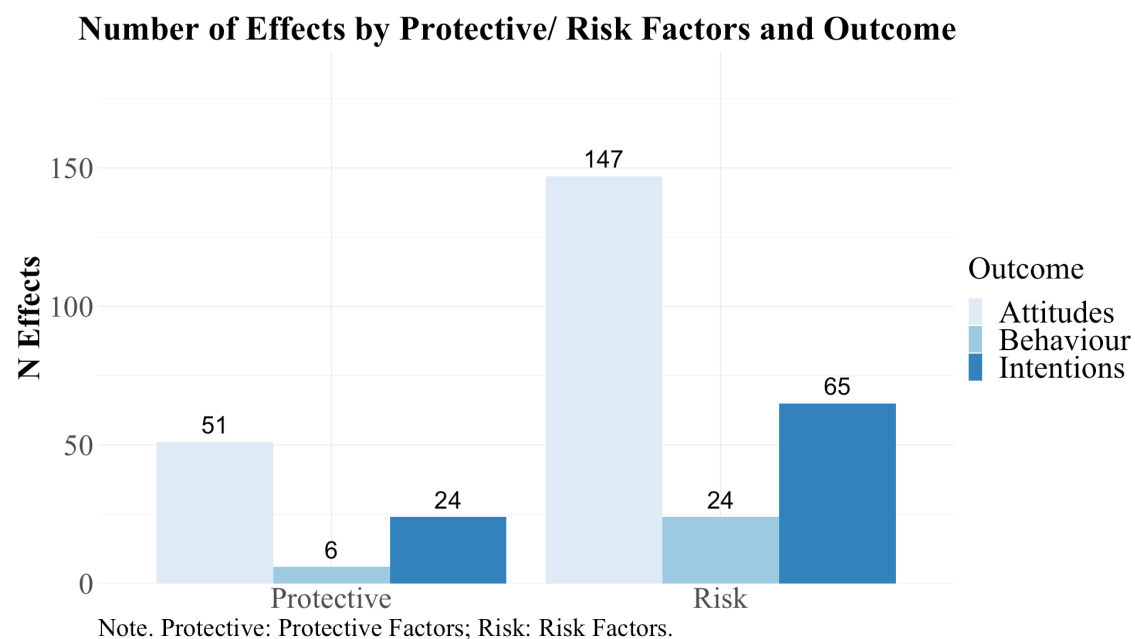
#### *Risk and Protective Factors by Outcome and Type of Ideology*

Apart from 5 studies who only reported protective factors (all conducted by Obaidi, Bergh, Akrami, & Dovidio, 2020), all other studies ( $n = 122$ ) reported some significant risk factor effects. Additionally, another 50 studies were identified, which also demonstrated protective factors. While a large proportion of the included papers explicitly analysed protective factors for violent extremism, only one study was designed to solely examine protective factors (Obaidi et al., 2020). The majority of research papers conducted multiple studies, and some assessed different dependent variables across their studies. Out of all studies, 74 assessed support for extremist violence (attitudes), 43 studies addressed willingness to engage in extremist violence (intentions) and 10 measured self-reported extremist behaviour. Two studies applied a combined measure comprising of violent extremist attitudes and behaviour. The largest proportion of studies ( $n = 55$ ) examined religious or ethnic radicalisation. A further 13 studies assessed far right extremism, whereas 4 studies analysed nationalist/ separatist ideologies as well as 2 studies captured left-wing extremism. No study examined single issues extremism (e.g., anti-abortion or environmental conservation). Lastly, 53 studies were categorised as mixed, which meant the radicalisation measure did not assess any specific ideology but instead measured illegal and violent behaviour based on political, religious, social or ethnic grounds (see Table S.2.2 in the supplementary materials).

While 79 different factors showed a risk effect (see Table 2.1), 40 different factors demonstrated a protective effect (see Table 2.2). The study identified 63 different risk factors

predicting extremist attitudes. This was followed by 30 different risk factors for estimating extremist intentions and 15 risk factors for violent extremist behaviour. In terms of protective factors, 31 different protective factors against violent extremist attitudes, 8 protective factors against violent extremist intentions and 34 protective factors against violent extremist behaviour were detected. Across all studies, 323 significant regression estimates (excluding control variables) were identified. Among those, 236 (73%) pertained to risk factors, whereas 81 (27%) significant protective effects have been identified (see Figure 2.6).

**Figure 2.6.**



### 2.3.3 Synthesis of Quantitative Studies

Below a descriptive summary of the findings is provided. The decision was made to refrain from conducting a meta-analysis due to low numbers of effects on various risk and protective factors as well as difficulties assigning those factors to valid categories, i.e., ensuring that combined predictive factors are assessing the same constructs. These issues hamper the computation of reliable effect sizes and render sophisticated meta-analyses questionable and challenging to conduct. For reasons of parsimony, only those effects which showed a significant positive or negative effect are reported, and may therefore, be characterised as risk

or protective factors for violent extremist attitudes, intentions or behaviour.<sup>8</sup> Additionally, this analysis does not make comparisons between different types of ideologies in regard to which risk or protective factors might be more or less predictive for one or another ideology. If some factors were more prevalent or have shown significant effects for particular types of extremism, this does not mean that they do not apply to other ideologies as well. The absence of a risk or protective factor for certain kinds of extremism is most often simply because the individual studies did not test for varying ideologies, e.g., they only focused on one type of extremism and/ or operationalised a specific sample or conversely, they surveyed a mixed sample. Mixed typed outcome measures have become most prevalent within recent years. Importantly, the synthesis will focus on the most relevant risk and protective factors within the results section. This means those factors are presented, which had significant effects within multiple studies. In order to see the full results please see Table 2.1 and Table 2.2.

All studies examined multiple risk and/ or protective factors for violent extremism. If provided, the standardised beta coefficients are stated in order to allow for the relative comparison of multiple risk- or protective factors operationalised within one analysis. Whereas a positive coefficient meant an increased probability of the extremist outcome variables exists, a negative sign indicated a reduction of the likelihood of that outcome. Some studies applied more than one regression analysis for the same factors or additionally included interaction terms. Where possible, the most comprehensive model which includes most of the risk- or protective factors within one model are reported in order to determine the most important factors and to test for mere spurious or confounding associations between variables. Several included studies have tested for interactions, yet, despite the benefits of analysing moderating relationships, for consistency reasons only the main effects rather than the interaction terms will be stated. Only coefficients with  $p < .05$  were included in the findings.

As mentioned above, results highlighted 79 different variables which could be classified as a risk factor and 40 factors which could act as a protective factor against extremism. The risk and protective factors were divided into several categories: Individual, peer/ group, family, school, and community/societal factors/ exposure (amended from Lösel & Farrington, 2012), however, some factors and categories overlap and as such it was not always possible to perfectly assign each variable to one distinct category and one might argue that some variables may have been better placed into a different one (see Table 2.1 and 2.2).

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<sup>8</sup> Most studies analysed other variables as well which makes bias due to multiple testing possible.

### *Individual-level Risk Factors*

At the individual level, one of the two most commonly examined risk factors was violent extremist attitudes. A total of 17 studies showed significant risk effects for violent extremist attitudes on different radicalisation outcomes. Attitudes towards right-wing motivated violence (Doosje, van den Bos, Loseman, Feddes, & Mann, 2012) as well as being supportive of violence conducted by Muslims were predictive of holding violent intentions across 3 separate studies (Doosje, Loseman, & van Den Bos, 2013; van Bergen et al., 2015) and additionally have been linked to violent extremist attitudes among a sample of Dutch Muslim students (van Bergen et al., 2016). A further 7 studies showed significant effects for violent extremist behaviour. Of those, nationalist extremist, left-wing extremist and religious extremist beliefs (Pauwels & Svensson, 2017) as well as right-wing extremist attitudes (Pauwels & De Waele, 2014; Pauwels & Heylen, 2020) were associated with self-reported extremist behaviour across two different samples of Belgian adolescents and young adults (Schils & Pauwels, 2016). Morgades-Bamba et al. (2019) further highlighted the positive association between radicalised cognitions (acceptability of aggressive behaviour towards individuals of other religions) and previous involvement in violent extremist behaviour among a sample of French female students (Morgades-Bamba, Fuster-Ruizdeapodaca, & Molero, 2019). Additionally, Pauwels and Hardyns (2018) found endorsement of religious, left-wing and nationalist- separatist extremism, e.g., attitudes supportive of the use of violence to achieve political goals, to be predictive of self-reported political violence. Lastly, Jásko et al. (2020) surveyed (1) community members and Liberation Tigers of Tamil Eelam members in Sri Lanka, (2) Moroccan Muslims as well as (3) members of moderate, Islamist and Jihadis organisations in Indonesia. The authors found commitment to nationalist/ separatist and religious extremist ideologies to be a positive predictor of support for ideologically motivated violence across all studies.

The other most commonly significant risk factor can be subsumed under the construct of low self-control. Overall, 17 studies showed significant risk factor effects for low self-control. The concepts of thrill-seeking and risk-taking were positively related to different radicalisation outcomes across 12 studies. More specifically, 9 of those demonstrated a significant positive association between thrill-seeking/ risk-taking and holding violent extremist attitudes within samples of German and Belgian adolescents (Baier, Pfeiffer, Simonson, & Rabold, 2009; Pauwels & Hardyns, 2018; Pauwels & Heylen, 2020) as well as Spanish adults (Schumpe et al., 2020), whereas Baier et al. (2016) found similar effects for



self-reported right-wing extremist behaviour among German school students. In regard to violent extremist intentions, 2 studies based on a large-scale South African nationally representative survey highlighted a positive association with thrill-seeking/ risk-taking (Bartusevičius, van Leeuwen, & Petersen, 2020). Similarly, impulsivity was significantly related to violent extremist intentions (Becker, 2020) and right-wing motivated political violence (Pauwels & De Waele, 2014). Additionally, 3 studies operationalised a combined measure of low self-control. Among those studies, 2 were based on German nationally representative data and demonstrated that low self-control constitutes a risk factor for violent extremist intentions (Rottweiler & Gill, 2020; Rottweiler et al., 2021), while Pauwels and Schils (2016) confirmed a predictive effect for self-reported extremist behaviour within a sample of Belgian adolescents.

Another 6 different analyses are included, which highlighted perceived illegitimacy of authorities as a risk factor. Doosje et al. (2013) found perceived illegitimacy of authorities to be predictive of religious extremist attitudes among Muslim school students in the Netherlands, while Baier et al.'s (2016) analyses demonstrated a positive relationship between police procedural injustice and right-wing extremist attitudes as well as right-wing related extremist behaviour. Perceived illegitimacy of authorities was also significantly related to violent extremist intentions within samples of Italian (Costabile et al., 2020). Additionally, Pauwels and Schils' (2016) analysis showed that low police legitimacy is linked to more political violence. A related construct, legal cynicism, was found to be a significant risk factor across 5 analyses. Nivette, Eisner, and Ribeaud (2017) linked higher levels of legal cynicism to stronger violent extremist attitudes within a sample of Swiss adolescents, while Fuchs (2003) found a significant positive relationship between low law-related morality and violent extremism, which was operationalised with a combined measure of extremist attitudes and behaviours. Two very recent German studies confirmed that legal cynicism represents a risk factor for violent extremist intentions within the German population (Rottweiler & Gill, 2020; Rottweiler et al., 2021).

Experiencing feelings of anomia proved to be another prevalent risk factor for violent extremism. Across 8 studies, anomia exerted significant positive effects on different radicalisation measures. Two German studies confirmed a significant relationship between feelings of anomia and right-wing extremist attitudes (Fuchs, 2003; Zick, Küpper, & Berghan, 2019). A total of 6 surveys based on activist and university student samples, showed that stronger feelings of anomia were linked to increased violent extremist intentions (Mahfud & Adam-Troian, 2019; Troian et al., 2020). Additionally, quest for significance, including

feelings of worthlessness as well as dissatisfaction with and devaluation of one's self, was a significant risk factor across 6 studies. Jásko et al.'s (2020) results linked quest for personal significance to nationalist extremist attitudes among two separate samples, one including Sri Lankan community members, whereas the other one consisted of Liberation Tigers of Tamil Eelam members. Within both samples, experiencing an individual quest for significance was related to an increased acceptance of extremist violence to attain a separate state. Relatedly, loss of significance, such as experiencing personal feelings of humiliation and shame, was positively associated with attitudes supportive of ideological violence among Moroccan Muslims and Sri Lankan former extremists (Jásko et al., 2020; Webber et al., 2018). Fuchs' (2003) analyses also demonstrated a positive relationship between low significance and right-wing attitudes and behaviours among German school students.

Furthermore, authoritarianism depicted a risk factor within 6 studies. Authoritarian attitudes were predictive of extremist attitudes across 4 studies. Two of those tapped into right-wing extremist beliefs within samples of Polish football hooligans (Besta, Szulc, & Jaśkiewicz, 2015) and German school students (Fuchs, 2003), one specifically assessed left-wing extremist beliefs among Polish students (Besta et al., 2015) and another study applied a mixed extremist attitudes scale (Schils & Pauwels, 2016). Right-wing authoritarian beliefs were further linked to self-reported violent extremist behaviour (Fuchs, 2003; Pauwels & De Waele, 2014). Another 4 studies were identified, which found significant risk factor effects for experiencing individual relative deprivation. Three studies linked stronger individual deprivation to more violent extremist attitudes among Swiss and German adolescents (Nivette et al., 2017; Zick et al., 2019) as well as within a sample of Arab and Jewish Israelis (Zaidise, Canetti-Nisim, & Pedahzur, 2007). Relatedly, Doosje et al.'s (2012) findings based on a study of native Dutch school students, highlighted a significant positive association between right-wing extremist beliefs and willingness to engage in violent extremist action.

Depression was another replicated risk factor for violent extremist attitudes. Findings from a survey of Pakistani and Bangladeshi Muslims living in the U.K., demonstrated that depressive symptoms were associated with higher levels of expressing sympathies for violent protest and terrorism (Bhui et al., 2014). Similar findings were found in 3 Canadian studies. Rousseau et al. (2019) found that experiencing depression and anxiety is linked to more support for violent extremism among Canadian college students. These findings were echoed by two additional studies among Canadian students, which found a strong positive relationship between high levels of depression and strong sympathies for violent radicalisation (Miconi, Calcagni, Mekki-Berrada, & Rousseau 2020; Rousseau et al., 2020). Need for closure, which

includes motivations to avoid ambiguity and uncertainty, was another significant risk factor for violent extremist attitudes and intentions across different studies. Need for closure was positively related to violent extremism amongst two samples of imprisoned individuals in the Philippines as well as former extremists in Sri Lanka (Webber et al., 2018). More specifically, the results found that those who held a greater need for closure were significantly more likely to express nationalist/separatist and religious violent attitudes and to show a greater willingness to engage in extremist violence. Relatedly, Gøtzsche-Astrup's (2019) findings from a large-scale study based on  $n = 2317$  U.S. participants, highlighted that experiencing greater uncertainty is linked to increased readiness for engagement in political violence.

Several studies demonstrated significant risk effects for personality-related factors. Of those, extraversion has shown to be predictive of violent extremist intentions. General population studies across the U.S. and Denmark highlighted that higher levels of extraversion were significantly related to stronger intentions to engage in violent extremism (Gøtzsche-Astrup, 2019; Gøtzsche-Astrup, 2020). Another risk factor was the personality trait neuroticism. Individuals who showed higher levels of neuroticism reported an increased readiness to engage in violent extremism (Gøtzsche-Astrup, 2020). Furthermore, narcissism was positively associated with violent extremist attitudes and behaviours. Morgades-Bamba et al.'s (2019) analysis based on an online community sample of young women, found that individuals with narcissistic tendencies were more likely to espouse religious extremist attitudes and were also at greater risk of committing violence toward individuals of other religions. Similar results were found amongst a sample of Dutch adolescents with a migration background (Feddes et al., 2015). These findings were based on a longitudinal evaluation of resilience training, which showed that individuals who reported higher levels of narcissist personality tendencies also held a more positive attitude towards religiously motivated violence. Similarly, further dark personality traits, such as Machiavellianism, sadism and dogmatism were significantly associated with a higher level of acceptance of religiously radicalised behaviours. Dogmatism was additionally linked to support for extremist violence (Morgades-Bamba et al., 2019).

Findings showed that moral disengagement constitutes a risk factor for violent extremism. Moral disengagement refers to neutralisation processes and coping mechanisms, which allow individuals to engage in violence and other non-normative behaviours by providing moral justification for those actions and thus, allow individuals to manage associated negative emotions (i.e., guilt and shame) (Bandura, 1999). Strategies, such as distorting reality and thus rendering illegal acts and violence acceptable behaviours, constitute core parts of

moral disengagement (Bandura, Barbaranelli, Caprara & Pastorelli, 1996; Ribeaud & Eisner, 2010). Ozer and Bertelson (2020) found moral disengagement to be positively related to accepting the use of violence and illegal means in relation to extremist causes amongst Danish and U.S. students. Relatedly, a study from the Zurich Project on the Social Development of Children and Youths (z-proso) showed that Swiss adolescents who reported higher levels of moral neutralisation were significantly more likely to hold violent extremist attitudes (Nivette et al., 2017). Additionally, an experimental study conducted by Bélanger et al. (2019) confirmed the predictive effect of moral justification for violence on support for violent extremism across the general U.S. population. Those individuals who reported greater moral disengagement were more likely to express support for political violence. Thus, the authors stated that moral justification is a key psychological mechanism leading to support for political violence. The same experimental study additionally assessed outgroup dehumanisation as a distinct construct. Bélanger et al. (2019) found support that political violence is positively predicted by the construct of outgroup dehumanisation.

Self-sacrifice has been found to constitute a risk factor for violent extremism. Across 3 different samples, self-sacrifice was positively related to violent extremist attitudes. A Spanish and a Canadian study both demonstrated that individuals reporting higher levels of readiness to self-sacrifice expressed greater support for political violence (Bélanger et al., 2019). These findings were replicated in a Spanish general population survey, which highlighted a strong positive association linking willingness to self-sacrifice to support for violent extremism (Schumpe et al., 2020).

### *Individual-level Protective Factors*

At the individual level, perceived legitimacy towards authorities proved to be a protective factor against different radicalisation outcomes. Gerber et al.'s (2018) analyses confirmed a significant positive relationship between experiencing police legitimacy and reporting less nationalist/ separatist extremist beliefs among Chilean minority members. Perceived government justice was further found to be predictive of holding less religious extremist attitudes within a sample of male Somali immigrants living in the U.S. and Canada (Ellis, Sideridis, Miller, Abdi, & Winer, 2019). Importantly, a study based on native Belgian students highlighted that perceived police legitimacy protected against right-wing motivated violent extremist behaviour (Pauwels & De Waele, 2014). Across two large-scale surveys ( $n = 4697$ ;  $n = 4588$ ) a related construct, adherence to law, was negatively related to right-wing extremist

attitudes as well as right-wing motivated violence among native German school students (Baier et al., 2016).

Several personality factors exerted a protective effect on different types of extremism. For example, two U.S. general population surveys found that openness to experience was a replicated protective factor against holding intentions to engage in violent extremist behaviours (Gøtzsche-Astrup; 2019; Gøtzsche-Astrup, 2020). Multiple studies based on samples of Muslims across Europe and Afghanistan confirmed the protective effects of openness to experience against holding religiously violent extremist intentions (Obaidi et al., 2020). Similarly, higher levels of agreeableness as well as stronger levels of conscientiousness additionally protected against violent extremist intentions (Gøtzsche-Astrup, 2019; Gøtzsche-Astrup, 2020). Furthermore, Feddes et al.'s (2015) longitudinal study found empathy to be protective against espousing positive attitudes toward ideology-based violence. In the cross-sectional model, Muslim adolescents who reported greater empathy held less violent extremist intentions. These findings were replicated in the longitudinal analysis. The results suggest that empathy was significantly related to less positive attitudes toward ideology-based violence over time.

The low levels of depression was further found to constitute a protective factor for violent extremist attitudes. A Canadian repeated cross-sectional survey showed that students who scored lower on the depression scales reported less sympathies for violent extremism. As such, the absence of depression can be interpreted as a protective factor against violent extremist attitudes (Rousseau et al., 2020). Contrary to these findings, across 5 studies high levels of emotionality, such as experiencing high levels of anxiety, fearfulness, and sentimentality, had shown to be protective against violent intentions (Obaidi et al., 2020). Findings above highlighted that individual quest for significance was a significant risk factor for acceptance of separatist/ nationalist extremist violence across a sample of Sri Lankan community members and among Liberation Tigers of Tamil Eelam members. Conversely, individual quest for significance was also found to be protective against support for Islamist violent extremism across 3 different samples, including members of either moderate, Islamist or Jihadist organisations in Indonesia (Jásko et al., 2020).

Contrary to low self-control, high levels of self-control were linked to less religious, right-wing as well as left-wing extremist attitudes (Pauwels & Svensson, 2017). Somewhat surprising was the finding that in 3 German studies, relative individual deprivation (based on one's socio-economic status) was also linked to weaker right-wing extremist attitudes as well as less self-reported violent behaviour (Fuchs, 2003; Baier et al., 2016). Lastly, religiosity was

a replicated protective factor against mixed as well as religious violent extremist beliefs across 4 different studies among Canadian students (Miconi, Oulhote, Hassan, & Rousseau, 2019), Indonesian Muslims (Muluk, Sumaktoyo, & Ruth, 2013), Indonesian Muslims and Christians (Setiawan, Abritaningrum, de Jong, Scheepers, & Sterkens, 2017) as well as amongst Arab and Jewish Israelis (Zaidise et al., 2007).

### *Peer/ Group-level Risk Factors*

In regard to (peer) group influences, the most commonly significant risk factor was threat perceptions based on a group with whom individuals strongly identify with. A total of 13 studies found significant effects for such threat perceptions. Of those, 4 studies showed a positive relationship with extremist attitudes. Doosje et al.'s (2012) analysis based on native Dutch adolescents linked stronger realistic ingroup threat perceptions to more right-wing extremist attitudes. Specific threat perceptions, such as believing in a war between Islam and the West was predictive of stronger violent extremist attitudes among two separate samples of adolescents in Norway, one focusing on Muslim adolescents (Pedersen, Vestel, & Bakken 2018), whereas the other one was a general youth sample (Storm et al., 2020). Obaidi et al.'s (2018b) findings showed that symbolic threat perceptions are positively related to extremist attitudes among Swedish Muslims. The authors further confirmed positive associations between symbolic threats and violent extremist intentions across 6 cross-cultural samples. Additionally, experiencing realistic threats was predictive of an increased willingness to engage in violent extremism across 3 samples, consisting of self-identified Muslims as well as non-Muslims across Europe, Turkey and Afghanistan.

Another widely confirmed risk factor was ingroup superiority. Experiencing ingroup superiority demonstrated multiple significant risk effects on right-wing (Doosje et al., 2012) and religious extremist attitudes (Doosje et al., 2013; Selvanathan & Leidner, 2020; van Bergen et al., 2015; van Bergen et al., 2016). Ingroup superiority was further related to stronger intentions to engage in violent extremism among Dutch adolescents belonging to minority groups (van Bergen et al., 2015; van Bergen et al., 2016). Furthermore, strong group and national identities represented risk factors for violent extremism. Stronger identification with one's group or nation exerted a significant positive effect on right-wing (Zick et al., 2019), mixed (Rousseau et al., 2020) as well as religious extremist beliefs among U.S. Somali immigrants (Ellis et al., 2019) and Indonesian prisoners (Yustisia et al., 2020). Relatedly, strong social identities were linked to more violent extremist intentions across cultures, nations

and religions (Moreira, Rique Neto, Sabucedo, & Camino, 2018; Obaidi, Bergh, Sidanius, & Thomsen, 2018a; Obaidi, Bergh, Akrami, & Anjum, 2019; van Bergen et al., 2015; van Bergen et al., 2016). Relatedly, Ozer et al.'s (2020) findings showed that a stronger social identity increased the risk upon violent extremism across dissimilar contexts and among majority and minority groups (e.g., Muslims and non-Muslims) in India and Denmark. As such, individuals with stronger social identities showed an increased risk of accepting the use of violence in relation to extremism (Ozer, Obaidi, & Pfattheicher, 2020).

Various studies highlighted significant risk factor effects for perceived group injustice. Experiencing group injustice was linked to stronger extremist attitudes across 3 studies (Setiawan, Scheepers, & Sterkens, 2020; Schils & Pauwels, 2016; Yustisia et al., 2020). Studies also confirmed a positive relationship between perceived injustice and strong intentions to become involved in violent extremist action among Muslims in the West and in Muslim-majority countries (Obaidi et al., 2019). Importantly, group injustice further increased the risk for engagement in violent extremism. A related construct, collective relative deprivation, which taps into injustice and discrimination felt on behalf of a group, was further related to holding stronger extremist attitudes amongst Muslim students in India (Tausch et al., 2011), as well Muslim adolescents in the Netherlands (van Bergen et al., 2015). Collective strains also showed a significant positive association with increased support for extremist violence among Swiss adolescents (Nivette et al., 2017). Another similar factor, collective quest for significance, pertaining to feelings of humiliation, worthlessness and shame felt on behalf of a group positively predicted support for violent extremism across 3 studies. Jásko et al. (2020) found that individuals who reported a greater sense of loss of significance showed a significantly higher risk of holding attitudes supportive of violent extremism.

Group-based anger has shown to be another significant risk factor for violent extremism. Across 6 different studies, group-based anger was predictive of religiously motivated violent intentions among various Muslim samples (Obaidi et al., 2018a; Obaidi et al., 2019). Additionally, outgroup hatred was related to more religiously motivated violent extremist beliefs amongst Muslims in Canada (Rip, Vallerand, & Lafrenière, 2012). Tausch et al. (2011) conducted three separate studies, one on German university students, one on Muslim students in India as well another one which was based on Muslims in the U.K. The authors confirmed positive relationships between outgroup contempt and violent extremist intentions across all 3 studies. Lastly, association with extremist peers showed a significant positive effect on extremist attitudes (Bélanger et al., 2020; Pauwels & Heylen, 2020). This was confirmed by a recent German nationally representative study, which found strong effect sizes for the

relationship between extremist peers and violent extremist intentions (Rottweiler et al., 2021). Similarly, exposure to extremist peers was positively related to moral support for right-wing extremism (Baier et al., 2009; Pauwels & De Waele, 2014).

#### *Peer/ Group-level Protective Factors*

Contrary to the findings presented above, 3 studies demonstrated that holding strong group and social identities can also exert protective effects against violent extremist intentions. Ellis et al.'s (2019) study on male Somali immigrants living in the U.S. highlighted that Somali belongingness protected against holding religious extremist beliefs. Similarly, ingroup attachment was negatively related to religious/ ethnic extremist attitudes across a sample of Jewish Israelis (Selvanathan & Leidner, 2020). Furthermore, outgroup contact proved to be a protective factor against right-wing extremist attitudes and violent behaviour among German school students (Fuchs, 2003). This finding was echoed by a very recent study conducted by Stankov et al. (2020), which found that positive outgroup contact between Serbs, which represent the dominant ethnic group, and minority groups of Bosniaks and Albanians, reduced nationalist extremist attitudes (Stankov, Međedović, Lazarević, Petrović, & Knežević, 2020). Yet, a German study showed that frequency of intergroup contact without controlling for the valence of those contacts, increased right-wing extremist attitudes (Zick et al., 2019). Additionally, exposure to prosocial peers was linked to less extremist attitudes across two samples conducted in the U.S. and Spain. In both studies, being affiliated with a moderate law-abiding social network showed protective effects on extremist attitudes (Bélanger et al., 2020).

#### *Family-level Risk Factors*

At the family-level, only 2 different risk factors could be identified. Parental violence was linked to more right-wing extremist attitudes across two studies which surveyed German school students (Baier et al., 2009; Baier et al., 2016). Experiencing financial issues within families was also related to more extremist attitudes among adolescents in Norway (Storm et al., 2020).

#### *Family-level Protective Factors*

At the family-level, appreciative and positive parenting styles depicted protective factors for right-wing extremist attitudes as well as religiously motivated violent intentions among adolescents (Baier et al., 2016; van Bergen et al., 2016). Social integration, a combined factor



capturing family and school bonds, parental monitoring as well as academic orientation also reduced extremist beliefs within a sample of Dutch adolescents (Schils & Pauwels, 2016).

#### *School-level Risk Factors*

The search only identified one single risk factor at the school level (except from the combined measure above, Schils & Pauwels, 2016), which assessed poor academic performance. Baier et al. (2009) found poor school achievement to be positively associated with right-wing extremist attitudes among German school students.

#### *School-level Protective Factors*

Conversely, good school achievement was linked to less right-wing extremist attitudes among a German school sample (Baier et al., 2016). School bonding was a replicated protective effect against extremist attitudes among Norwegian and German school students (Baier et al., 2016; Boehnke et al., 1998; Pedersen et al., 2018).

#### *Environmental (Exposure)-level Risk Factors*

Exposure to violence has shown to be a widely identified risk factor for violent extremist attitudes. Four studies showed a predictive effect of previous exposure to violence and increased extremist attitudes among Canadian (Miconi et al., 2019; Pedersen et al., 2018; Rousseau et al., 2019) and Norwegian (Storm et al., 2020) school and university students. Rousseau et al. (2019) and Miconi et al. (2019) operationalised exposure to violence as (a) witnessing or experiencing acts of violence in relation to a social and/or political context (b) personal experience of persecution and (c) witnessing or experiencing violent events involving people close to individuals. Those who scored higher on the exposure scale were at greater risk of reporting sympathies for violent radicalisation. Ellis et al. (2019) found a significant positive relationship between higher levels of exposure to violence and attitudes in support of political violence. Among a large *n* sample of Belgian adolescents and young adults, active exposure to online extremist settings has further been linked to support for political and religious violence (Schils & Pauwels, 2016). Similarly, exposure to violent media was positively associated with right-wing extremist attitudes within a sample of school students (Baier et al., 2009).

### *Community/ Society-level Risk Factors*

Social alienation was identified as a risk factor situated at the community level. Social alienation refers to a state of estrangement and detachment from society. Across three studies conducted in Pakistan, Spain and Canada, experiencing social alienation was positively linked to support for political violence (Bélanger et al., 2019). Doosje et al. (2013) found perceived distance to other people as well as perceived societal disconnectedness to be significantly associated with violent extremism. More specifically, adolescents who expressed having stronger feelings of being disconnected from society and having a greater sense of distance toward other people, were significantly more likely to have favourable attitudes towards violence committed by other Muslims. Those who reported perceived distance to others were additionally more likely to hold intentions to use violence. Similarly, Cardeli et al.'s (2020) study on Somali refugees in the U.S. and Canada found perceived social disconnection, operationalised as a sense of detachment from one's community, to be a positive predictor for holding violent extremist attitudes (Cardeli, Sideridis, Lincoln, Abdi, & Ellis, 2020). Another community-level risk factor was insecure life attachment pertaining to insufficiently developed life skills divided across various aspects of individuals' sociocultural surroundings. Across three samples, consisting of Danish, Indian and U.S. students, insecure life attachment was significantly related to increased acceptance of violent means (Ozer & Bertelsen, 2019; Ozer, 2020; Ozer et al., 2020).

### *Community/ Societal-level Protective Factors*

Basic attachment to society was a replicated protective factor for violent extremist attitudes as well as intentions at the societal level. Reporting a general connectedness to the Dutch society was found to be protective against religious and ethnic extremism. This was confirmed among 4 different samples of Turkish and Moroccan adolescents living in the Netherlands (van Bergen et al., 2015; van Bergen et al., 2016). Multicultural acquisition is another societal-level protective factor against radicalisation and violent extremism. Multicultural acquisition refers to psychological processes of acculturating to the globalised world and to multicultural exposure. Ozer's (2020) analysis found multicultural acquisition to be negatively and significantly linked to violent extremist intentions among Indian and Danish students. Furthermore, multicultural acquisition mediated the effects of insecure life attachment and violent extremist attitudes. Social cohesion has demonstrated to be another protective factor against violent extremist intentions. Cardeli et al.'s (2020) findings showed that individuals

who experience stronger social cohesion within their Somali refugee communities to be less supportive of violent extremism.

**Table 2.1.** Main results of studies on risk factors for radicalisation and violent extremism.

Factor	Outcome measure	Type of ideology	Study	Effects
<b>Individual Factors</b>				
(Violent) extremist attitudes	Intentions	rw	Doosje et al. (2012)	17
	Intentions	r/e	Doosje et al. (2013)	
	Behaviour	rw	Pauwels and De Waele (2014)	
	Intentions	r/e	van Bergen et al. (2015)	
	Attitudes	r/e	van Bergen et al. (2016)	
	Behaviour	mixed	Schils and Pauwels (2016)	
	Behaviour	rw	Pauwels and Heylen (2020)	
	Behaviour x 3	r/e, lw, n/s	Pauwels and Svensson (2017)	
	Attitudes x 3	r/e, lw, n/s	Pauwels and Hardyns (2018)	
	Behaviour	r/e	Morgades-Bamba et al. (2019)	
Attitudes x 3	n/s, r/e, r/e	Jásko et al. (2020)		
Legal cynicism	Attitudes,	rw, rw	Fuchs (2003)	5
	Behaviour	mixed	Nivette et al. (2017)	
	Attitudes	mixed	Rottweiler et al. (2021)	
	Intentions	mixed	Rottweiler and Gill (2020)	
	Intentions			
Low procedural justice/ perceived illegitimacy of authorities	Intentions	rw	Doosje et al. (2012)	6
	Attitudes	r/e	Doosje et al. (2013)	
	Attitudes,	rw, rw	Baier et al. (2016)	
	Behaviour	mixed	Schils and Pauwels (2016)	
	Behaviour	mixed	Costabile et al. (2020)	
Intentions				
Contempt towards political system	Intentions,	mixed, mixed	Travaglino and Moon (2020)	2
	Intentions			
Perceived oppression	Intentions,	r/e, r/e	Lobato et al. (2018)	3
	Intentions	n/s	Lobato et al. (2020)	
	Intentions			
Conspiracy mentality	Intentions	mixed	Rottweiler and Gill (2020)	1
Retributive justice	Attitudes, Attitudes	r/e, r/e	Selvanathan and Leidner (2020)	2

Observer justice sensitivity	Intentions	mixed	Jahnke et al. (2020)	1
Victim justice sensitivity	Attitudes, Attitudes	mixed, mixed	Jahnke et al. (2020)	2
Individual relative deprivation	Attitudes	r/e	Zaidise et al. (2007)	4
	Intentions	rw	Doosje et al. (2012)	
	Attitudes	mixed	Nivette et al. (2017)	
	Attitudes	rw	Zick et al. (2019)	
Individual objective deprivation	Attitudes	r/e	Zaidise et al. (2007)	1
Low self-control	Behaviour	mixed	Schils and Pauwels (2016)	3
	Intentions	mixed	Rottweiler and Gill (2020)	
	Intentions	mixed	Rottweiler et al. (2021)	
Thrill-seeking	Attitudes	rw	Baier et al. (2009)	8
	Attitudes	rw	Pauwels and Heylen (2020)	
	Attitudes, Attitudes	r/e, n/s	Pauwels and Hardyns (2018)	
	Attitudes x 4	mixed x 4	Schumpe et al. (2020)	
Impulsivity	Behaviour	rw	Pauwels and De Waele (2014)	2
	Intentions	mixed	Becker (2020)	
Risk-taking	Attitudes, Behaviour	rw, rw	Baier et al. (2016)	4
	Intentions, Intentions	mixed, mixed	Bartusevičius et al. (2020)	
Conduct problems	Attitudes	mixed	Pedersen et al. (2018)	1
Delinquent drift	Attitudes	rw	Boehnke et al. (1998)	1
Criminal conviction	Attitudes	r/e	Bhui et al. (2019)	1
Uncertainty/ Need for closure	Attitudes, Attitudes	r/e, r/e	Webber et al. (2018)	3
	Intentions	mixed	Gøtzsche-Astrup (2019)	
Low sense of self-worth	Attitudes, Behaviour	rw	Fuchs (2003)	2
Low significance (quest for significance)	Attitudes, Behaviour	rw, rw	Fuchs (2003)	6
	Attitudes, Attitudes	r/e, r/e	Webber et al. (2018)	
	Attitudes, Attitudes	r/e, r/e	Jásko et al. (2020)	
	Attitudes, Attitudes			

Deficient life skills	Attitudes	mixed	Ozer and Bertelsen (2019)	1
Anomia	Attitudes Attitudes Intentions, Intentions Intentions x 4	rw rw mixed, mixed mixed x 4	Fuchs (2003) Zick et al. (2019) Mahfud and Troian (2019) Troian et al. (2020)	8
Political powerlessness	Attitudes Attitudes	mixed rw	Schils and Pauwels (2016) Zick et al. (2019)	2
Anomic aspirations	Attitudes	rw	Boehnke et al. (1998)	1
PTSD	Attitudes Attitudes	r/e r/e	Ellis et al. (2015) Bhui et al. (2019)	2
Depression	Attitudes Attitudes Attitudes Attitudes	r/e mixed mixed mixed	Bhui et al. (2014) Rousseau et al. (2019) Miconi et al. (2019) Rousseau et al. (2020)	4
Anxiety	Attitudes	r/e	Bhui et al. (2019)	1
Extraversion	Intentions Intentions x 2	mixed mixed, mixed	Gøtzsche-Astrup (2019) Gøtzsche-Astrup (2020)	3
Neuroticism	Intentions x 2	mixed, mixed	Gøtzsche-Astrup (2020)	2
Narcissism	Attitudes, Behaviour Attitudes	r/e, r/e r/e	Morgades-Bamba et al. (2019) Feddes et al. (2015)	3
Machiavellianism	Attitudes	r/e	Morgades-Bamba et al. (2019)	1
Sadism	Attitudes	r/e	Morgades-Bamba et al. (2019)	1
Dogmatism	Attitudes, Behaviour	r/e, r/e	Morgades-Bamba et al. (2019)	2
Personal superiority	Attitudes	r/w	Pauwels and Heylen (2020)	1
Authoritarianism	Attitudes, Behaviour Attitudes, Attitudes Behaviour Behaviour	rw, rw rw, lw rw mixed	Fuchs (2003) Besta et al. (2015) Pauwels and DeWaele (2014) Schils and Pauwels (2016)	6

Social dominance orientation	Attitudes Intentions	rw, lw mixed	Besta et al. (2015) Bartusevičius et al. (2020)	2
Social darwinism	Attitudes	rw	Zick et al. (2019)	1
Power distance	Intentions x 2	mixed x 2	Travaglino and Moon (2020)	2
Moral justification for violence/ disengagement, dehumanisation	Attitudes, Attitudes Attitudes, Attitudes	mixed, mixed mixed, mixed	Bélanger et al. (2019a) Ozer and Bertelsen (2020)	4
Moral neutralisation	Attitudes	mixed	Nivette et al. (2017)	1
Self-sacrifice	Attitudes Attitudes x 2	mixed mixed, mixed	Schumpe et al. (2020) Bélanger et al. (2019)	3
Fundamentalism	Attitudes	r/e	Muluk et al. (2013)	1
Religiocentrism	Attitudes	r/e	Setiawan et al. (2017)	1
Support for Islamic law	Attitudes	r/e	Muluk et al. (2013)	1
Belief in violent jihad	Intentions	r/e	Muluk et al. (2013)	1
Religious importance	Attitudes x 2 Attitudes	r/e, r/e r/e	Bhui et al. (2014) Setiawan et al. (2020)	3
Religious conversion	Intentions	r/e	Fodeman et al. (2020)	1

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### Family Factors

Parental violence	Attitudes	rw	Baier et al. (2009)	2
	Attitudes	rw	Baier et al. (2016)	
Family financial issues	Attitudes	mixed	Storm et al. (2020)	1
Poor academic performance	Attitudes	rw	Baier et al. (2009)	1

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### Peer/ Group Factors

Extremist peers	Attitudes	rw	Pauwels and Heylen (2020)	3
	Attitudes	mixed	Bélanger et al. (2020)	
	Intentions	mixed	Rottweiler et al. (2021)	

Delinquent peers	Attitudes	rw	Baier et al. (2009)	2
	Behaviour	rw	Pauwels and DeWaele (2014)	
Group/ national identity	Attitudes x 2	r/e, r/e	van Bergen et al. (2015)	13
	Attitudes	r/e	van Bergen et al. (2016)	
	Intentions x 2	mixed, mixed	Obaidi et al. (2018a)	
	Intentions	mixed	Moreira et al. (2018)	
	Attitudes	r/e	Ellis et al. (2019)	
	Attitudes	r/w	Zick et al. (2019)	
	Intentions	mixed	Obaidi et al. (2019)	
	Attitudes	mixed	Rousseau et al. (2020)	
	Attitudes	r/e	Yustisia et al. (2020)	
	Attitudes x 2	mixed, mixed	Ozer et al. (2020)	
Ethnocentrism	Attitudes	rw	Pauwels and Heylen (2020)	1
Ethnic protection	Attitudes	mixed	Ozer (2020)	1
Activist identity/ commitment	Intentions, Intentions	mixed, mixed	Moreira et al. (2018)	2
Extremist organisational membership	Behaviour	r/e	Hirsch-Hoefler et al. (2016)	1
Ingroup superiority	Attitudes, Intentions	rw, rw	Doosje et al. (2012)	11
	Attitudes	r/e	Doosje et al. (2013)	
	Attitudes, Intentions	r/e, r/e	van Bergen et al. (2015)	
	Attitudes, Intentions	r/e, r/e	van Bergen et al. (2016)	
	Attitudes x 4	r/e x 4	Selvanathan and Leidner (2020)	
Intergroup contact (frequency)	Attitudes	rw	Zick et al. (2019)	2
	Attitudes	n/s	Stankov et al. (2020)	
Collective efficacy	Attitudes, Attitudes	r/e, r/e	Setiawan et al. (2020)	2
Collective quest for significance	Attitudes x 3	n/s, r/e, r/e	Jásko et al. (2020)	3
Collective narcissism	Attitudes	mixed	Bélangier et al. (2019)	2
	Attitudes	r/e	Issa (2019)	
Collective relative deprivation	Attitudes	r/e	Tausch et al. (2011)	4
	Attitudes, Intentions	r/e, r/e	van Bergen et al. (2015)	
	Attitudes	mixed	Nivette et al. (2017)	

Perceived injustice	Behaviour Attitudes Attitudes Attitudes Intentions x 3	rw mixed r/e r/e r/e x 3	Pauwels and De Waele (2014) Schils and Pauwels (2016) Setiawan et al. (2020) Yustisia et al. (2020) Obaidi et al. (2019)	7
Group-based anger	Intentions x 2 Intentions x 4	r/e, r/e r/e x 4	Obaidi et al. (2018a) Obaidi et al. (2019)	6
Outgroup hatred	Intentions, Attitudes Attitudes Attitudes	mixed, r/e, r/e  r/e	Tausch et al. (2011)  Rip et al. (2012)	4
Threat perceptions	Attitudes Attitudes Attitudes Attitudes, Intentions x 9	rw mixed mixed mixed, r/e x 9	Doosje et al. (2012) Storm et al. (2020) Pedersen et al. (2018) Obaidi et al. (2018b)	13
Identity fusion	Intentions x 2	n/s, n/s	Lobato et al. (2020)	2

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### Environmental Factors

Exposure to violence	Attitudes Attitudes Attitudes Attitudes Attitudes	mixed mixed r/e mixed mixed	Storm et al. (2020) Pedersen et al. (2018) Ellis et al. (2019) Rousseau et al. (2019) Miconi et al. (2019)	5
Exposure to violent media	Attitudes	rw	Baier et al. (2009)	1
Active exposure online extremist settings	Behaviour	mixed	Schils and Pauwels (2016)	1
Political opinion expressed online	Attitudes	mixed	Pedersen et al. (2018)	1
Online social comfort	Attitudes	r/e	Ellis et al. (2019)	1

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### Community/ Societal Factors

Social alienation	Attitudes x 2, Intentions x 2 Attitudes x 3 Intentions	r/e x 2 r/e x 2 mixed x 3 r/e	Doosje et al. (2013) Doosje et al. (2013) Bélanger et al. (2019) Cardeli et al. (2020)	8
Social vulnerability	Behaviour	rw	Pauwels and De Waele (2014)	1



Insecure life attachment	Attitudes	mixed	Ozer and Bertelsen (2019)	4
	Attitudes	mixed	Ozer (2020)	
	Attitudes, Attitudes	mixed, mixed	Ozer et al. (2020)	
Fears about globalisation	Attitudes	rw	Zick et al. (2019)	1

*Note.* *Attitudes* - violent extremist attitudes, *intentions* - intentions to engage in violent extremist behaviour, *behaviour* – self-reported violent extremist behaviour. PDST: Posttraumatic stress disorder.

**Table 2.2.** Main results of studies on protective factors against radicalisation and violent extremism.

Factor	Outcome measure	Type of ideology	Study	Effects
<b>Personal Factors</b>				
Perceived legitimacy, justice authorities	Behaviour	rw	Pauwels and DeWaele (2014)	4
	Attitudes,	n/ s, n/s	Gerber et al. (2018)	
	Attitudes	r/e	Ellis et al. (2019)	
	Attitudes			
Perceived personal justice	Attitudes	rw	Zick et al. (2019)	1
Adherence to law	Attitudes, Behaviour	rw, rw	Baier et al. (2016)	2
Restorative justice	Attitudes, Attitudes	r/e, r/e	Selvanathan and Leidner (2020)	2
Victim justice sensitivity	Intentions	mixed	Jahnke et al. (2020)	1
Observer justice sensitivity	Attitudes, Attitudes	mixed x 2	Jahnke et al. (2020)	2
Normative political and social action	Attitudes x 3	r/e x 3	Bhui et al. (2016)	3
High self-control	Behaviour x 3	r/e, rw, lw	Pauwels and Svensson (2017)	3
Coping skills	Attitudes	mixed	Nivette et al. (2017)	1

Positive future orientation	Attitudes	mixed	Miconi et al. (2019)	1
Empathy	Attitudes	r/e	Feddes et al. (2015)	1
Emotionality	Intentions x 5	r/e x 5	Obaidi et al. (2020)	5
Openness	Intentions Intentions Intentions x 5	mixed mixed r/e x 5	Gøtzsche-Astrup (2019) Gøtzsche-Astrup (2020) Obaidi et al. (2020)	7
Agreeableness	Intentions Intentions x 2	mixed mixed x 2	Gøtzsche-Astrup (2019) Gøtzsche-Astrup (2020)	3
Conscientiousness	Intentions Intentions x 2	mixed mixed x 2	Gøtzsche-Astrup (2019) Gøtzsche-Astrup (2020)	3
Reflective decision making	Intentions x 2	mixed x 2	Becker (2020)	2
Personality (high intelligence/ imagination, high extraversion, low agreeability)	Attitudes	r/e	Trip et al. (2019)	1
Authoritarianism	Intentions	mixed	Bartusevičius et al. (2020)	1
Quest for significance	Attitudes	r/e	Jásko et al. (2020)	1
Relative individual deprivation	Attitudes, Behaviour Attitudes	rw, rw rw	Fuchs (2003) Baier et al. (2016)	3
Religiosity	Attitudes Attitudes Attitudes Attitudes	r/e r/e mixed r/e	Zaidise et al. (2007) Muluk et al. (2013) Miconi et al. (2019) Setiawan et al. (2017)	4
Peaceful religious activism	Attitudes	r/e	Rip et al. (2012)	1
Fundamentalism	Attitudes	r/e	Setiawan et al. (2017)	1
Threatening life events	Attitudes	r/e	Bhui et al. (2016)	1
<b>Family Factors</b>				
Appreciative parenting style	Attitudes Intentions	rw r/e	Baier et al. (2016) van Bergen et al. (2016)	2

Social integration	Attitudes	mixed	Schils and Pauwels (2016)	1
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### School Factors

School bonds	Attitudes	rw	Baier et al. (2016)	1
School achievement	Attitudes, Behaviour Attitudes Attitudes	rw, rw rw mixed	Baier et al. (2016) Boehnke et al. (1998) Pedersen et al. (2018)	4

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### Peer/ Group Factors and Community Factors

Social/ national Identity	Attitudes Attitudes	r/e r/e	Ellis et al. (2019) Selvanathan and Leidner (2020)	2
Collective quest for significance	Attitudes	r/e	Jásko et al. (2020)	1
Group efficacy	Intentions	mixed	Tausch et al. (2011)	1
Prosocial peers	Attitudes x 2	mixed x 2	Bélanger et al. (2020)	2
More social contacts	Attitudes	r/e	Bhui et al. (2014)	1
Less social capital	Attitudes	r/e	Bhui et al. (2014)	1
Outgroup contact	Attitudes, Behaviour	rw, rw	Fuchs (2003)	2
Positive outgroup contact	Attitudes	n/s	Stankov et al. (2020)	1

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### Community/ Societal level

Basic attachment to society	Attitudes, Intentions Attitudes	r/e, r/e r/e	van Bergen et al. (2015) van Bergen et al. (2016)	3
Multicultural acquisition	Attitudes	mixed	Ozer (2020)	1
Social cohesion	Attitudes	r/e	Cardeli et al. (2020)	1

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*Note.* *Attitudes* - violent extremist attitudes, *intentions* - intentions to engage in violent extremist behaviour, *behaviour* – self-reported violent extremist behaviour. Social integration: family/ school bonds, parental monitoring, academic orientation.

## 2.4 Discussion

The present study provided an (1) overview of the different psychometric scales utilised within quantitative studies assessing different outcomes of radicalisation and (2) a combined systematic review on the risk and protective factors for violent extremist attitudes, intentions and behaviour, which were established through quantitative and inferential data analysis, was conducted. The majority of the identified factors were *risk* factors for violent extremist attitudes, followed by intentions and behaviours. Yet, the review also found a range of factors that exerted a protective function against radicalisation and violent extremism. Notably, there is a considerable overlap of particular risk factors for radicalisation found in this study and findings reported in studies on risk effects for interpersonal violence, which suggests that similar underlying mechanisms must exist for both outcomes (Bowes & McMurrin, 2013; Walters & Bolger, 2019). Similarly, the results highlight that many factors which protect against various forms of youth violence and criminality exert remarkably similar effects upon extremist attitudes, intentions and behaviours (Lösel & Bender, 2016; Lösel & Farrington, 2012).

Most of the present findings can be organised within a risk-protective factor paradigm with competing roles of risk and protective factors (Lilly et al., 1995; Akers & Sellers, 2004). Thus, psychological and social environmental processes pertaining to risk and protective factors for violent extremism should be investigated through theoretically integrated frameworks (Mandel, 2009; Webber & Kruglanski, 2018). The present findings on violent extremist attitudes, intentions and behaviour find empirical support for existing theoretical frameworks applied within criminological research on violence and offending. In line with the broader literature on interpersonal violence and delinquency (Lösel & Farrington, 2012), the findings emphasise the fundamental role of psychological and criminological processes that underlie violent extremist propensity development. These findings lend support to the idea that similar developmental mechanisms and pathways may be associated with both, general violent and criminal behaviour and radicalisation processes. Given that violent extremism, like other types of criminal behaviour, is a breach of rules of conduct stated in law (Wikström & Bouhana, 2011), these similarities might not be surprising (LaFree, Jensen, James, & Safer-Lichtenstein, 2018). The most frequent criminogenic risk and protective factors identified in this review generally fit within empirically supported criminological theories, such as control theory (Hirschi, 1969), procedural justice theory (Tyler, 2006), social learning theory (Akers & Jensen, 2011) and self-control theory (Gottfredson & Hirschi, 1990).

Moreover, various risk and protective factors closely resemble research findings on intergroup relations, such as collective action and intergroup emotions. Thus, social psychological frameworks may help to better understand radicalisation processes. The social psychological risk and protective factors of this review fit within well-established and empirically supported theories, including social identity theory (Tajfel & Turner 1979), integrated threat theory (Stephan & Stephan, 2000), intergroup contact theory (Pettigrew, 1998) and relative deprivation theory (Walker & Pettigrew, 1984). Additionally, personality research as well as the psychological concepts of moral disengagement and moral neutralisation provide further frameworks to organise the current findings. Notably, research on violent extremism is in need of more systematic research and thus, should more strongly integrate findings and frameworks from neighbouring problem areas. In the following, the findings of the systematic review are discussed by drawing on references and by making comparisons to findings on criminal behaviour, interpersonal violence, and (violent) collective action which are premised on the above-mentioned frameworks.

#### *Individual-level Risk and Protective Factors*

The finding that extremist attitudes constitute widely prevalent risk factors for different radicalisation outcomes (e.g., Morgades-Bamba et al., 2019) parallels criminological findings which found that criminal attitudes are among the strongest risk factors for criminal behaviours (Bowes & McMurrin, 2013). Furthermore, low self-control was another major risk factor identified within this systematic review. Multiple studies found significant risk effects for high levels of thrill-seeking, impulsivity and risk-taking (e.g., Rottweiler et al., 2021). Similarly, numerous studies within interpersonal violence and offending research found self-control to be one of the most salient predictors for criminal involvement and violence (Finkel, DeWall, Slotter, Oaten, & Foshee, 2009; Lipsey & Derzon, 1998; for meta-analysis see Pratt & Cullen, 2000). On the contrary, a high capacity to execute self-control was a significant protective factor against different radicalisation outcomes. This is in line with findings, which demonstrate that high self-control can buffer against the adverse effects of risk factors and thus lessens the risk of criminal and violent behaviour (e.g., Farrington, 1994; Lösel & Bender, 2017; Lösel & Bliesner, 1994).

Further frequent risk factors were perceived illegitimacy of authorities (e.g., Costabile et al., 2020) and legal cynicism (e.g., Nivette et al., 2017). Attitudes towards authorities and the law are crucial in determining whether individuals obey the law and follow rules or whether

they break them (Kirk & Matsueda, 2011; see Tyler, 2006 for a review). Legal cynicism is a mechanism that denies the bindingness and legitimacy of the law and which leads to the disengagement from internal obligations to comply with rules or the law (Sampson & Bartusch, 1998). Legal cynicism may emerge due to alienation from social institutions and negative experiences with authorities (Nivette et al., 2017). Numerous studies have repeatedly linked legal cynicism and a high risk for criminal offending (Reisig, Wolfe, & Holtfreter, 2011; Kirk & Papachristos, 2011) as well as lower desistance from intimate partner violence (Emery, Jolley, & Wu, 2011). At the same time, the current review identified protective functions of perceived legitimacy towards authorities and adherence to law across several analyses (e.g., Pauwels & De Waele, 2014). The protective effects of holding a basic acceptance of society's rules and laws as well as a legitimacy towards authorities are consistent with findings within procedural justice theory and more general theories on legitimacy of formal social control (e.g., Tyler, 2006). Relatedly, general accepting attitudes towards government legitimacy and the law have been shown to be among the most salient protective factors for violence and criminality (Walters & Bolger, 2019).

Dark-personality traits, such as narcissism (e.g., Feddes et al., 2015), Machiavellianism and sadism (Morgades-Bamba et al., 2019) were identified as significant risk factors for violent extremist attitudes and self-reported behaviour within this review. This is in accordance with personality research studying violence. Numerous studies have examined the relationship between narcissism and interpersonal violence suggesting narcissism is significantly related to increased aggression and violent behaviour (for a meta-analysis see Lambe, Hamilton-Giachritsis, Garner, & Walker, 2016). Relatedly, sadism has been positively related to male sexual aggression (Russell & King, 2016) and Machiavellianism was associated with self-reported violent behaviour (Pailing, Boon, & Egan, 2014). Further personality-related risk factors, such as extraversion (Jones, van den Bree, Zammit, & Taylor, 2020) and neuroticism, due to defensive and emotional reactions (Egan, 2009), are predictive of violent behaviour. In addition, moral disengagement was significantly associated with support for extremist violence (e.g., Nivette et al., 2017). There is substantial empirical evidence which confirms the positive relationship between moral disengagement and criminal as well as violent behaviour (Fritsche, 2005; Ribeaud & Eisner, 2015).

In contrast, multiple studies have found that positive personality traits, such as openness to experience, agreeableness and conscientiousness are significant negative predictors, rendering them replicated protective factors against violent extremist attitudes and intentions (Gøtzsche-Astrup, 2020). These findings are in accordance with previous research on

personality and political protest behaviour, which found that people high in openness were more likely to engage in non-violent forms of political action, thus suggesting that openness to experience and political violence are negatively correlated (Gallego & Oberski, 2012). Relatedly, socio-psychological research argues that intolerance of ambiguity and closed mindedness, factors which have shown to be closely linked to low openness, foster extreme political behaviour (Kruglanski, 2013; Onraet, Van Hiel, Roets, & Cornelis, 2011).

Low agreeableness has been a widely confirmed risk factor for violence (e.g., Varley Thornton, Graham-Kevan, & Archer, 2010). For instance, a study on intimate partner violence confirmed a strong positive relationship between low agreeableness and physical abuse (Carton & Egan, 2017) and low agreeableness was the sole predictor of violence, when other dark personality traits were simultaneously estimated (Pailing, Boon, & Egan, 2014). At the same time, the study found that high agreeableness emerged as the strongest negative predictor of violence (Ibid). Further research in political psychology has shown that agreeableness is linked to more involvement in normative rather than non-normative collective action (Gallego & Oberski, 2012; Ha, Kim, & Jo, 2013). Similarly, higher conscientiousness has been linked to more normative political behaviour (Gallego & Oberski, 2012). Furthermore, the present review found that higher levels of empathy proved to be a protective factor against violent extremist attitudes (Feddes et al. 2015). This is in accordance with research on intergroup relations, which found that empathy is related to more prosocial and less aggressive behaviour and thus, may improve intergroup relations (Galinsky & Moskowitz, 2000). Research on anti-social behaviour found that low empathy was positively related to violent bullying (Jolliffe & Farrington, 2006). Higher levels of empathy have further been shown to exert protective effects against a range of violent crimes, such as dating violence (McCloskey & Lichter, 2003) and sexual violence (Hudson-Flege, Grover, Meçe, Ramos, & Thompson, 2020).

This chapter's analysis identified several studies which found that experiencing higher levels of depression increases the risk for exhibiting violent extremist attitudes (e.g., Bhui et al., 2019). Relatedly, the absence of depression and anxiety protected against holding sympathies for violent extremism (Rousseau et al., 2019). A longitudinal study conducted in Sweden found that depressive symptoms were related to an increased risk for violent crime (Fazel et al., 2015), yet other studies found inconsistent results (e.g., Elbogen & Johnson, 2009). Conversely, the systematic review also identified a study, which found that high emotionality (experiencing high levels of anxiety, fearfulness, and sentimentality) is linked to less intentions to engage in violent extremism (Obaidi et al., 2020). This is similar to research on interpersonal violence which has suggested that anxiety exerts protective effects against

deviant and violent behaviour (Loeber, Farrington, Stouthamer-Loeber, & White, 2008; Schwartz, Snidman, & Kagan, 1996). Due to being linked to higher physiological arousal, anxiety may buffer against risky and thrill-seeking behaviour (Raine, 2013). Relatedly, factors associated with developing an attitudinal affinity with a cause (e.g., radicalisation) may be distinct from intentions to engage in violence or actual involvement on behalf of that cause (e.g., terrorism). For example, Corner and Gill (2015) found that lone actor terrorists exhibited lower rates of depression than the general population. As such, experiencing depression might increase the risk for adopting extremist beliefs, yet it may inhibit the willingness to engage in violent extremism and thus, reduces the risk for extremist violence.

### *Peer/ group-level Risk and Protective Factors*

At the group-level, the majority of risk factors within this study, such as: threat perceptions (e.g., Obaidi, 2018b), ingroup superiority (e.g., Doosje et al., 2012), strong social/ group identity (e.g., Rousseau et al., 2020), collective relative deprivation/ collective quest for significance (e.g., Jásko et al., 2020; Pauwels & De Waele, 2014) and outgroup anger (e.g., Obaidi et al., 2019) were based on theoretical foundations within social psychology and were markedly similar to previous empirical findings addressing intergroup conflict and collective violence. For instance, social identity theory (Tajfel & Turner, 1979) posits that individuals derive parts of their self-concept from their membership in groups and accordingly, they consider ingroup identification as a key part in understanding engagement in (violent) collective action on behalf of a group (e.g., van Zomeren, Postmes, & Spears, 2008). Within a South African nationally representative sample, strong group identity has shown to be positively related to perceptions of ingroup superiority, which in turn, has been significantly associated with support for violent ingroup defence (Claassen, 2016). Additionally, stronger ingroup identification has shown to increase threat perceptions towards outgroups (Doosje, Spears, & Ellemers, 2002; Riek, Mania, & Gaertner, 2006). Relatedly, integrated threat theory (Stephan, Ybarra, & Morrison, 2009) is a prominent theory within research on collective action. Perceived outgroup threat perceptions have shown to be positively related to outgroup hostility and aggression among Turkish and Kurdish individuals living in Turkey (Çakal, Hewstone, Güler, & Heath, 2016).

Relative deprivation theory suggests that individuals may engage in (violent) collective action as a result of perceived injustice, deprivation or disadvantage on behalf of a group (Walker & Smith, 2002). The systematic review identified several studies which found



perceived group-based injustice and group deprivation to be significant risk factors for different radicalisation outcomes (e.g., Yustisia et al., 2020). These findings are closely related to two similar constructs, group-anger and outgroup hatred which were also significantly linked to violent extremist attitudes and intentions within this study (e.g., Obaidi et al., 2018a; Tausch et al., 2011). Social psychological research has linked collective action and group-based emotions. Intergroup emotions theory posits that when individuals experience heightened group identification, they may feel strong emotions on behalf of a group. As a result, group-based injustice appraisals can elicit intergroup emotional and behavioural responses, such as anger, which may in turn lead to increased aggression and violence (Mackie, Devos, & Smith, 2000; Smith & Mackie, 2015). Several experimental studies have found that higher levels of group identification induce negative group-based emotions (i.e., outgroup hatred, anger), which were associated with an increased willingness to engage in (violent) collective action amongst Dutch university students (van Zomeren, Spears, Fischer, & Leach, 2004). In contrast, stronger ingroup attachment and belongingness exerted protective effects on violent extremist beliefs among Somali refugees and Jewish Israelis (Ellis et al., 2019; Selvanathan & Leidner, 2020). These findings support the notion that specific cultural framing conditions play a crucial role in regard to the meaning and impact of specific factors across different contexts (Lösel et al., 2018).

Outgroup contact protected against right-wing extremist attitudes and behaviour within the present review (Fuchs, 2003). Across numerous intergroup relation studies, intergroup contact reduced prejudice and hostility towards outgroups and thus has shown to improve intergroup relations (Brown & Hewstone, 2005; for a large-scale meta-analysis see Pettigrew & Tropp, 2008). More specifically, Stankov et al. (2020) found that the valence of outgroup contact, but not the frequency of such contact, reduced the risk of espousing militant extremist beliefs (also see Zick et al., 2019). These findings are in line with a large-scale study ( $n = 7042$ ) across eight European countries, whereby positive intergroup contact was indirectly associated with reduced aggressive action tendencies towards outgroups by reducing perceived intergroup threats (Schmid, Hewstone, Küpper, Zick, & Tausch, 2014).

The present study further found association with extremist and deviant peers to be predictive of violent extremist attitudes, intentions and self-reported behaviour (e.g., Rottweiler et al., 2021). This is consistent with criminological research whereby differential association marks one of the most replicated and strongest predictors of offending (e.g., Herrenkohl et al., 2000; Pratt et al., 2010). The role of deviant peers is particularly prominent within social learning theories (Akers & Jennings, 2016; Warr, 2002), but also draws on routine

activities/ lifestyle theory (Laub & Sampson, 2003). Social learning theories suggest that criminal behaviour is a learned behaviour, acquired through the same socialisation processes as normative and prosocial norms and behaviours (Akers & Jennings, 2016). Social interactional and cognitive mechanisms of social learning within extremist and criminal peer groups can provide norms and values supportive of political violence and criminality, thus reinforcing violence and criminal behaviour (Bandura, 1990a; Pauwels & Heylen, 2020). On the contrary, exposure to pro-social peers demonstrated a protective effect against violent extremist attitudes (Bélanger et al., 2020). Again, this aligns with criminological research, which found non-deviant peers to exert direct protective as well as buffering protective functions against delinquency and violence (Loeber et al., 2008; Lösel & Farrington, 2012).

#### *Family-level Risk and Protective Factors*

At the family level, parental violence represented a risk factor for violent extremist attitudes (e.g., Baier et al., 2016). This is similar to research on interpersonal violence, whereby longitudinal studies have found that children's exposure to domestic violence has adverse effects on antisocial and violent behaviour during adolescence and in latter stages of life (Ehrensaft et al., 2003; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008; Sousa et al., 2011). Conversely, positive parenting protected against violent extremist attitudes and intentions (e.g., van Bergen et al., 2016). Parental monitoring and attachment further seem to lessen the risk of developing extremist attitudes and engagement in extremist behaviours (Schils & Pauwels, 2016). This echoes findings on the protective effects of emotionally positive parent-child relationships, secure bonding and intensive supervision in other fields of youth violence (Lösel & Bender, 2017; Lösel & Farrington, 2012). Stronger bonds of attachment to parents emerged as a direct protective factor in child development, such as promoting nonviolence (Stouthamer-Loeber et al., 1993), and has exerted buffering protective effects by reducing a wide range of behaviour problems in the presence of risk factors among adolescents (Greenberg, Speltz, & DeKlyen, 1993; Osborn, 1990).

#### *School-level Risk and Protective Factors*

The analysis only found one significant risk factor at the school level, which was poor academic performance (Baier et al., 2009). Conversely, bonding to school and good school achievement were protective factors against violent extremist attitudes and self-reported behaviour (e.g., Pedersen et al., 2018). These findings are consistent with research within criminology, whereby

stronger school bonds and better school performance have shown to protect and buffer against criminal involvement and interpersonal violence (Herrenkohl, Tajima, Whitney, & Huang, 2005; Lösel & Bender, 2017). Relatedly, good school performance indicates higher levels of intelligence, which has further demonstrated to constitute a more general protective factor against criminal and violent behaviour (Ttofi et al., 2016a).

### *Community- level Risk and Protective Factors*

Exposure to violence was a further significant risk factor for violent extremism (e.g., Rousseau et al., 2019). Similarly, exposure to community violence is one of the most salient predictors of engagement in violent and criminal behaviour (Baskin & Sommers, 2014; Gaylord-Harden et al. 2011; Mulford et al., 2018). Furthermore, similar to the risk effects of exposure to deviant peers on offending and violent behaviour (Hawkins, Herrenkohl, & Farrington, 1998; Mowen & Boman, 2018), active exposure to online extremist settings was further identified as a risk factor for self-reported violent extremist behaviour (Schils & Pauwels, 2016). Both, exposure to violence and exposure to online extremism can be explained from a social learning perspective whereby exposure to violent and extremist environments enable the transmission of violent extremist norms and values through mechanisms of social learning (Pauwels & Schils, 2016).

Another prevalent risk factor for various radicalisation outcomes was experiencing feelings of social alienation, denoting a sense of disillusionment and detachment from society and a form of significance loss (Bélanger et al., 2019). Within this study, social alienation, such as reporting perceived distance from other people (Doosje et al., 2013) and societal disconnectedness (e.g., Cardeli et al., 2020), were related to increased support for and intentions to engage in extremist violence. This is in accordance with findings on youth violence which emphasise that feelings of social disconnection are significantly associated with delinquency and violence (Le & Stockdale, 2008). Conversely, the results showed that a basic attachment and connectedness to society is a protective factor against radicalisation. This is consistent with social-control theory (Hirschi, 1969). Control theories highlight the importance of social integration, which manifests itself as social bonds between individuals and society, operationalised as bonds with parents as well as social institutions, such as teachers and commitment to school. Criminological frameworks on informal social control and social bonding highlight regulatory effects of strong social bonds on various types of lawbreaking behaviour (Laub & Sampson, 2003). They emphasise the fundamental role of social bonds for

preventing violence by conveying prosocial norms and related expectations as well as by providing motivations and mechanisms, such as executing informal social control to abide by these norms (Sampson, Raudenbush, & Earls, 1997).

A closely related construct, social cohesion, further showed a protective function against violent extremist attitudes among Somali refugees (Cardeli et al., 2020). This suggests that levels of social cohesion and integration are crucial in protecting against support of extremist violence and shows how such factors can create strong bonds between individuals and communities. Relatedly, research demonstrates that community factors, such as social disorganisation, low informal social control and low social cohesion can exert strong risk effects on juvenile violence (Gorman-Smith & Tolan, 1998; Wikström & Loeber, 2000). On the contrary, social trust and social cohesion constitute key factors which promote nonviolence and prosocial behaviours across various cultural contexts (e.g., Lösel & Farrington, 2004; Sampson & Wikström, 2008). Furthermore, insecure life attachment, which captures individuals' experiences of not being securely and meaningfully embedded within their sociocultural context, has been positively linked to violent extremist attitudes (e.g., Ozer, 2020). Insecure life attachment is theoretically linked to experiences of cognitive uncertainty and increased threat perceptions (Ibid). As such, individuals will seek to restore secure life attachment, which goes along with a resentment towards new cultural influences and a low openness towards intercultural contacts (Bertelsen, 2018). Relatedly, ethnic protection and ethnocentrism have shown to increase acceptance of violent extremism (e.g., Pauwels & Heylen, 2020). In contrast, multicultural acquisition reduces the risk of support for violent and illegal means in relation to extremism (Ozer, 2020). This lends support to the idea that being securely attached within one's sociocultural context may protect against violent extremism by reducing threat perceptions and feelings of uncertainty (Ozer, 2020).

## **2.5 Limitations and Future Research**

Despite a stark increase in quantitative studies applying inferential statistics within radicalisation and violent extremism studies, it is important to note that the vast majority of studies included in this systematic review employed a cross-sectional research design and hence, we cannot draw any causal conclusions. While these studies provide important information for establishing an empirical evidence base, they cannot provide robust knowledge on the developmental trajectories over time. Nevertheless, even the most carefully designed longitudinal studies are limited in detecting causal effects (Shadish, Cook, & Campbell, 2002).

Hence, research and practice must be cautious in regard to studies claiming causality. Furthermore, the current systematic review is based on self-reported survey data. An inherent issue with self-report data is that it may inflate responses and therefore leads to an over-estimation of correlations (Lösel et al., 2018).

The process of measurement is central to quantitative research. Within the emerging quantitative research on violent extremism, multiple scales measuring different conceptualisations of radicalisation have been developed (e.g., Bhui et al., 2014; Moskalenko & McCauley, 2009). At the same time, this chapter's findings are consistent with Scarcella et al.'s (2016) review and highlight that relatively few of those scales have proven to be psychometrically sound instruments, demonstrating poor validity and reliability properties. Further, the great heterogeneity of radicalisation measures intending to measure the same outcomes renders it particularly difficult to establish valid and robust risk and protective factors. Despite the narrowly defined inclusion criteria, the review also found a great heterogeneity of scales assessing radicalisation. Subsequently, the substantial variations in operationalisation and measurement limit our ability to draw more robust conclusions. Notably, one fundamental aspect towards methodological progress and to advance quantitative research on risk and protective factors, is the development and operationalisation of reliable and valid measures pertaining to different aspects of radicalisation (i.e., attitudinal or behavioural outcomes) (Ozer & Bertelsen, 2018). This necessitates further development of self-report scales with adequate psychometric properties to identify the most pertinent risk and protective factors for radicalisation. As such, these scales may help to validate those factors by drawing on statistical inference.

Additionally, it is recommended that studies should only apply validated instruments and employ robust testing of those tools. This should include measurement validity tests, e.g., multigroup factor analyses and measurement invariance tests to establish whether the constructs have the same meaning across specified groups (e.g., cross-cultural contexts, gender and age groups). Exploratory factor analysis as well as subsequent confirmatory factor analysis is required when developing scales. Chapter 5 will demonstrate a 10-step scale development procedure across three studies. This may help other researchers to follow proper scale development techniques and reporting procedures. By establishing construct validity, researchers can improve methodological homogeneity, which will be key when conducting meta-analyses, and will enhance the validity of findings more generally (Wolfowicz et al., 2020b).

A related issue pertains to the great heterogeneity not just in the psychometric scales assessing radicalisation outcomes, but also in the risk and protective factor measures within this study. Only a minority of the included studies operationalised the same constructs which further limits the internal as well as external validity of findings. Few replicated factors render meta-analysis almost impossible. Additionally, factors such as social alienation and collective deprivation were each assessed with different scales across studies and thus, it cannot be guaranteed that they actually measure the same underlying constructs. Therefore, it is difficult to assess in how far differences in findings may be ‘real’ differences or whether they are merely indicative of the variations in instruments being used to assess different risk and protective factors as well as radicalisation outcomes (Pratt & Cullen, 2005).

Overall, the results demonstrate that it is important to shift away from the prevailing risk-oriented approach and to incorporate protective factors more strongly, which may protect and/ or buffer against radicalisation and violent extremism. Notably, this necessitates more research on the direct promotive but particularly on the buffering protective factors when risk factors are present. Much can be learned from resilience research in regard to understanding the processes affecting at-risk individuals, e.g., those who experience various risk factors but nevertheless remain law-abiding citizens and continue to adhere to prosocial norms and values.

The study findings highlight some important conceptual and methodological considerations for future research. Importantly, in order to advance our knowledge and the research on risk and protective factors for violent extremism, we need to think about how to study those factors conceptually and methodologically. Similar to involvement in other types of crime, radicalisation trajectories and engagement in violent extremism will be characterised by complex constellations of risk as well as protective factors (Lösel et al., 2019). As such, we need adequate research designs to analyse the conditional and contextual nature of various factors, which involves more complex analyses of patterns of variables (Lösel & Bender, 2003). For instance, rather than simply establishing significance, the strength of relationships between predictors and radicalisation outcomes and non-linear effects of associations need to be equally tested for. Additionally, analyses need to elucidate why effects of influential factors may change with development and importantly, delineate what kinds of mediators or moderators may elicit these changes and thus, consider the impacts which previous developmental phases may exert in later stages (Hall et al., 2012).

Relatedly, we still know very little about the interactional nature of risk and protective factors for radicalisation and violent extremism. According to Rutter (2012) the true value of a protective factor only becomes apparent when a risk factor is present, meaning it may buffer

against the adverse effects of risk factors. However, Lösel and Bender (2003) argue that it is difficult to identify buffering protective factors within criminological research and urge for carefully designed studies to detect those moderating effects (also see Loeber & Farrington, 2012). Within this analysis only a few studies conducted moderator analyses in order to study the interactions of protective factors when risk factors are present (e.g., Gøtzsche-Astrup, 2019; Pauwels & Hardyns, 2018; Rottweiler & Gill, 2020). Yet, for an interactive protective factor to be meaningful, one has to analyse and detect the mechanisms through which a protective factor buffers the impact of risk factors, which subsequently will help to better understand why risk factors do not impact individuals equally (Hall et al., 2012). Hence, future studies are required to examine the complex relationships as well as configurations of risk and protective factors that may offset or dampen the adverse effects. Chapter 4 addresses these limitations identified within previous research designs and conducts several moderation analyses in order to examine the interaction effects of risk and protective factors.

Similarly, the majority of studies refrained from conducting mediational analysis in order to examine the processes underlying vulnerability and protective factors. While quantitative research on violent extremism still primarily focuses on analysing main and direct effects of proposed factors, much less emphasis is placed upon elucidating the underlying mechanisms by which factors may exert their effects on radicalisation outcomes. The few studies which did conduct mediation models, solely focused on risk factor mediations. Yet, more studies should also incorporate the extent to which various mechanisms may mediate the effects of a given protective factor leading to a reduction of risk in the outcome of interest. Chapters 3 and 6 of this thesis fill this gap and examine the underlying mechanisms of risk as well as protective factors to better understand vulnerabilities to violent extremism and the potential protective effects that might mitigate against it. Relatedly, I stress the importance of including more psychological, personality as well as social environmental factors and placing less emphasis on sociodemographic variables. Therefore, chapter 3, 4 and 6 will examine psychological constructs in order to advance our understanding of the underlying mechanisms of radicalisation processes.

Importantly, we further have to consider the contextual effects of risk and protective factors on different radicalisation outcomes. For instance, while studies within this systematic review have demonstrated that observer justice sensitivity was protective against violent extremist attitudes and right-wing extremist beliefs among German school students aged 14-15, observer justice sensitivity was predictive of violent extremist intentions among politically active Germans with an average age of 24 years. Conversely, victim justice sensitivity exerted

protective effects among politically active citizens but was a significant risk factor for right-wing and mixed violent extremism among school students (Jahnke et al., 2020). These findings highlight that risk and protective factors are context-sensitive, meaning they exert differential effects, such as having a protective function within one context and/or against one outcome (e.g., attitudes, intentions and/ or behaviour) but may exert risk effects under different conditions or for other outcomes. Relatedly, I urge more studies to employ analyses that test for differential effects of risk and protective factors on different radicalisation outcomes in regard to age, gender and other sociodemographic characteristics. Given all these considerations, Lösel and Bender (2003) caution against making overly broad assumptions about risk and protective factors. The authors stress that when designing studies and interpreting study results researchers have to ask themselves: risk for and protection against, what? By enhancing our knowledge about the underlying mechanisms linking risk and protective factors, research on protective factors can greatly improve traditional risk research (Lösel & Bender, 2003).

## **2.6 Conclusion**

To conclude this chapter, the majority of factors can be explained from a criminological perspective. Accordingly, this review found a vast number of risk and protective factors which are similar to those factors that have previously been found to increase or lessen the likelihood of illegal and violent behaviour based on criminological research examining violence and delinquency. I argue that radicalisation and violent extremism research should become more strongly integrated into the broader research on violence within developmental and life-course criminology. Chapter 3 addresses these suggestions and applies an analytically integrated framework for studying violent extremism based on criminological concepts.

In addition, most individuals who experience risk factors do not hold extremist attitudes and even fewer proceed on a pathway where they develop intentions to engage or actually mobilise towards action. As such, it is key to include protective factors in order to understand the factors and influences that protect and/or buffer against radicalisation and violent extremism. While there is still a scarcity of research on protective factors, there has definitely been a promising upward trend in research on this topic. Relatedly, chapter 4 and 6 will place emphasis on the potential protective effects of certain factors for violent extremism.



## **Chapter 3: Individual and Environmental Explanations for Violent Extremist Intentions: A German Nationally Representative Survey Study**

This chapter examines individual differences in violent extremist intentions. Based on the findings from the systematic review, it combines key criminological theories and concepts including situational action theory, social learning theory, self-control, general strain theory and legal cynicism. Therefore, the chapter deploys a conceptually integrated approach to studying extremism, which acknowledges the profound effect of person-environment reciprocity and, thereby, aims to identify key individual, developmental and social mechanisms involved in the development of extremist propensities. The analytical framework is tested using structural equation modeling. The analysis is based on a German nationally representative survey ( $n = 1502$ ) collected via Computer Assisted Telephone Interviewing (CATI). Representativity of the sample was achieved via a systematic and controlled approach of a multi-stratified probability sample (random-digit-dialing) in the dual-frame mode (landline telephone- households and mobile phone users). Results highlight that low law-related morality, low self-control, and exposure to extremism-promoting settings are associated with individuals' readiness to engage in violent extremism. The relationships between legal morality, self-control and violent extremism are further mediated by exposure to extremist peers. This chapter's findings thereby identify exposure to extremist settings as a key mechanism, which stresses the importance of including social environmental factors in the explanation of violent extremism. The proximate determinants are further related to a series of distal factors, such as perceived individual and collective strains and personal alienation.

### **3.1 Introduction**

Despite the stark rise of terrorism and extremism research within the social and behavioural sciences, the majority of these studies draw from concepts within political science, psychology and sociology (Schuurman, 2019). Major criminological theories have largely been overlooked until very recently (Freilich & LaFree, 2015). This is surprising considering that violent extremism, like other types of criminal behaviour, is a breach of rules of conduct stated in law. Furthermore, ordinary criminals and violent extremists tend to share basic demographic characteristics, such as gender and age, and other commonalities indicative of shared underlying mechanisms across various types of criminal activity (Agnew, 2010; Wikström & Bouhana, 2017; Freilich & LaFree, 2015).

This hypothesis echoes Simi, Sporer and Bubolz (2016), who claim that the distinction between common criminality and violent extremism is illusory, and advocate for the application of life-course criminological frameworks to understand the development of violent extremism (also see Freilich, Chermak, Belli, Gruenewald, & Parkin, 2014). Simi et al. (2016) conducted life-history interviews with former violent far-right extremists ( $n = 44$ ) to examine whether non-ideological factors, such as childhood risk factors and adolescent conduct problems, preceded involvement in violent extremism. They concluded that violent extremists and other criminal offenders considerably overlap in terms of early life risk factors and conduct problems experienced during adolescence. Similarly, the United States Extremism Crime Database (ECDB; Freilich et al., 2014) data reveals that many extremists do not specialise, but rather engage in both terrorist offenses (such as ideologically motivated homicides) as well as more common crimes (such as non-ideologically motivated homicides or financial crimes). Additionally, a number of offenders who commit extremist crimes do not hold extremist beliefs and hence may not, *per se*, be defined as extremists. Thus, the ECDB study findings call into question the traditional distinction between extremist and common (non-ideological) offenders (Freilich et al., 2014).

Criminological frameworks, therefore, likely have much to offer to the explanation of extremism (LaFree & Freilich, 2018). Some of these frameworks, notably, propose that violent extremism emerges from the interplay of individual characteristics common to different categories of offenders and contextual factors specific to different categories of offences (Bouhana, 2019). As such, to explain why some susceptible individuals radicalise rather than others, it is insufficient to solely examine risk factors in isolation. Instead, it requires understanding the mechanisms through which some people rather than others are exposed to the extremist settings present in their environment, leading some of them to acquire an extremist propensity<sup>9</sup> by coming to see extremist actions as morally legitimate, leaving them more likely to engage in extremist behaviour (Ibid). Research derived from survey data on the general population (e.g., Pauwels, Lujic, & De Buck, 2020; Schils & Pauwels, 2016) increasingly support this standpoint.

This chapter builds upon these foundations in a number of unique ways. It draws upon the first nationally representative survey on violent extremist intentions ( $n = 1502$ ). The data collection occurred in Germany, which has witnessed several jihadist and right-wing terrorist

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<sup>9</sup> Defined as an individual's disposition to engage in extremist behaviour (Bouhana, 2019; Wikström & Bouhana, 2017).

attacks rendering it a highly relevant research context (Bundesamt für Verfassungsschutz, 2019; Bundesministerium des Innern, 2019). The analysis examines the relationship between the following concepts: individual and collective strains, personal alienation, law-related morality, self-control, as well as exposure to extremist settings. The outcome of structural equation modeling indicates that low law-related morality, low self-control, and exposure to extremist moral settings are associated with individuals' willingness to engage in violent extremism. The relationship between legal morality, self-control and violent extremism is further mediated by exposure to extremist peers. The results identify exposure to extremist settings as a key mechanism, which stresses the importance of including social environmental factors in the explanation of violent extremism. The proximate determinants are further related to a series of distal factors, such as perceived individual and collective strains and personal alienation.

### **3.2 Theoretical Framework**

Bouhana and Wikström (2011; Wikström & Bouhana, 2017) developed the analytical framework informing the present analysis. The framework draws chiefly upon Situational Action Theory (SAT) to articulate a multi-level model of extremist propensity development. Most recently, Bouhana (2019) proposed the S<sup>5</sup> framework to guide the analysis on the emergence of extremist risk (see chapter 1 for a more detailed description of the framework). S<sup>5</sup> integrates SAT as well as insights from social cognitive neuroscience and social ecological research to articulate the mechanisms between the key drivers of extremism at five levels of analysis: individual susceptibility, selection, settings, social ecology and system. Selection, settings, social ecology and systems are all concerned with context and therefore constitute exogenous drivers, fundamental to the explanation of extremist behaviour. Yet, instead of including all possible drivers of extremism, S<sup>5</sup> intends to guide the “formulation of inferences about what kinds of people in what kinds of contexts at what times should be considered 'at risk'” (Bouhana, 2019, p.11) and thus, outlines how these “[...] five key categories of determinants interact with each other to generate or suppress the risk of extremist propensity development and extremist action” (Ibid, p.10). Only through understanding these mechanisms, S<sup>5</sup> posits, can the relationship between extremism susceptibility, vulnerability and risk be understood, the instability of ‘terrorist profiles’ and of risk indicators be explained, and the question “why do so few susceptible individuals radicalise and, ultimately, engage in extremist acts?” be answered. The present chapter is specifically concerned with examining

individual and social ecological levels of analysis in order to understand the causes of differential individual vulnerability to extremism (Bouhana, 2019).

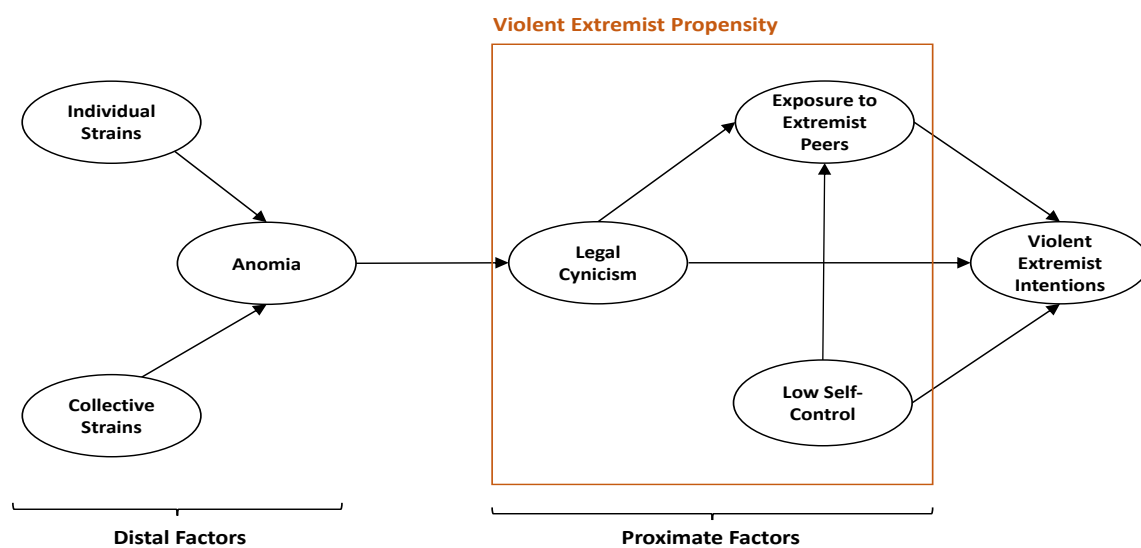
At the individual level, the key determinant for extremist propensity development is posited to be a susceptibility to moral change, which is premised to be rooted in a low commitment to law-related morality (i.e., low commitment to context-appropriate, action-relevant moral rules), and poor capacity for self-regulation, including several neuropsychological characteristics, such as low self-control, impulsivity and thrill-seeking (Ibid). The social ecological level of analysis accounts for the context an individual is situated in. Social environmental drivers are seen as fundamental in explaining extremist propensity development. In order to explain differential vulnerability to extremism, it is necessary not only to account for why individuals vary in their susceptibility to extremist moral change, but also to explain why they vary in their risk of exposure to extremism-enabling environments. As Bouhana (2019, p. 14) put it, “to be truly vulnerable to something, one needs to be at risk of coming into contact with it”; or, put differently, “one needs to be at risk of exposure.”

In order to explain vulnerability to extremism, one needs to take into account both, individual susceptibility characteristics and selection susceptibility characteristics, selection being the process linking the individual to the extremism-supportive settings in their environment. These settings provide mechanisms that contribute to the normalisation of extremist values, norms and behaviours, which lead people to perceive extremist behaviour as morally legitimate. Extremist settings further provide opportunities to form attachments to radicalising agents and other vulnerable individuals (Bouhana, 2019), as well as provide action-orientated extremist narratives and may allow for concrete opportunities to engage in corrective action (Bouhana & Wikström, 2011). To date, studies addressing vulnerability to extremism have tended to focus on the aspects of individual susceptibility previously discussed, such as characteristics which make some individuals more susceptible to extremist influences (e.g., Horgan, 2008; Kruglanski, Gelfand, Bélanger, Hetiarachchi, & Gunaratna, 2015; Webber et al., 2018). Importantly, people differ in their susceptibility to selecting themselves into extremist settings, which means some individuals are more likely to be exposed to environments that are capable of inducing moral change, such as radicalisation (Bouhana, 2019).

The sections below outline how people’s attraction to criminogenic settings is chiefly influenced by morality and self-control, such that individuals are more likely to spend time in extremist settings if they hold low law-related moral beliefs and exhibit poor self-regulation (Perry, Wikström, & Roman, 2018). Given this, extremist propensity development can be

understood as the product of more or less proximate and distal determinants (see Figure 1<sup>10</sup>; Bouhana & Wikström, 2011). It is further delineated how individual and collective strains exert their effect on legal cynicism by increasing feelings of alienation. The following sections provide an overview of the theorised determinants, disaggregated across individual-level and social environmental-level explanations.

**Figure 3.1.** Hypothesised structural equation model.



### 3.2.1 Distal Factors Explaining Susceptibility to Extremism

#### 3.2.1.1 Perceived Individual and Collective Strains

General strain theory states that individuals who experience strains may develop several emotional, cognitive and behavioural outcomes, including negative feelings like frustration and anger, which subsequently may lead to violent and criminal behaviour (Agnew, 2010). The theory depicts perceptions of injustice, discrimination and perceived deprivation as important antecedents of criminality. Empirical research demonstrates a crystallisation of strains such as perceived injustices, feelings of discrimination, and anger about unfair treatment, which are

<sup>10</sup> It is important to note that the data is cross-sectional and therefore the analysis' findings cannot draw causal inferences. The ordering of the individual constructs in this chapter's model is guided by the proposed theoretical framework. Neither the direction nor the exact ordering of these constructs can be established with the present data, but instead they are theoretically informed, in order to build the analytical process model.

directly related to outcomes such as holding negative emotions towards out-groups, support for political violence, adoption of radical beliefs, and individual violent extremist intentions and actions (Piazza, 2012; Boehnke et al., 1998; Pauwels & Heylen, 2017; Doosje et al., 2013). However, exposure to strain does not necessarily lead to direct engagement in extremist behaviour. In fact, research has shown that only a very small percentage of those who experience strain, develop extremist beliefs and even fewer engage in extremist violence (Sageman, 2004). As such, it might be hypothesised that strains can contribute to experiences of alienation and, cumulatively, these grievances may decrease individuals' law-related morality, rendering the engagement in illegal and violent behaviour more likely.

### *3.2.1.2 Anomia*

The sociological concept of 'anomia' presents both a state of mind and a subjective experience in response to societal and individual dysfunctions. It constitutes the individual-level counterpart to the original macro-level condition of anomie, defined as a breakdown of social standards and a state of normlessness (Merton, 1938). Accordingly, anomia has been defined as 'a loss of normative orientation and of control over situations and goals of action' (Legge, Davidov, & Schmidt, 2008, p. 249). Anomia denotes a psychological state which is accompanied by feelings of meaninglessness (one's life has become too difficult to effectively cope with it), powerlessness (one's actions have no impact), alienation (a sense of disintegration and disconnection from society), and normlessness (norms and standards are no longer socially regulated). More specifically, it refers to a collapse of people's sense of attachment to society, which precipitates feelings of social isolation. Empirical studies demonstrate that anomic people (and those suffering injustice) hold more negative attitudes and feelings of distrust towards other groups in society and report more violent extremist intentions (Goertzel, 1994; Nivette, Eisner, Malti, & Ribeaud, 2015; Boehnke et al., 1998; Adam-Trojan et al., 2019; Schils & Pauwels, 2016; Pauwels et al., 2020). Studies also show anomic people exhibit stronger levels of legal cynicism. This relationship may induce a sense of perceived normlessness, which could provide justification to use socially undesirable means (e.g., norm- or rule breaking behaviour) to achieve these ends (Merton, 1938).

### **3.2.2 Proximate Factors Explaining Susceptibility to Extremism**

Whereas personal and collective strains as well as feelings of anomia present distal explanations of why some individuals are more susceptible to radicalisation, legal cynicism,

low self-control and exposure to extremist settings are perceived to constitute more proximate factors, which may lead to the acquisition of violent extremist propensities.

### *3.2.2.1 Legal Cynicism*

Legal cynicism leads to the disengagement from internal obligations to comply with legal rules and social norms (Sampson & Bartusch, 1998). Individuals, who engage in such processes deny the bindingness and legitimacy of the law. Legal cynicism may result from perceptions of persistent injustice, relative deprivation and consequent feelings of anomia. Confronted with such strains, individuals may develop a cynicism towards the law, which can serve as a justification for criminal behaviour and violence (Nivette et al., 2015; Ribeaud & Eisner, 2010; Fritsche, 2005; Reisig et al., 2011; Ribeaud & Eisner, 2015). Other studies demonstrate the relationship between legal cynicism and the support for violence to advance political and ideological aims (Hagan, Kaiser, & Hanson, 2016; Nivette et al., 2017). These findings are not surprising as many extremist actions are criminal in nature (Bouhana, 2019). Indeed, a significant number of individuals who committed terrorist offences have previously been involved in other criminal activities (Basra & Neumann, 2016). The same susceptibility seems to be causally implicated in both types of criminal behaviour (Bouhana, 2019, p.13).

### *3.2.2.2 Self-control*

Gottfredson and Hirschi (1990) argue that capacity for self-control is a key factor in explaining delinquency and the development of criminal propensities. Correspondingly, social control theory (1990) attributes great significance to early developmental processes, such as internalised controls acquired through childhood. Importantly, a lack of self-control is seen as one of the main factors explaining criminality, whereby the underlying explanations of self-control are said to apply to various types of criminality, ranging from petty crimes to serious offending (Siegel & McCormick, 2010). Numerous empirical studies found a significant relationship between lower levels of self-control and an increased risk of delinquency (for a meta-analysis see Pratt & Cullen, 2000).

Gottfredson and Hirschi (1990) originally conceptualised self-control as a trait consisting of six dimensions: immediate gratification, preference for simple tasks, risk-taking behaviour, volatile temper, impulsiveness, and self-centeredness. Therefore, self-control constitutes an inhibitory factor which has been characterised as the ability to resist the drive for immediate gratification. However, they also argued that their conceptualisation of self-control is poorly suited to explain violent extremism, as terrorism “reflect[s] commitment to a

political cause” (Hirschi & Gottfredson, 2001, p. 94). They stress that common (non-ideological) offenders hold a low capacity for self-control, whereas ideologically motivated offenders (terrorists) possess high levels of self-control pertaining to the assumption that engagement in terrorism requires planning and foresight.

Yet, numerous studies undermine this claim and argue that similar self-control related mechanisms, which apply to the explanation of general offending, may be involved in individual-level processes of susceptibility to extremism (Freilich et al., 2014; Simi et al., 2016). For instance, qualitative research analysing right-wing extremist groups, highlighted the importance of thrill-seeking and risk-taking as key determinants in explaining involvement in extremism and violence committed by far-right extremists (see for example Bouhana, Corner, Gill, & Schuurman, 2018; Lakhani & Hardie-Bick, 2020). Survey studies corroborate that poor ability to execute self-control is significantly correlated with exposure to extremist settings and self-reported violent extremist attitudes and behaviour, irrespective of the ideology in place (Clemmow et al., 2020; Pauwels & De Waele, 2014; Perry et al., 2018; Pauwels & Hardyns, 2018; Pauwels & Svensson, 2017). These findings suggest that the receptivity to extremist ideologies is associated with poor self-regulation (Bouhana, 2019).

### *3.2.2.3 Exposure to Extremist Settings*

As mentioned previously, in order to explain individuals’ vulnerability to extremism, it is insufficient to solely focus on individual-level susceptibility characteristics. Environmental-level factors must be included to understand why some people radicalise and others do not. It is argued that alongside a weak law-related morality and low self-control, extremist propensity development is also affected by one’s exposure to extremist settings.

Derived from Sutherland’s (1947) differential association theory, social learning theory suggests criminal behaviour involves a socialisation process, whereby criminality constitutes a learned behaviour, acquired through the same processes as normative and prosocial behaviours (Akers, 2017). Criminological research shows that social influences, especially those of peers, strongly impact the transmission of attitudes, moral norms and behaviours. By offering beliefs that delegitimise rules and the law, delinquent friends can influence individuals’ criminal involvement. Thus, exposure to delinquent peers is one of the most salient predictors of criminal behaviour (Gottfredson & Hirschi, 2003; Wright, Caspi, Moffitt, & Silva, 2001; also see the discussion of the systematic review in chapter 2). The same may be true for violent extremism where social learning facilitates the transmission of extremism-relevant norms and values, which justify extremist behaviour (Akers & Silverman, 2004).



Yet, research shows that not every individual is equally susceptible to the influences of delinquent as well as extremist peers and networks. The capability to exercise self-control moderates the effects of exposure on criminal behaviour, whereby lower levels of self-control are linked to higher levels of offending (Perry et al., 2018). Notably, studies demonstrate a reciprocal relationship between exposure to criminal peers and delinquency, whereby delinquent peers on the one hand facilitate offending but previous criminality on the other hand leads to having more delinquent friends (Boers, Reinecke, Seddig, & Mariotti, 2010; Matsueda & Anderson, 1998). Pauwels et al. corroborate that various forms of extremism-related exposure share a direct and positive association with involvement in self-reported political violence and aggression (Pauwels & De Waele, 2014; Pauwels & Heylen, 2020; Pauwels & Schils, 2016; Pauwels et al., 2020).

### **3.3 Hypotheses**

A structural equation model with several latent variables is tested in order to identify individual and environmental predictors for violent extremism (see Figure 3.1). This chapter's analysis investigates if and how these factors and their mechanisms are related to violent extremist intentions, as well as if and how they jointly contribute to understanding differential vulnerability to extremism. It is important to reiterate that the analysis is based upon cross-sectional data and therefore it is not possible to establish causal relationships. The ordering of the determinants in the proposed model is guided by the theoretical framework. Therefore, neither the direction of the individual hypotheses nor the exact ordering of the constructs can be determined with the present data, instead they are theoretically informed in order to test this chapter's analytical process model.

Strains and grievances are hypothesised to contribute to a cognitive opening, rendering people more receptive to extremist narratives by increasing perceived alienation and further affecting law-related morality. Perceived alienation is hypothesised to add to perceived strains by increasing individuals' legal cynicism.

*Hypothesis 1:* Personal strains will lead to stronger feelings of anomia, which in turn increase individuals' legal cynicism (indirect effect). Additionally, individual strains will also have a positive direct effect and will be associated with more legal cynicism.

*Hypothesis 2:* Collective strains will increase perceived alienation and thereby, feelings of anomia will lead to higher levels of legal cynicism (indirect effect). Collective strains are also assumed to have a positive and direct effect on legal cynicism.

Legal cynicism is partly an outcome of experienced strains and personal alienation and explains how a weak law-related morality may directly lead to violent extremist tendencies. The analysis posits that weak perceptions about the law also render individuals more susceptible to exposure to radicalising settings. In addition, individuals vary in their neuropsychological characteristics and subsequently differ in their ability to execute self-control. It is expected that low self-control, as well as weak perceptions about the law, render individuals more susceptible to exposure to radicalising settings. Two separate mediations for low self-control and legal cynicism are tested.

*Hypothesis 3:* Legal cynicism will have a positive and direct influence on violent extremism. Legal cynicism is expected to lead to increased exposure to extremist settings, which in turn positively predicts individuals' willingness to engage in violent extremism (indirect effect).

*Hypothesis 4:* Lower levels of self-control will have a positive and direct effect on violent extremism. Lower levels of self-control will further lead to increased exposure to extremist settings and thereby increase individuals' willingness to engage in violent extremism (indirect effect).

## **3.4 Method**

### **3.4.1 Data**

This chapter's analysis is based on a cross-sectional and nationally representative survey study of the German population comprising German-speaking persons aged 18 years and older. The total sample included 1502 respondents with a mean age of 55 ranging from 19 to 95 years of age ( $SD_{\text{age}} = 16.93$ ). The present sample is approximatively representative of the German population based on the following sociodemographic variables: gender, age and ethnicity. The sample consists of 49.3% female participants, 17% of all respondents have a migration background compared to an estimated 25% in the German population (BPB, 2019), and 8.7% indicated that they were not born in Germany. Out of all respondents, 94.2% held German citizenship. Respondents had a fairly high level of education with 44.5% indicating that they completed the 'Abitur' or an equivalent, which is the highest level of school education in Germany and which is above the German average, which currently stands at 31.9%

(Statistisches Bundesamt, 2019). The sample indicates that out of all participants, 31.1% were Protestant, 24.9% Catholic, 2.8% Muslim, 0.9% Orthodox, 1.8% stated another religious affiliation and 38.5% indicated that they did not hold any affiliation. This sample is also approximately representative for Protestant and Catholic Christians, whereas Muslims are slightly underrepresented in the sample with 2.8% compared to 5.4% in the general population (Bundesamt des Innern, 2020).

Ipsos Germany and Trend Test GmbH collected the survey data via Computer Assisted Telephone Interviewing (CATI). This method was considered the best method to realise a representative survey study. The main fieldwork took place from March 22<sup>nd</sup> to May 27<sup>th</sup>, 2019. The target population comprised all German-speaking persons aged 18 years and older, living in private households with at least one landline telephone or at least one mobile-phone line in Germany. A representative sample was drawn from the target population. This was achieved through a systematic and controlled approach of a multi-stratified probability sample (Random-Digit-Dialing) in the dual-frame mode (landline telephone- households and mobile phone users), based on the current ADM (Arbeitskreis Deutscher Markt- und Sozialforschungsinstitute) sample design for telephone surveys. Individuals participated on a voluntary basis and were not incentivised. Incentivising participants might bias towards those respondents who mainly participate due to monetary rewards. Debriefing was provided at the end of the survey. The average duration of the interviews was approximately 31 minutes.

For the fieldwork of this study, 108 interviewers were deployed. Interviewers completed between 1 and 133 interviews. All interviewers were trained and possessed experience in social research studies. Additionally, all interviewers pass a professional training system before they begin with real interviews. They further receive ongoing training and development through seminars. A pre-test of 30 interviews was conducted before the main fieldwork in order to test the questionnaire design, the clarity of questions and answer options, the questionnaire length as well as individuals' willingness to participate.

### **3.4.2 Measures**

Unless otherwise mentioned, the measures reported below were assessed on 7-point Likert-scales (1 = *strongly disagree*, 7 = *strongly agree*).

#### *Violent Extremism*

The violent extremism scale is devoid of any specific set of values (e.g., particular religious, political or social beliefs) and is designed for all unlawful extremist behaviour regardless of

the driving ideology. The term *violent extremism* is used to refer to individuals' willingness to engage in illegal and violent actions on behalf of a group, with whom the individual previously identified most strongly with. The group could be a political, national, ethnic, religious or another group.

Therefore, rather than measuring actual violent extremist behaviour, participants' readiness to engage in violent extremism is measured instead. The construct of violent extremism was examined with four items from the Radicalism Intention Scale (RIS; Moskalkenko & McCauley, 2009). As the systematic review in chapter 2 has shown, the Radicalism Intentions Scale is the most frequently operationalised instrument to assess the construct of violent extremism in population surveys and measures individuals' willingness to engage in illegal and violent actions on behalf of a group. The RIS is a validated scale with an adequate component structure and has demonstrated good internal scale reliability (e.g., Moskalkenko & McCauley, 2009). Yet, it is worth noting that assessing intentions rather than actual behaviour has important implications when examining predictors for engagement in violent extremism. Notably, most individuals who hold extremist views will never engage in violent extremist behaviour. Equally, there are violent 'extremists' who are not primarily motivated by their beliefs but engage in extremist violence for other reasons. Yet, there is a tendency to see involvement in violent extremism as directly stemming from the adoption of extremist beliefs leading to an inflation of extremist attitudes with extremist behaviour. While probably the vast majority of violent extremists hold extremist attitudes, having such beliefs is not a necessary or sufficient criterion for being involved in violent extremism (Schuurman & Taylor, 2018).

Measuring violent extremist behaviour is a very challenging task to undertake in general population samples, due to issues with ethics approvals and misreporting of survey answers, especially social desirability bias poses challenges to most surveys assessing sensitive items. To overcome this, proxy measures are applied to assess individuals' willingness to engage in violent extremist behaviour. While it has not been measured whether people have committed extremist offenses, this analysis has opted for assessing violent behavioural intentions, rather than mere extremist attitudes, as intentions constitute the immediate antecedents of behaviours and therefore, reveal people's readiness to perform a behaviour. Having stronger intentions to engage in a certain behaviour makes it much more likely that people will actually perform that behaviour (Ajzen, 1991).

Before assessing the four items from the Radicalism Intention Scale (Moskalkenko & McCauley, 2009), participants were asked to think about the group or organisation with whom

they overall identified most strongly. Afterwards, they were asked to what extent they agree to the following statements: “*I would continue to support an organisation that fights for my group’s political and legal rights even if the organisation sometimes breaks the law*”, “*I would continue to support this organisation even if the organisation sometimes resorts to violence*” “*I would participate in a public protest against oppression of my group even if I thought the protest might turn violent*” and “*I would attack police forces if I saw them beating members of my group*” ( $\alpha = .76$ ). The items of the Radical Intentions Scale were combined and an average score for every individual was created whereby higher values indicate stronger intentions to engage in extremist violence.

### *Individual and Collective Strains*

The concepts of individual and collective strains tap into a variety of so-called strains, which participants may experience on an individual or group-level. Four items amended from Doosje et al. (2013) measured respondents’ individual strains. Participants were asked how much they agreed with items such as: “*I have the feeling of being discriminated against*” and “*I think I am worse off than others in Germany*” ( $\alpha = .83$ ).

Four items measured collective strains, which captured the constructs of collective deprivation, discrimination and perceived group injustice. Example items include: “*It makes me angry when I think of how my group is treated in comparison to other groups in Germany*” and “*If I compare the group to which I belong with other groups in Germany, I think we are treated unfairly*” ( $\alpha = .93$ ). The items assessed perceptions about the group the participant most strongly identified with. This measure was also amended from a scale developed by Doosje et al. (2013).

### *Anomia*

The concept of anomia refers to personal alienation and was assessed with four items relating to individuals’ perceptions of social powerlessness as well as normlessness and meaninglessness of institutionalised norms and values. Respondents were asked to indicate if they agreed with statements such as: “*Nowadays everything is changing so quickly that I do not know what is right or wrong anymore*” or “*Nowadays things have gotten so difficult, that I don't know how to cope with them*” ( $\alpha = .87$ ). This scale is amended from the German Mitte Studie (Zick et al., 2019).

### *Law-related Morality*

Law-related morality was operationalised using four items adapted from Sampson and Bartusch's (1998) legal cynicism scale. Participants were asked to indicate their agreement with statements such as: "*Sometimes it's necessary to ignore rules and laws and to do what you want*" and "*Laws were made to be broken*" ( $\alpha = .71$ ). An average score for all items was computed. Answers were coded so that high values represent high levels of legal cynicism or put differently, low law-related morality.

### *Self-control*

Participants' ability to exercise self-control was measured with seven statements such as: "*When I am really angry, other people better stay away from me*" or "*Sometimes I find it exciting to do things that may be dangerous*" ( $\alpha = .71$ ). The scale is a modified version of the self-control scale developed by Grasmick et al. (1993), which taps into the concepts of thrill-seeking, impulsivity and risk-taking. Responses were coded so that high scores on the scale indicate a low capacity for self-control.

### *Exposure to Extremist Settings*

Association with extremist peers was used as a proxy measure of exposure to extremism-enabling settings. Exposure to extremist peers was assessed with the violent extremist attitudes scale developed by Nivette et al. (2017). The scale consists of four items. Participants were asked to indicate how much they think their friends would agree to the items capturing violent extremist attitudes, such as: "*It's sometimes necessary to use violence to fight against things that are very unjust*" or "*It's sometimes necessary to use violence, commit attacks, or kidnap people to fight for a better world*" ( $\alpha = .70$ ). A mean score was computed with higher values reflecting higher levels of exposure to extremist friends.

### **3.4.3 Analytical Procedure**

The model was estimated as a full structural equation model with latent variables in the software program R using the package 'lavaan' (Rosseel, 2012). The model was tested using structural equation modeling (SEM) as it presents a more advantageous statistical analysis compared to standard regression analysis. A latent path analysis was conducted whereby all hypotheses were estimated in a single statistical model, and the predictors were ordered on a continuum from distal to more proximate factors. Due to the integrated framework, an end-to-end integration approach was chosen, which entails the combination of several mechanisms

that play a role in differing theories so that the dependent variables of some theories become the independent variables of the integrated framework (Pauwels, Ponsaers, & Svensson, 2010). This approach further allowed us to simultaneously estimate several indirect and direct effects in one model. It was decided to include several mediation analyses within the structural equation model in order to identify underlying processes, whereby the mediators constitute intervening variables. This allowed the analysis to establish not only if the predictor variables are associated with the outcome variables but to highlight key mechanisms explaining violent extremism (for mediation approach see Hayes, 2017a).

All constructs were entered as latent variables with items as manifest indicators as they correspond to hypothetical constructs or factors, which are not directly observable. The variables are presumed to reflect a continuum, which brings a significant advantage over observed variables (Kline, 2015). Hence, scales were created in order to measure those constructs and to assess their relationship with other variables. However, such scales carry measurement errors, which represent variance unexplained by their predictors. Part of this unexplained variance is due to random measurement error or score unreliability. For this reason, SEM was chosen as it is able to estimate those error terms.

In addition, the analysis applied maximum likelihood estimation (MLR) with robust (Huber-White) standard errors and a scaled test statistic that is equal to the Yuan-Bentler test statistic to handle any violation of the normality assumption in the variables. Despite a low percentage of missing data on the individual items, ranging from 0.4% - 3.4%, 'full information' maximum likelihood estimation (FIML) was included in order to deal with the missing data. The data proved to be MAR (missing at random) and therefore, FIML can be estimated (Rosseel, 2021). Model fit was accepted if  $\chi^2 / df < 3$ , comparative fit index (CFI)  $> .95$ , Tucker-Lewis index (TLI)  $> .95$ , root mean square error approximation (RMSEA)  $< .06$ , and  $< .08$  for the standardised root mean square residual (SRMR), which indicates a good fit (Byrne, 2012; Little, 2013). Gender and age were included as statistical control variables for all paths.

### **3.5 Results**

The bivariate latent correlations between all constructs used in this study are significant. The strongest correlate for violent extremism is exposure to extremist settings, which indicates a moderate to strong association ( $r = .52, p < .001$ ). The bivariate relationships between violent extremism and legal cynicism ( $r = .42, p < .001$ ) as well as self-control ( $r = .41, p < .001$ ) and violent extremism are moderate in strength. Individual ( $r = .27, p < .001$ ) and collective strains

( $r = .30, p < .001$ ) are both moderately correlated with violent extremism. Despite the fact that anomia ( $r = .07, p < .05$ ) shows the weakest bivariate relationship with the dependent variable, this association is still significant. Overall, the strongest correlation is found between individual and collective strains ( $r = .73, p < .001$ ). Notably, legal cynicism and self-control also share a strong association ( $r = .64, p < .001$ ). Lastly, the relationship between legal cynicism and exposure ( $r = .60, p < .001$ ) is stronger compared to the association between self-control and exposure to extremist settings ( $r = .48, p < .001$ ), which is still moderate in strength.

**Table 3.1.** Means, standard deviations and inter-correlations of all latent constructs.

Variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.
1. Violent extremism	1.60	1.02	1						
2. Exposure extremist settings	1.95	1.28	.52***	1					
3. Self-control	3.15	1.10	.41***	.48***	1				
4. Legal cynicism	2.55	1.23	.42***	.60***	.64***	1			
5. Anomia	3.66	1.66	.07*	.18***	.18***	.28***	1		
6. Collective strains	2.13	1.51	.30***	.36***	.28***	.41***	.42***	1	
7. Individual strains	2.02	1.30	.27***	.32***	.27***	.38***	.49***	.73***	1

*Note.* Pearson correlation coefficients are reported.

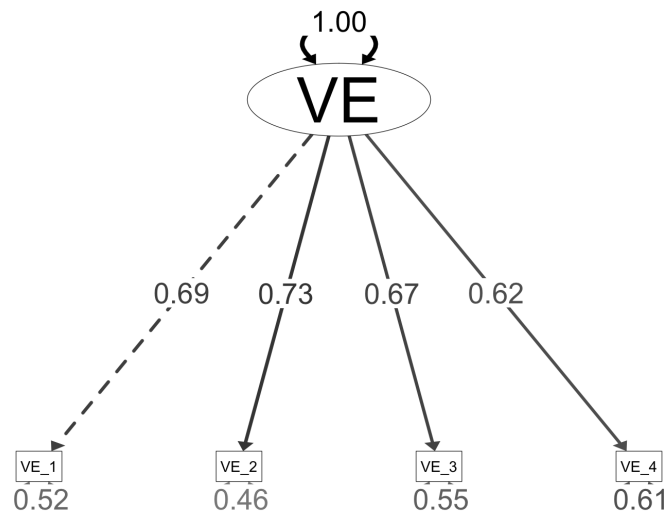
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



### 3.5.1 Structure of the Violent Extremist Intentions Scale

A confirmatory factor analysis (CFA) was conducted to assess the construct validity of the violent extremist intention scale.

**Figure 3.2.** Confirmatory factor analysis of the violent extremist intentions scale.

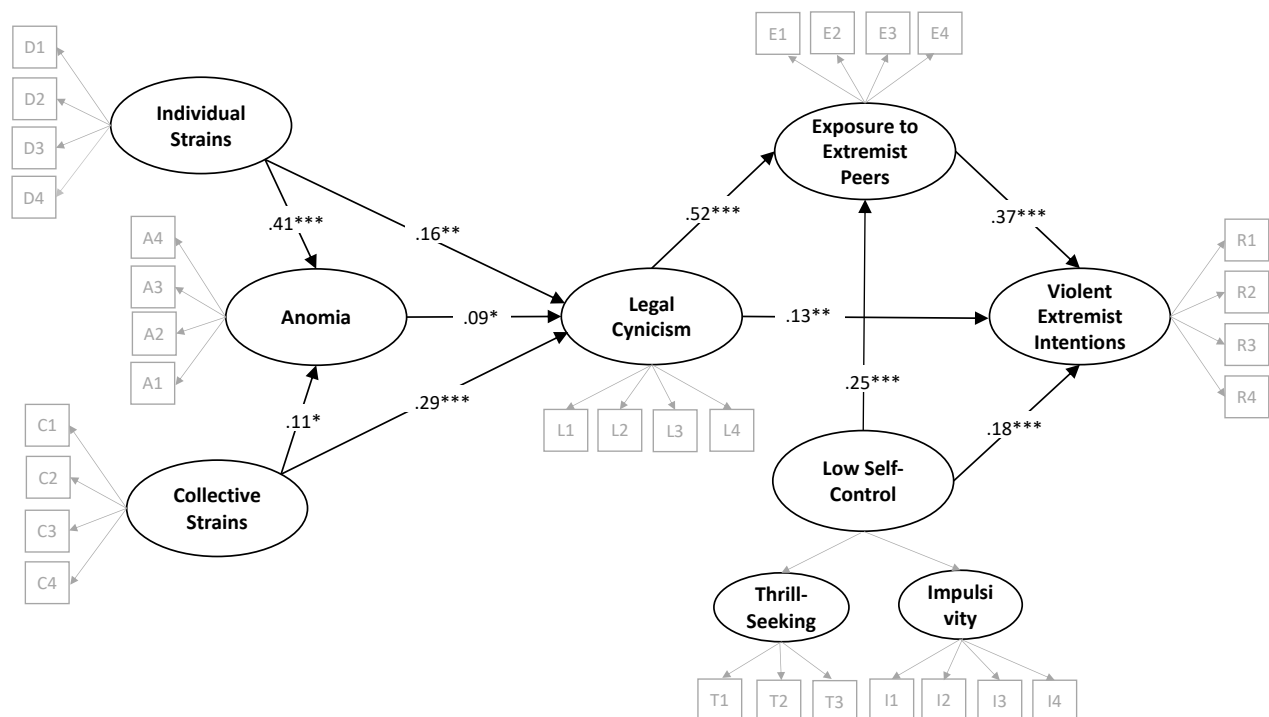


Confirmatory factor analysis of the violent extremist intentions scale yielded an excellent model fit:  $\chi^2 > .05$ ,  $\chi^2 (3) = 4.20$ ,  $\chi^2/df = 1.40$ , CFI = .99, TLI = .99, RMSEA = .03, and SRMR = .01 and good factor loadings for all items, ranging from .62 – .73 (Figure 3.2.). Further confirmatory factor analyses (CFA) were conducted on all scales. Results revealed that there were satisfactory loadings for all observed items within the range of  $\beta = 0.5 - 0.9$  (Hair, Black, Babin, & Anderson, 2010). Overall, 12% of all respondents expressed violent extremist intentions (score of 5 or above on the radical intentions scale). Missing values for the individual items were low and ranged from 1.3 – 2.1%. As mentioned above, FIML was included to estimate the missing data.

### 3.5.2 Structural Equation Model

All parameters are reported as standardised estimates with  $p < .05$  and all direct and indirect effects are estimated.

**Figure 3.3.** Final structural equation model.



*Note:* Standardised regression coefficients are given. All paths are significant.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

This chapter's hypothesised model has a good fit:  $\chi^2(413) = 971.22$ ,  $\chi^2/df = 2.35$ , CFI = .96, TLI = .95, RMSEA = .04, and SRMR = .06. Several other models were tested in order to examine different theoretical specifications, which involved testing alternative pathways and the model fit was compared to the model fit of the proposed model. For instance, alternative models were estimated where (a) exposure to extremist settings directly leads to more legal cynicism (reverse relationship) (b) lower levels of self-control lead to more legal cynicism (new path added) (c) higher legal cynicism leads to lower self-control (new path added) and (d) exposure to extremist settings lowers individuals' ability to exercise self-control (reverse

path). However, none of the alternative models fit the data better than the hypothesised model and therefore the model originally proposed was not adjusted.

#### *Individual and Collective Strains, Feelings of Anomia and Legal Cynicism*

As predicted with the chapter's first and second hypothesis, individual ( $a_1 = .41, p < .001$ ) and collective strains ( $a_2 = .11, p < .05$ ) are associated with higher levels of personal anomia. The results further show that feelings of anomia are related to higher levels of legal cynicism ( $b_1 = .09, p < .05$ ). Individual ( $c'_1 = .16, p < .01$ ) and collective strains ( $c'_2 = .29, p < .001$ ) also directly predict legal cynicism after controlling for anomia. To test if anomia presents an underlying mechanism, which links personal strains to legal cynicism, we need to establish if the effect of personal strains on legal cynicism is mediated by anomia. Statistically, this is established with an inferential test about the indirect effects, which is based on whether the product of  $ab$  is significant. The results show that the mediation is significant (index of the completely standardised indirect effect  $a_1b_1 = .04, p < .05$ ), indicating that personal alienation is assumed to constitute a significant part in translating individual strains into low law-related moral beliefs. However, the results did not find a significant mediated effect for collective strains ( $a_2b_1 = .01, p > .05$ ). The total effects of individual strains and anomia ( $c_1 = .19, p < .001$ ) and collective strains and anomia ( $c_2 = .14, p < .01$ ) on legal cynicism are both significant.

#### *Legal Cynicism, Exposure to Extremist Settings and Violent Extremism*

In line with the third hypothesis, exposure to extremist settings ( $a_3b_2 = .19, p < .001$ ) mediates the effects of legal cynicism on violent extremism. The results confirm that exposure to extremist settings presents a key mechanism demonstrating how low-related moral beliefs affect individuals' extremist behavioural intentions. Higher levels of legal cynicism lead to increased exposure to extremist settings ( $a_3 = .52, p < .001$ ), which in turn predicts stronger extremist intentions ( $b_2 = .37, p < .001$ ). In addition, legal cynicism ( $c'_3 = .13, p < .01$ ) has a significant direct effect on violent extremism. The total effect of legal cynicism and exposure to extremist settings on violent extremist intentions is also significant ( $c_3 = .37, p < .001$ ).

#### *Self-control, Exposure to Extremist Settings and Violent Extremism*

As expected with the fourth hypothesis, lower self-control is related to higher levels of exposure to extremist settings ( $a_4 = .25, p < .001$ ) and increased exposure to those settings leads to stronger violent extremist intentions ( $b_2 = .37, p < .001$ ). The direct effect of self-control ( $c'_4 = .18, p < .001$ ) on violent extremism is statistically significant, after accounting for

exposure. The total effect is also significant ( $c_4 = .22, p < .001$ ). In line with the expectations, exposure to extremist settings ( $a_4b_2 = .09, p < .001$ ) mediates the effects of low self-control on violent extremism. Therefore, the findings reveal that self-control's effect on violent extremism is transmitted through the process of exposure to extremist settings.

### **3.6 Discussion and Limitations**

This chapter draws upon the individual and social ecological levels of analysis outlined in Bouhana's (2005) S<sup>5</sup> framework and suggests that the structured integration of individual and environmental-level determinants of criminality provides a comprehensive model to account for violent extremism. Based on S<sup>5</sup>'s theoretical assumptions, this chapter examined why people vary in their susceptibility to extremism and it elaborated how this affects their risk of exposure to extremism-promoting environments leading to individual differences in vulnerability to extremism. This chapter's results demonstrate that individuals' differential susceptibility to extremism is primarily related to a low law-related morality as well as low self-control, but is further influenced by more distal factors, such as perceived individual and collective strains. This lends support to the idea that perceived alienation and legal cynicism both play a key role in translating those strains into increased susceptibility to extremism.

Notably, this chapter's findings showed that people vary in their risk of exposure to extremist settings, rendering some individuals more likely to be selected into extremism-conducive environments. Yet, it is worth mentioning again that the analysis has utilised participants' perceptions of their peers' extremist attitudes as a measure to assess exposure to extremist settings. Criminological research has shown that individuals' perceptions are systematically biased towards their own attitudes and behaviours, which subsequently may overestimate the association between peers and one's own extremist attitudes (Rebellion & Modecki, 2014). The findings demonstrate that selection susceptibility is determined mainly by levels of morality and self-control, suggesting that individuals are more likely to be exposed to extremist settings if they hold law-related moral beliefs and exhibit poor self-regulation. Importantly, exposure to extremist settings emerges as a key mechanism explaining individuals' willingness to engage in extremist violence and it provides an explanation for the selection processes of susceptible individuals to extremist socialising influences in their environment.

Taken together, the results demonstrate that vulnerability to extremism is directly related to low law-related morality, low self-control and exposure to extremist settings.

Extremist propensity development emerges from the developmental interplay between an individual's differential susceptibility to extremism and their exposure to extremism-enabling settings. Whereby previous research has mainly focused on individual characteristics when explaining radicalisation processes, this chapter's study highlights the necessity of incorporating contextual accounts in order to answer the question of why some individuals rather than others radicalise. The results further emphasise the need to address risk factors for extremism as early as possible. Results show perceptions of injustice and unfair treatment can lead to personal alienation and legal cynicism, which may initiate a process of extremist propensity development. Yet, there is a tendency for policy to treat 'violent' extremism as the main problem. I argue, however, that for the individual, extremism is the solution to other problems on-going in their life. It is these problems the findings suggest which require addressing. For example, minimising negative social conditions related to injustices and strengthening protective factors, such as social integration and bonds to settings promoting prosocial norms, may prove promising avenues for diminishing violent extremist intentions.

As previously mentioned, the present analysis further demonstrated the importance of extremist settings for explaining differential vulnerability to extremism. Therefore, prevention programs should explicitly incorporate this notion of socialisation in their work. In terms of practical implications, this chapter's findings can inform front line workers (police, teachers, prevention workers) about potential characteristics and grievances of people who might be susceptible to extremism and which may help inform primary and secondary prevention programs in developing effective preventing/countering violent extremism (P/CVE) strategies. Yet, whilst individuals' deep sense of injustice requires intervention, some of these grievances are so deep-rooted they can be considered intractable. Equally, such interventions will not have universal success, and some may still slip through and mobilise from intention to action. I therefore do not take the position that such interventions will be a panacea for violent extremism. They still need to be supplemented with initiatives informed by situational crime prevention, which attempt to stall the commission of a terrorist attack (Freilich, Gruenewald, & Mandala, 2019).

Similarly, I am not intending to suggest ideology plays no role. However, we should not buy into simplistic understandings of radicalisation as being the result of either 'vulnerability' or an agentic choice. It is often both, but differs in degrees of intensity from case to case. I believe the scientific underpinning of the former is still being established. For the former, research conducted by Freilich, Chermak and Caspi (2009) shows ideologies do play a vital role for extremist organisations' growth and recruitment suggesting that not taking

these views seriously or dismissing them as irrational or unreasoned is unproductive and allows society to ignore underlying grievances. Therefore, effective P/CVE approaches could also challenge the underlying ideology of extremist groups by providing counter-narratives and by tackling those grievances which led to the engagement with the ideology in the first place. However, the evidence base for counter-narratives' efficacy is still in its infancy (Carthy, Doody, Cox, O'Hara, & Sarma, 2020). Violent radicalisation is a process with a different set of strategies required for different stages along the way. The present focus here was on early prevention. Therefore, I argue that the focus of P/CVE interventions should be put on indirect, long-term and life-course oriented protective factors, which we know from developmental criminology, play a major role in determining who will be more likely to engage in unlawful behaviour. I suggest that similar factors may be able to explain who will endorse extremist attitudes and might engage in violent extremism.

While this chapter identified several underlying mechanisms in regard to the effects of risk factors on violent extremist propensity development, not much is known about the contingent effects of risk factors. Hence, chapter 4 addresses the conditional effects of conspiracy beliefs on violent extremist intentions. It is expected that the interaction between various risk- and protective factors will lead to dynamic configurations of these determinants. Analysing risk- and protective factors in isolation without acknowledging their interaction effects neglects the complex relationships at work. As further suggested in chapter 2 and chapter 3, we need to more strongly incorporate protective factors, which may protect and/ or buffer against radicalisation and violent extremism. Notably, this necessitates more research on the buffering protective factors when risk factors are present.

Therefore, I stress that more research into the protective factors against radicalisation is needed, which may act as a barrier to extremism and as such, I strongly encourage future research to incorporate protective factors in their analyses. While research on protective factors has been conducted within the context of resilience research, very few studies have examined protective factors for violent extremism (Lösel et al., 2018). To fill this gap, chapter 4 and chapter 6 examine protective factors for violent extremism. More specifically, chapter 4 will examine the contingent effects of these risk and protective factors upon violent extremist intentions, emphasising Rutter's (1987) position of the interactional nature of those factors.

Chapter 4 will demonstrate that it is in such adverse circumstances (e.g., the experience of risk factors) where the true value of protective factors becomes apparent and this has a multitude of insights for how we should design interventions focused on countering violent extremism. Such forms of protective factors should be particularly emphasised in preventive

measures focused upon 'at risk' populations (e.g., selective strategies). Chapter 6 will analyse the direct and indirect effects of protective factors against violent extremism and interpersonal violence by analysing the mediating effects and underlying mechanisms leading to increased support for and willingness to engage in (extremist) violence. Additionally, certain cognitive factors, such as critical thinking skills as well as cognitive flexibility, may also act as protective factors against developing extremist propensities. Chapter 6 will examine if and how a higher capacity for critical and reflective thinking may lessen the adverse effects of violent extremist attitudes and intentions and the analysis will further investigate whether a higher tendency for critical thinking may also reduce individuals' justification of and willingness to engage in violence.

### **3.7 Conclusion**

This chapter has shown that by applying a logically integrated framework a more comprehensive explanation of vulnerability to violent extremism can be achieved, and I hope future studies will increasingly apply multifactorial and multidisciplinary approaches in order to study extremism, paying equal attention to individual and environmental levels of explanation. Moving forward, I further suggest that future research should increasingly test other validated scales from different disciplines, such as cognitive and personality psychology as well as social psychology, in order to address the inherent complexity in extremist propensity development. In order to address these gaps, chapter 4 examines individual differences, such as the construct of self-efficacy in order to assess whether the effects of individuals' tendency to engage in conspiracy thinking on violent extremist intentions is dependent on levels of self-efficacy. Relatedly, chapter 6 focusses on personality tendencies, i.e., collective narcissism, individuals' dispositions to engage in revenge planning and trait forgiveness. Chapter 6 also assesses the psychological construct of internal locus of control and further captures social psychological constructs, such as perceived group threats in order to determine whether these factors constitute risk for or protective factors against vulnerability to extremism.

## **Chapter 4: Conspiracy Beliefs and Violent Extremist Intentions: The Contingent Effects of Self-efficacy, Self-control and Law-related Morality**

Recent incidents, most notably the US Capitol attack, demonstrate that extreme belief in conspiracy theories (e.g., QAnon) have the potential to mobilise individuals towards extremist violence. Such incidents suggest a potential association between conspiracy theories and violent extremism. Research in these two areas however largely remains siloed. Consequently, there is a dearth of empirical research on the relationship between conspiracy beliefs and violent extremism. Therefore, chapter 4 investigates the contingent effects of various risk and potential protective factors. More specifically, it examines whether the relationship between conspiracy beliefs and violent extremism depends upon individual characteristics such as varying levels of self-efficacy, self-control, and law-relevant morality. Variable interactions examine where conspiracy beliefs exert strong effects on violent extremist intentions. The analysis is based on a German nationally representative survey ( $n = 1502$ ). The results confirm that a stronger conspiracy mentality leads to increased violent extremist intentions. However, this relationship is contingent on several individual differences. The effects are much stronger for individuals exhibiting lower self-control, holding a weaker law-relevant morality, and scoring higher in self-efficacy. Conversely, when stronger conspiracy beliefs are held in combination with high self-control and a strong law-relevant morality, violent extremist intentions are lower. Such individual features thus constitute interactive protective factors for violent extremism. These results have important implications for practice in the area of violent extremism risk assessment and management. Conceptually, the results demonstrate the need to further elaborate the conditional effects of certain risk as well as protective factors for violent extremism.

### **4.1 Introduction**

A series of recent right-wing terrorist attacks occurred in Hanau, Halle, Christchurch, El Paso, Pittsburgh and Poway. Each perpetrator's manifesto referenced conspiracy theories such as the great replacement theory or white genocide (Emberland, 2020; Soufan Center, 2019). The Federal Bureau of Investigation's (FBI) report on 52 lone offender terrorists showed 46% discussed or consumed information about conspiracy theories (Richards, Molinaro, Wyman, & Craun, 2019). Additionally, in a recent intelligence bulletin, the FBI (2019) stated that fringe conspiracy theories play a crucial role within domestic terrorism. Widespread and easily



accessible fringe political conspiracy theories may drive those with extremist attitudes towards conducting extremist violence (FBI, 2019). Interviews with and analyses of propaganda outputs by jihadists and neo-Nazis have further highlighted the prevalence of conspiratorial thinking within extremist groups (Amarasingam, 2019; Durham, 2001, Fekete, 2011; Pitcavage, 2001; Pollard, 2016; Wiktorowicz, 2005; Winter, 2014). These incidents point to a potential functional role of conspiracy theories within violent extremism, thus necessitating a systematic analysis of this relationship.

On an intuitive level, extremist and conspiracy beliefs have much in common. Both proliferated greatly in the very recent past. Both greatly benefited from the internet and social media's rise which created a stark increase of easily accessible and manipulated information as well as opportunities to engage with co-believers (Guhl, Ebner, & Rau, 2019). Extremist groups propagate conspiracy theories on online forums and once individuals are entrenched within such communities, they tend to become more polarised and adopt more extreme beliefs and attitudes (Douglas et al., 2019; Metaxas & Finn, 2017; Sunstein & Vermeule, 2009). Relatedly, research highlights the important function of alternative media platforms in fostering polarised online communities where conspiracy theories may facilitate and catalyse violent extremism (Bessi et al., 2015). Furthermore, both extremism and conspiracy theories are underpinned by a deep distrust of the existing political infrastructure, sometimes for overlapping reasons, sometimes not (Einstein & Glick, 2015; Kim & Cao, 2016; Kutiyski, Krouwel, & Van Prooijen, 2020). Some research additionally suggests both may be strongly associated with highly structured thinking styles (Van Prooijen, Krouwel, & Pollet, 2015).

Whereas a previous study has tested the relationship between extreme political ideologies and conspiracy beliefs (Van Prooijen et al., 2015), no empirical study has yet tested the conditional effects of individuals' tendency to hold conspiracy beliefs on their readiness to engage in violent extremism. This chapter addresses conspiracy beliefs and violent extremist intentions in a number of unique ways. It uses the same large-scale German nationally representative data outlined in the previous chapter to analyse the conditional effects of conspiracy beliefs on violent extremist intentions. Germany presents a pertinent context to test these relationships as it has witnessed several terrorist attacks where attackers held strong conspiracy beliefs (Bundesamt für Verfassungsschutz, 2019; Bundesministerium des Innern, 2019; Kuzmany, 2020). The analysis examines the relationship between the following concepts: conspiracy beliefs, self-control, self-efficacy, legal cynicism and violent extremist intentions.

The results confirm a direct effect of conspiracy beliefs on violent extremism, whereby stronger conspiracy mentalities lead to increased violent extremist intentions. However, this relationship is contingent on several individual differences identified in the systematic review in chapter 2. The effects are much stronger for individuals exhibiting lower self-control, holding a weaker law-relevant morality, and scoring higher in self-efficacy. Conversely, when stronger conspiracy beliefs are held in combination with high self-control and a strong law-relevant morality, violent extremist intentions are lower. Such individual features thus constitute interactive protective factors for violent extremism. Hence, depending on their individual characteristics, people with conspiracy beliefs vary widely in their behavioural intentions towards violent extremism.

## **4.2 Background**

Research shows a tendency for those holding opposing extreme political beliefs to endorse similar conspiracy theories (Bartlett & Miller, 2010; Van Prooijen et al., 2015). Belief in extreme ideologies and conspiracy theories may therefore be rooted in a similar underlying psychology (Greenberg & Jonas, 2003). Understanding this underlying psychology is necessary for explaining how extremist attitudes and belief in conspiracy theories are interrelated and how their interaction functions. The following sections provide an overview of these underlying processes. The sections are organised across psychological and conditional effects.

### **4.2.1 Psychological Factors**

#### *4.2.1.1 Conspiracy Theories and Conspiracy Mentality*

Conspiracy theories explain the ultimate causes of distressing and complex political or societal events with reference to secret plots conducted by malevolent groups, which can either represent powerful (e.g., politicians, scientists) or socially marginalised groups (e.g., Jews, Muslims) (Imhoff & Bruder, 2014; Jolley, Meleady, & Douglas, 2020). A multitude of new conspiracy theories emerged across Western societies in the 21<sup>st</sup> century relating to: 9/11 (Stempel, Hargrove, & Stempel, 2007; Swami, Chamorro-Premuzic, & Furnham, 2010), climate change (Douglas & Sutton, 2015; Leiserowitz, 2006), the deaths of Osama bin Laden and Princess Diana (Wood, Douglas, & Sutton, 2012; Douglas & Sutton, 2008), flat Earth, chemtrails, anti-vaccine beliefs, QAnon, 5G networks and many more (Cairns, 2014; Garwood, 2008; Jolley & Douglas, 2014a; Kata, 2010; Satariano & Alba, 2020). Previous research links

conspiracy beliefs to threat perceptions, prejudice and negative attitudes towards powerful or socially marginalised outgroups (Imhoff & Bruder, 2014; Jolley et al., 2020; Mashuri & Zaduqisti, 2015; Swami, 2012). Those consequences may result in intentions to engage in political action (Imhoff & Bruder, 2014; Imhoff, Dieterle, & Lamberty, 2019) or conversely, it may cause feelings of alienation and thus, leads to political and social disengagement (Abalakina-Paap, Stephan, Craig, & Gregory, 1999; Goertzel, 1994; Jolley & Douglas, 2014b).

More specifically, while conspiracy beliefs have been associated with stronger feelings of powerlessness, less political efficacy and less willingness to change the status quo with conventional and unconventional political action (Ardèvol-Abreu, Gil de Zúñiga, & Gámez 2020; for a similar study on the effects of system confidence and nonnormative action see Cichocka, Górska, Jost, Sutton, & Bilewicz, 2018), they have also been linked to higher intentions to engage in non-normative and violent political action (Imhoff et al., 2019). It is important to note that general beliefs in conspiracy theories are widely prevalent within the general population (Oliver & Wood, 2014; Rees & Lamberty, 2019; Uscinski & Parent, 2014). However, it is unknown to what extent the endorsement of such conspiracies may prompt individuals to adopt extremist attitudes and to engage in extremist violence.

Bruder et al. (2013, p. 2) assert conspiracy theory beliefs are largely determined by a general propensity towards conspiracy thinking, a so-called conspiracy mentality. This renders people who believe in one conspiracy theory more likely to also believe in other conspiracy theories, even if these theories are contradictory (Goertzel, 1994; Wood et al., 2012). Thus, the most reliable predictor for conspiracy thinking is belief in other conspiracy theories, suggesting an underlying belief system which induces a conspiracy mentality (Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013; Imhoff & Bruder, 2014; Swami et al., 2010; 2011). Goertzel (1994) notes that each belief in a conspiracy theory reinforces other conspiracy beliefs and renders individuals more receptive to subsequent conspiracy thinking. Thus, a conspiracy mentality may explain why individuals significantly differ in the number of conspiracy theories which they endorse (Miller, Saunders, & Farhart, 2016; Oliver & Wood 2014; Uscinski, Klofstad, & Atkinson, 2016).

#### *4.2.1.2 Existential and Epistemic Needs*

Van Proojien et al. (2015) note that conspiracy beliefs constitute a monological belief system (also see Goertzel, 1994, p. 741; Swami et al., 2011). Despite vast differences within these conspiracy theories, they tend to share similar underlying psychological mechanisms, such as fundamental sense-making processes about distressing and threatening societal events in order

to provide explanations for these complex issues (Bangerter, Wagner-Egger, & Delouvée, 2020; Van Prooijen & Acker, 2015; Van Prooijen et al., 2015). Depicted as such, the literature highlights a multitude of psychological factors, which render individuals more likely to espouse conspiracy beliefs. Some of these factors constitute epistemic needs, which induce individuals to adopt conspiracy beliefs in order to achieve a clear-structured understanding of the world (Douglas, Sutton, & Cichocka, 2017).

Low levels of trust (Goertzel, 1994), perceived powerlessness (Abalakina-Paap et al., 1999; Pratt, 2003; Zarefsky, 1984), feelings of anomia and an associated lack of control (Goertzel, 1994; Whitson & Galinsky, 2008), feelings of uncertainty (Van Prooijen, 2016; Van Prooijen & Jostmann, 2013), and existential anxiety (Newheiser, Farias, & Tausch, 2011) have been further linked to conspiracy beliefs. Additionally, studies have shown that conspiracy beliefs are associated with low socio-political efficacy (Ardèvol-Abreu et al., 2020; Bruder et al., 2013; Van Prooijen & Acker, 2015). Research suggests that individuals are susceptible to conspiratorial thinking when existential needs, such as feeling safe and in control of one's environment, are threatened (Douglas, Cichocka, & Sutton, 2020). Thus, the endorsement of conspiracy theories may act as a coping mechanism in order to deal with existential problems, which provides a straightforward explanatory framework and ultimately allows them to regain a sense of control and certainty over distressing life events (Franks, Bangerter, & Bauer, 2013; Douglas et al., 2019).

Similar to conspiracy beliefs, which are fundamentally rooted in sense-making processes (Van Prooijen, 2011), extremist beliefs also aim to structure the world in a clear-cut manner and intend to reduce feelings of uncertainty (Hogg & Adelman, 2013; Hogg, Kruglanski, & Van den Bos, 2013; Van Prooijen et al., 2015). Research highlights extremist beliefs may compensate for personal uncertainty by offering prescriptive and action-relevant guidance as well as clearly defined values and morals (Kruglanski, Pierro, Mannetti, & De Grada, 2006). By engaging in these mechanisms, extremist beliefs tend to be further reinforced (Hogg, Meehan, & Farqueharson, 2010). This might explain why so many extremist groups hold conspiracy beliefs. Conspiracy theories may fulfil basic needs which many extremists have been shown to strive for, such as the ability to provide certainty and cognitive closure (Hogg et al., 2013; Webster & Kruglanski, 1994) and overcome issues related to perceived powerlessness and feelings of anomia (Boehnke et al., 1998; Pauwels et al., 2020).

#### **4.2.2 The Functional Role of Conspiracy Theories within Extremism**

Empirical research on the relationship between conspiracy beliefs and political extremism is scarce (for exception see Imhoff et al., 2019; Van Prooijen et al., 2015). Bartlett and Miller (2010) are among the very few researchers to have analysed the role of conspiracy beliefs within extremist groups. Their study examined the literature, ideology and propaganda of over 50 extremist groups from Europe and the United States across the political spectrum and they particularly focused on those that have engaged in violence. They argue that the endorsement of conspiracy theories within extremist groups feeds back into their ideologies, internal dynamics and psychological processes. Within extremist groups, conspiracy theories are used to increase threat perceptions and ingroup identification and thereby intensify extremist beliefs. Such processes potentially exacerbate ingroup/ outgroup distinctions, such as a providing an ‘us vs them’ rhetoric, which may lead to group polarisation, group think and in the most extreme cases to the dehumanisation of the enemy.

By providing a unifying narrative of a malicious enemy, conspiracy theories hold extremist groups together and push them in a more extreme and in some cases into a violent direction (Bartlett & Miller, 2010). In other words, conspiracy beliefs may catalyse and reinforce extremist attitudes and behaviour. Correspondingly, conspiracy theories are often used by extremists to fuel their ideology and provide justification for the use of violence. An important component of extremist propaganda is to facilitate the shift towards violent acts. By acting as a ‘rhetorical device’, conspiracy theories aim to justify and legitimise the use of violence (Bartlett & Miller, 2010, p. 5). That is, by framing extreme narratives which portray that the group one strongly identifies with is under attack, violence appears to be a necessary means to defend that group (Bartlett & Miller, 2010).

Empirical studies demonstrate that belief in conspiracy theories is associated with increased violent intentions more generally. Uscinski and Parent’s (2014) US nationally representative survey results highlight that those who hold stronger conspiracy beliefs are more likely to show acceptance towards violence in order to express disagreement with the government compared to those individuals who hold weaker conspiracy beliefs. These findings appear to be of particular relevance as they point to the link between individuals’ propensity to believe in conspiracy theories and their willingness to engage in violent action. Whereas conspiracy theories may not constitute proximate factors of individuals’ violent extremist propensities, they can be thought of as ‘radicalising multipliers’, which contribute and strengthen extremist ideologies, internal dynamics and psychological processes within groups

prompting an increased acceptance of and willingness to use violent means (Bartlett & Miller, 2010, p. 4).

### **4.2.3 Conditional Effects**

Based on the aforementioned underlying psychological mechanisms, it is expected that conspiracy mentality will be positively related to violent extremist intentions. But it is also hypothesised that this effect is stronger for individuals with certain characteristics. These are: self-efficacy, self-control and legal cynicism. The below section elaborates upon their relationship with violent extremism.

#### *4.2.3.1 Self-Efficacy*

Within social cognitive theory (Bandura, 1986; 1999), Bandura denotes self-efficacy beliefs as “the foundation of human agency” (Bandura, 2001, p. 10). Through their effect on behavioural intentions, self-efficacy beliefs constitute proximate direct and indirect predictors of human behaviour. Self-efficacy refers to the belief that one can successfully perform an action or produce an effect to achieve certain outcomes, based on perceptions that individuals hold about their own capabilities. The cognitive evaluation of one’s own abilities influence the engagement in corresponding behaviours (Bandura, 1977; 1990b; 1997). This line of research shares great similarity with Ajzen’s (1985; 1991) theory of planned behaviour, which argues that high levels of self-efficacy strengthen intentions to perform a certain behaviour as well as enhance commitment and perseverance towards goals (Ajzen, 2002).

Meta-analyses reveal that efficacy beliefs exert strong effects on human functioning (Holden, 1992; Holden, Moncher, Schinke, & Barker, 1990; Multon, Brown, & Lent, 1991; Stajkovic & Luthans, 1998). Generally, high self-efficacy has been linked to mental and physical well-being, high self-esteem, resilience as well as perseverance in the face of obstacles and failures. Conversely, low efficacy has been attributed to weak commitment towards goals and avoidance of challenging tasks, which are rooted in individuals’ beliefs that they do not have control over those situations (for overviews see Bandura, 1997; Schwarzer, 1992).

Relatedly, previous empirical evidence indicates that self-efficacy in relation to conventional pursuits is associated with positive outcomes, including recovery from illness (Schwarzer, Boehmer, Luszczynska, Mohamed, & Knoll, 2005), good school and academic performance (Bong, Cho, Ahn, & Kim, 2012; Talsma, Schüz, Schwarzer, & Norris, 2018) and healthy life-style changes (Kreusikon, Gellert, Lippke, & Schwarzer, 2011; Parschau et al., 2013). Yet, individuals might develop self-efficacy in relation to nonconventional pursuits,

including violent and illegal behaviour, but this assumption remains largely unexplored. However, an exception includes research on childhood aggression. Results highlight that self-efficacy in performing aggression (e.g., the belief that it would be ‘easy’ to shove other kids out of the way) is positively related to aggressive behaviour in children (Camodeca & Goossens, 2005; Ludwig & Pittman, 1999; Perry, Perry, & Rasmussen, 1986).

Another exception is Brezina and Topalli’s (2012) study on Nebraskan prison inmates, which reveals that many offenders maintain a strong sense of criminal efficacy despite past arrests, convictions and incarceration. They further highlight that criminal self-efficacy tends to reduce offenders’ intentions to desist from crime. These findings lend support to the idea that efficacy beliefs do not necessarily lead to prosocial and conventional outcomes but may facilitate antisocial, illegal and even violent behaviours. While it is established that self-efficacy beliefs constitute important elements in understanding human agency, to date, little empiricism investigates the relationship between self-efficacy and violent extremism (for a longer theoretical discussion see Schlegel, 2019; for anecdotal observations see Gill, Marchment, Corner, & Bouhana, 2020).

#### *4.2.3.2 Self-Control Theory*

Self-control is key in explaining criminal propensity development (Gottfredson & Hirschi, 1990). More recently, research extended this link to violent extremism (e.g., Pauwels et al., 2018; Rottweiler et al., 2021). Relatedly, the findings of chapter 3 demonstrated that individuals’ differential susceptibility to extremism is partly related to a low capacity for self-control. The results confirmed that low self-control is associated with higher levels of exposure to extremist settings and an increased willingness to engage in violent extremism. Importantly, exposure to extremist settings mediated the effects of low self-control on violent extremism.

#### *4.2.3.3 Legal Cynicism*

Legal cynicism is a mechanism leading to the disengagement from internal obligations to comply with legal rules and social norms (Sampson & Bartusch, 1998). The findings in chapter 3 highlighted that higher levels of legal cynicism predict stronger violent extremist intentions. Similar to low self-control, weak law-related moral beliefs lead to increased exposure to extremist settings, which in turn is associated with a stronger willingness to engage in violent extremism. Notably, both results from chapter 3 indicate that individuals’ differential susceptibility to violent extremism is predominantly determined by levels of low morality and self-control.

While research has addressed the potential negative outcomes resulting from conspiracy beliefs, such as increased outgroup prejudice, political disengagement or environmental inaction (Butler, Koopman, & Zimbardo, 1995; Imhoff & Bruder, 2014; Jolley & Douglas, 2014b), far less attention has been attributed to whether conspiracy beliefs may prompt individuals to engage in unlawful behaviours. Several studies have confirmed that conspiracy beliefs are associated with cynicism and strong distrust towards state institutions (Einstein & Glick, 2015; Imhoff & Bruder, 2014; Swami et al., 2011). Hence, this may prompt individuals to disengage from legal rules and social norms, rendering them more likely to engage in unlawful behaviour. Jolley et al. (2019) investigated whether belief in conspiracy theories are related to unlawful behaviour. Their results highlight that conspiracy beliefs are related to intentions to engage in and self-reported behaviour of everyday crimes. These findings support the idea that people's beliefs that others, especially authorities, are conspiring could potentially change individuals' perceptions of social norms surrounding immoral behaviour by increasing legal cynicism, which in turn may lead to criminal (and extremist) behaviour (Jolley, Douglas, Leite, & Schrader, 2019).

## **4.3 Method**

### **4.3.1 Sample**

This study is based on the same cross-sectional and German nationally representative data as detailed in chapter 3.

### **4.3.2 Measures**

Unless otherwise mentioned, the measures reported below were assessed on 7-point Likert-scales (1 = *strongly disagree*, 7 = *strongly agree*).

#### *Violent Extremism*

This chapter's analysis applied the Radicalism Intention Scale (Moskalenko & McCauley, 2009) in order to assess individuals' violent extremist intentions, which is outlined in chapter 3.

#### *Conspiracy Mentality*

The Conspiracy Mentality Questionnaire (CMQ) is a short 5-item measure developed by Bruder et al. (2013) to assess differences in the tendency to engage in generic conspiracy



thinking within and across cultures. Example items are: “*I think there are secret organisations that greatly influence political decisions*” and “*I think many very important things happen in the world, which the public is never informed about*” ( $\alpha = .84$ ). This measure was chosen in order to overcome limitations in regard to the contextual nature of previous conspiratorial beliefs scales, which were bound to specific geographical and temporal contexts.

#### *Self-efficacy*

Self-efficacy was assessed with the short version of the General Self-Efficacy (GSE-6) Scale developed by Schwarzer and Jerusalem (1995). The generalised measure of self-efficacy refers to personal capabilities to effectively handle a variety of challenging situations and life stressors. This concept of general self-efficacy draws upon different domains of human functioning in which individuals’ self-efficacy evaluations matter. This line of research suggests that general self-efficacy can explain various human intentions and behaviours when the context is less specific (Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005). The scale is a reliable and proven instrument, which has been validated in different cultural contexts as well as in clinical and non-clinical samples (Romppel et al., 2013). The scale is composed of six items such as: “*If someone opposes me, I can find means and ways to get what I want*” or “*It is easy for me to stick to my aims and accomplish my goals*” ( $\alpha = .84$ ).

#### *Self-control*

Participants’ ability to exercise self-control was measured with the same 7-item scale outlined in chapter 3. Responses were coded so that high scores on the scale indicate a low capacity for self-control.

#### *Legal Cynicism*

Law-related morality was operationalised using the same four items adapted from Sampson and Bartusch’s (1998) legal cynicism scale which was outlined in chapter 3. Answers were coded so that high values represent high levels of legal cynicism or put differently, a low law-related morality.

### **4.3.3 Conditional Analysis**

This study investigates the relationship of conspiracy mentality and violent extremist intentions and examines if and how this relationship is dependent on several individual differences. In other words, it is hypothesised that individual characteristics, such as self-efficacy, self-control

and law-relevant morality will modify the effects of conspiracy beliefs on violent extremism. Depending on their capability to execute self-control as well as their levels of self-efficacy and law-related morality, individuals who hold conspiracy beliefs may vary widely in their susceptibility to violent extremism. More specifically, the analysis examines whether those individual characteristics may act as risk or protective factors for the effects of conspiracy beliefs on violent extremist intentions. In order to conduct the analysis, several moderation analyses are tested.

### *Self-efficacy*

While Bandura's (1990b) original concept of self-efficacy has mainly been applied to task-specific situations, the measure of self-efficacy denotes it at a more general level of human agency as proposed by Schwarzer and Jerusalem (1995). In this line of research, general self-efficacy captures individuals' perceived agency in a variety of challenging encounters as well as beliefs in their own capability to change their situation and act upon certain stressors affecting their lives, in comparison to specific self-efficacy, which is a task-specific measure. Previous research shows that individuals with high self-efficacy tend to engage in more challenging tasks, expend more effort to achieve their pursuits and persevere longer in the face of obstacles (Bandura, 2001; Scholz, Doña, Sud, & Schwarzer, 2002). In contrast, individuals who doubt their capabilities are more likely to avoid challenging tasks and situations. Those people tend to show lower aspirations and weaker commitment to the goals they pursue (Bandura, 1994).

The rationale for including self-efficacy as a moderator is based on the assumption that engagement in violent extremism constitutes a risky and challenging endeavour and therefore, necessitates self-efficacy beliefs (Gill et al., 2020). If individuals are not certain they have the capability to achieve their aims, they will most likely not exhibit strong violent extremist intentions and subsequently will not engage in violent extremist behaviour. Thus, self-efficacy may constitute a major part in translating perceived strains into violent extremist intentions (Gill, 2015a). The analysis examines whether efficacy beliefs will modify the relationship between conspiracy mentality and violent extremism. In other words, the study investigates if for certain people with varying levels of self-efficacy, conspiracy beliefs have a stronger or weaker effect on violent extremist intentions. It is expected that individuals who experience certain risk factors, such as conspiracy beliefs, those with a high sense of self-efficacy may feel more capable of taking action in order to redress those grievances and subsequently will exhibit a stronger willingness to engage in violent extremism.

### *Self-control*

A weak capability to execute self-control has been linked to self-reported violent extremist behaviour (Perry et al., 2018; Schils & Pauwels, 2016). It is hypothesised that the effects of conspiracy beliefs on violent extremism are contingent on individuals' capacity for self-regulation. It is expected that for people with low self-control, the effects of conspiracy beliefs on extremist intentions will be stronger. Conversely, it is expected that a high capability to exercise self-control might protect against the influences of conspiracy beliefs on violent extremist intentions.

### *Law-related morality*

Previous research has shown that legal cynicism strongly correlates with violent behaviour and that higher levels of legal cynicism increase individuals' extremist attitudes (Nivette et al., 2017; Sampson, Morenoff, & Raudenbush, 2005). Therefore, it is expected that the relationship between individuals' conspiracy mentality and their readiness to engage in violent extremism is dependent on varying levels of legal cynicism. More specifically, it is hypothesised that higher levels of legal cynicism will amplify the effects of conspiracy beliefs on extremist intentions.

#### **4.3.4 Analytical Procedure**

The model was estimated in the software programme R using the packages 'jtools' (Long, 2020a), 'interactions' (Long, 2020b) and 'sandwich' (Zeileis, Lumley, Berger, & Graham, 2019). Scales were created in order to measure the constructs. Robust standard errors using the function 'summ' (Long, 2020a) were applied in order to apply a heteroskedasticity-consistent standard error estimator and to handle the violation of the normality assumption within dependent variable (Zeileis et al., 2019). In addition, a mean centering technique was applied to all the continuous independent variables in order to yield interpretable coefficients (Aiken & West, 1991; Hayes, 2017a). Probing and plotting of the interaction models was conducted in R with the function 'probe\_interaction', which combines the functions 'sim\_slopes' and 'interaction\_plot' (Long, 2020b). Gender and age were included as statistical control variables in all models.

## 4.4 Results

All parameters are reported as standardised estimates with  $p < .05$  and all main and interaction effects are estimated.

**Table 4.1.** Means, standard deviations and inter-correlations of all constructs in this study.

Variables	Mean (SD)	1.	2.	3.	4.	5.	6.	7.
1. Violent extremism	1.60 (1.02)	1						
2. Conspiracy mentality	4.33 (1.44)	.13***	1					
3. Self-efficacy	5.20 (1.02)	.04	.14***	1				
4. Self-control	3.15 (1.10)	.26***	.22***	.15***	1			
5. Legal cynicism	2.55 (1.23)	.27***	.39***	.11***	.41***	1		
6. Age	-	-.15***	.01	-.06*	-.18***	-.01	1	
7. Gender (1 = male)	-	-.09***	-.02	-.13***	-.10***	-.15***	.07**	1

*Note.* Pearson correlation coefficients are reported.

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

The bivariate correlations between all main constructs used in this study are significant, except for the correlation between self-efficacy and violent extremist intentions ( $r = .04, p > .05$ ). The strongest correlate for violent extremism is legal cynicism, which indicates a moderate association ( $r = .27, p < .001$ ). The bivariate relationship between violent extremism and self-control ( $r = .26, p < .001$ ) is also moderate. Despite showing a significant association, conspiracy mentality ( $r = .13, p < .001$ ) and violent extremism are weakly correlated. Overall, the strongest correlation is found between legal cynicism and self-control ( $r = .41, p < .001$ ). Notably, legal cynicism and conspiracy mentality also share a moderate association ( $r = .39, p < .001$ ). Lastly, the relationship between conspiracy beliefs and self-control ( $r = .22, p < .001$ ) is stronger compared to the association between conspiracy beliefs and self-efficacy ( $r = .14, p < .001$ ).

The results from the regression analysis confirm that conspiracy mentality is positively related to violent extremist intentions ( $\beta = .13, p < .001$ ; Table 4.2, Model 1). This implies that

individuals who hold stronger conspiracy beliefs exhibit a higher readiness to engage in violent extremism. The following sections report the conditional analyses results.

**Table 4.2.** Regression analysis with interaction terms predicting violent extremist intentions.

Predictors	Violent extremist intentions			
	Model 1	Model 2	Model 3	Model 4
	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)
Conspiracy mentality	.13*** (.026)	.13*** (.025)	.09*** (.025)	.05 (.028)
Self-efficacy		.00 (.024)		
Conspiracy mentality × self-efficacy		.06* (.025)		
Self-control			.20*** (.028)	
Conspiracy mentality × self-control			.11*** (.029)	
Legal cynicism				.24*** (.031)
Conspiracy mentality × legal cynicism				.06* (.028)
Age	-.16*** (.027)	-.16*** (.027)	-.12*** (.027)	-.16*** (.027)
Gender (1 = male)	.17*** (.052)	.16*** (.052)	.13** (.05)	.10 (.051)
$R^2$	.05***	.06***	.10***	.10***

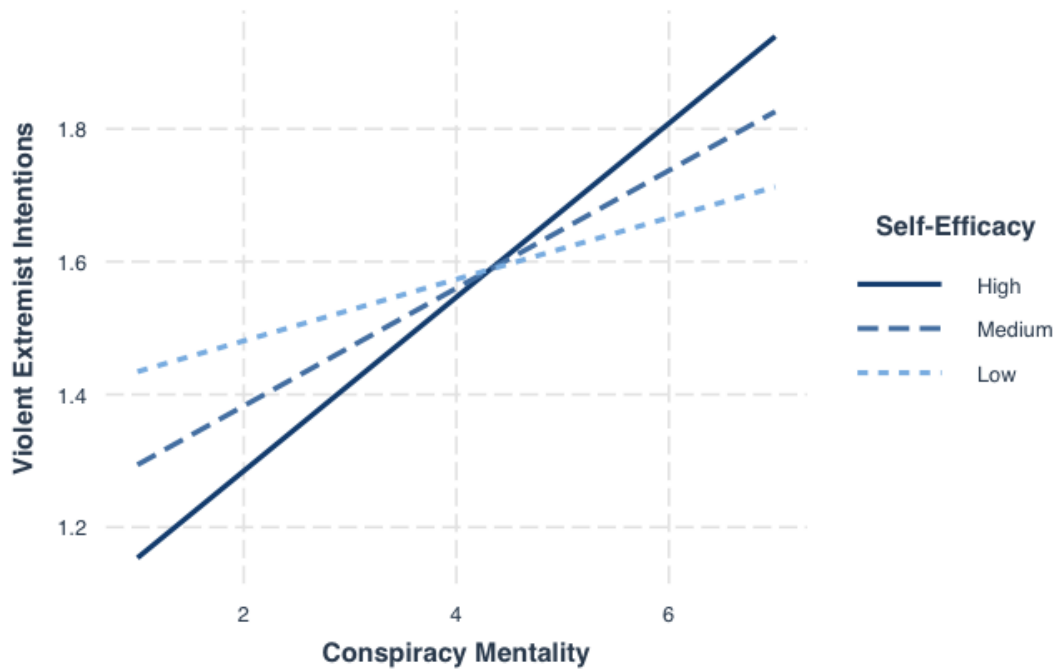
*Note.* Standardised regression coefficients are given. Robust standard errors are reported.  
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

#### 4.4.1 Self-efficacy

In line with the predictions, self-efficacy moderates the effect of conspiracy mentality on violent extremist intentions ( $\beta = .06, p < .05$ ; Table 4.2, Model 2). To illustrate the significant interaction of conspiracy beliefs and self-efficacy, simple slopes are computed. The plotted values of the predictor represent one standard deviation above, at the mean and one standard deviation below the mean using the procedures outlined by Aiken and West (1991). The simple slopes (Figure 4.1) show that when self-efficacy is high, conspiracy beliefs have strong positive effects on violent extremism ( $\beta = .13, p < .001$ ). These effects are attenuated when self-efficacy

is average ( $\beta = .09, p < .001$ ) and become non-significant for low levels of self-efficacy ( $\beta = .05, p > .05$ ).

**Figure 4.1.** Interaction between conspiracy mentality and self-efficacy in predicting violent extremist intentions.



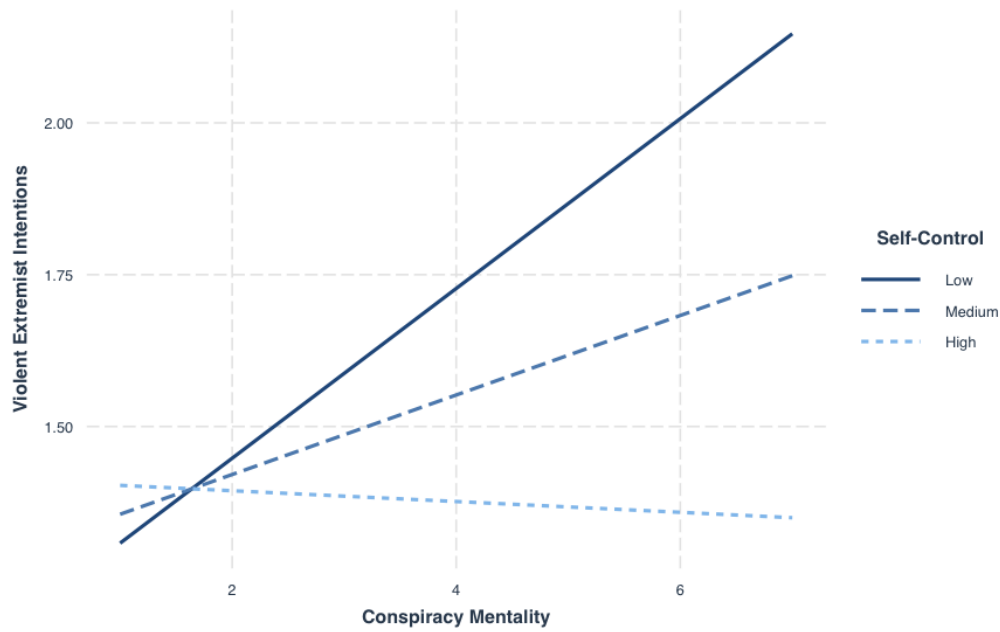
*Note.* Plotted values are  $\beta$ -values of the slopes at 1 SD above the mean (high), the mean (medium) and 1 SD below the mean (low).

#### 4.4.2 Self-control

The main effects of conspiracy mentality and self-control are estimated, as well as their interaction. The results confirm that the effects of conspiracy beliefs and violent extremism are conditional on individuals' levels of self-control. The interaction between conspiracy mentality and self-control proves to be significant in predicting violent extremist intentions ( $\beta = .11, p < .001$ ; Table 4.2, Model 3). Further, simple slope analysis is conducted to explore the significant interaction of conspiracy beliefs and self-control (Figure 4.2). Simple slopes are computed for the effects of high (-1 SD), average (mean) and low (+1 SD) self-control. To reiterate, responses were coded so that high scores on the scale indicate a low capacity for self-control. As shown by Figure 4.2, self-control strongly increases the effects of conspiracy beliefs on violent extremism among those scoring low in self-control ( $\beta = .14, p < .001$ ) and also for those with average levels of self-control ( $\beta = .07, p < .001$ ). For those high in self-control, the

relationship is negative, however this effect does not reach statistical significance ( $\beta = -.01, p > .05$ ).

**Figure 4.2.** Interaction between conspiracy mentality and self-control in predicting violent extremist intentions.

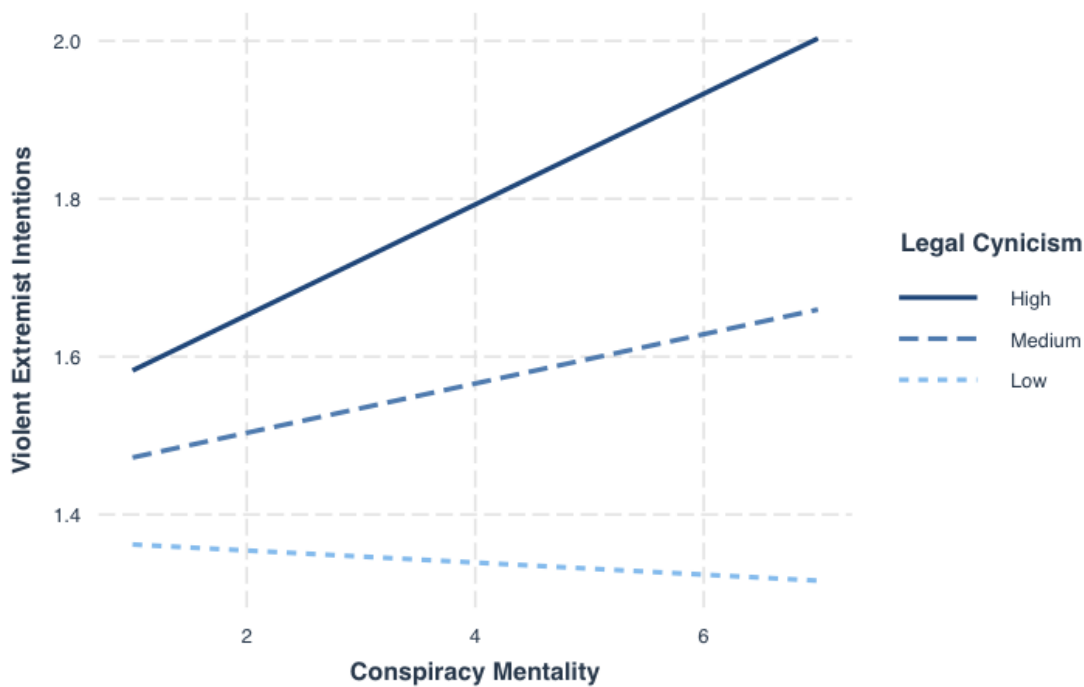


*Note.* Plotted values are  $\beta$ -values of the slopes at 1 SD above the mean (low), the mean (medium) and 1 SD below the mean (high).

#### 4.4.3 Legal Cynicism

Evidence is found for the moderating effects of legal cynicism on the relationship between conspiracy beliefs and violent extremist intentions. Conspiracy beliefs show a significant interaction with legal cynicism ( $\beta = .06, p < .05$ ; Table 4.2, Model 4). The simple slope analysis (Figure 4.3) for legal cynicism indicates that conspiracy beliefs are positively related to violent extremism for those high in legal cynicism (+1 SD;  $\beta = .07, p < .05$ ) but negatively associated with those scoring low in legal cynicism, however this effect is not significant ( $-1$  SD;  $\beta = -.01, p > .05$ ). For those with average levels of legal cynicism, simple slopes indicate a positive but non-significant effect (mean;  $\beta = .03, p > .05$ ).

**Figure 4.3.** Interaction between conspiracy mentality and legal cynicism in predicting violent extremist intentions.



*Note.* Plotted values are  $\beta$ -values of the slopes at 1 SD above the mean (high), the mean (medium) and 1 SD below the mean (low).

## 4.5 Discussion and Limitations

The nexus between conspiracy theories and extremism is not a new phenomenon, yet the extent to which these conspiracy theories have been prevalent within recent terrorist attacks is stark. Relatedly, research is increasingly pointing to the crucial role of conspiracy theories in advancing the agendas of extremist groups, such as white supremacist groups (Soufan Center, 2019). This chapter's results confirm this position. The study demonstrates that people who hold a conspiracy mentality, which is characterised by a mindset or general propensity to endorse conspiracy theories, show stronger intentions to engage in violent extremism. These findings suggest that perceiving the world as ruled by malevolent and illegitimate forces may be driving extremist violence as it provides justification to use illegal means and normative political engagement seems futile (Imhoff et al., 2019).

According to what was found in the previous systematic review, this study is the first nationally representative study to test the effects of conspiracy mentality on individuals' intentions to engage in violent extremism and to examine how this relationship is contingent on several individual differences. The results reveal that individuals with varying levels of self-



efficacy, self-control as well as legal cynicism are differentially vulnerable to the effects of conspiracy beliefs. The first conditional analysis examined how varying levels of perceived self-efficacy may change the effect of conspiratorial thinking on individuals' violent extremist intentions. Self-efficacy is a fundamental component of human agency and influences individuals' judgements of being capable to act upon different types of motivation, aims or stressors affecting their lives (Bandura, 1997). Numerous studies have found that self-efficacy is associated with various positive outcomes, including academic success, mental and physical well-being as well as recovery from injury and illness (Schwarzer et al., 2005; Talsma et al., 2018). These studies support the idea that self-efficacy is linked to normative as well as prosocial intentions and behaviours and thus, based on this line of research, high self-efficacy may be expected to constitute a protective factor for the endorsement of and engagement in violent extremist behaviour.

However, the findings suggest a more complicated picture. Notably, the simple slopes show an intersection for low, mean and high levels of self-efficacy. People scoring high in self-efficacy indicate fewer extremist intentions when conspiracy beliefs are low compared to those with average and low self-efficacy. This finding is consistent with the argument that high self-efficacy is associated with normative intentions (Schwarzer & Luszczynska, 2006). However, for individuals with high self-efficacy the slope increases at a higher rate, which eventually leads to the overlap of slopes. Therefore, the results suggest that those individuals scoring highly in both, conspiracy beliefs and self-efficacy beliefs, may feel more capable of taking violent action in order to redress their grievances. When self-efficacy is interacting with conspiracy beliefs, violent extremism becomes more likely. These findings suggest that stronger beliefs in one's own capabilities are not necessarily linked to positive outcomes, but they entail the potential to significantly increase non-normative and violent behaviour for individuals who hold certain risk factors for violent extremism, such as conspiracy beliefs.

Therefore, caution is required in regard to countering violent extremism (CVE) intervention programs which promote self-efficacy in order to make individuals more resilient. More specifically, CVE approaches should aim to strengthen individuals' self-efficacy in relation to prosocial and normative intentions and subsequent behaviours. While working towards building a greater capacity of self-efficacy, they need to simultaneously tackle those underlying grievances as otherwise individuals might use their newly gained self-efficacy beliefs to act upon those strains. Yet, we have to take into account that a generalised measure of self-efficacy was utilised, which does not consider any task-specific efficacy beliefs. While general self-efficacy is related to individuals' confidence in their capabilities to take action

when they face obstacles or encounter challenging situations (Bandura, 1990b), future research would benefit from including a measure which operationalises self-efficacy in a situation-specific manner.

The second conditional analysis revealed that conspiracy beliefs affect violent extremist intentions particularly when individuals have low self-control. Conversely, when the ability to exercise self-control is well developed, having conspiracy beliefs is less influential upon violent extremist intentions. Hence, for individuals with a conspiracy mentality, low self-control presents a risk-factor, whereby a weaker capacity for self-control leads to higher extremist intentions. Importantly, the combined effect of low self-control and high conspiracy thinking results in more extremist intentions. That is, individuals with low self-control and who also hold conspiracy beliefs are more susceptible to violent extremism than those with high self-control. By contrast, when conspiratorial beliefs are high, the co-occurrence of high self-control mitigates the impact upon violent extremism. In this sense, self-control can be defined as an 'interactive protective factor' (Ttofi, Farrington, Piquero, & DeLisi, 2016b) or 'buffering protective factor' (Hall et al., 2012). Such forms of protective factors should be emphasised in preventive measures focused upon 'at risk' populations (e.g., selective strategies) (Hall et al., 2012). In this case, strategies focused upon self-control in conspiracy believing communities should dampen the risk of escalation to violence.

The third conditional analysis confirms an interaction between conspiracy beliefs and legal cynicism in the prediction of violent extremism. Conspiracy beliefs affect extremist intentions when law-related morality is low. Conversely, high levels of law-related morality may act as an interactive protective factor against the willingness to engage in violent extremist behaviour, despite holding strong conspiracy beliefs. As with self-control, selective strategies focused upon increased law-related morality within conspiracy belief communities should lessen the risk of future violence.

This chapter's results should encourage further research into the protective factors against violent extremism (Lösel et al., 2018). In particular, I reiterate Rutter's (1987) position of emphasising the interactional nature of risk and protective factors. Notably, it is in such adverse circumstances (e.g., the experience of risk factors) where the true value of a protective factor becomes apparent and this has a multitude of insights for how we should design interventions focused on countering violent extremism. The wealth of research on conspiracy theories clearly shows that simply debunking a theory is insufficient. This resembles programs solely focused upon counter-narratives within CVE campaigns. Instead, interventions should additionally focus upon a range of psychological, attitudinal and cognitive factors which led

the conspiracy theory/violent extremist ideology to take hold in the first place. Successfully debunking a theory or an ideology without addressing these vulnerabilities will likely only lead to the adoption of a different conspiratorial world view which addresses the individual's same psychological needs outlined in the theory section above.

#### **4.6 Conclusion**

The results highlight that it is insufficient to solely analyse the independent effects of various risk factors for violent extremism. Instead, it is suggested that most studies analysing drivers of violent extremism should incorporate the conditional and contextual nature of those factors into their analysis. In fact, these individual differences may explain why certain individuals engage in violence while others, holding for instance similar conspiracy beliefs, do not. Therefore, placing a larger focus on these conditional effects may facilitate a more comprehensive understanding of the social cognitive and neuropsychological mechanisms underlying radicalisation processes, which might help explain why certain people with extremist attitudes rather than others will end up engaging in violent behaviour. As Schlegel (2019) previously has pointed out, varying levels of self-efficacy may be a crucial factor in determining how likely it is that certain individuals will eventually engage in extremist violence. Similarly, the results show that for individuals with a conspiracy mentality, individual differences have strong effects on violent extremist intentions. These conditional risk and protective factors are important for understanding the link between conspiracy beliefs and violent extremism and may have important implications for violent extremism risk assessment and management. Preventing individuals with high conspiracy beliefs from becoming violently radicalised may necessitate tailored, rather than broadly generalised policies. If multiple trajectories into violent extremism exist, there should be multiple policies to encourage prevention. Not all policies will have relevance to all individuals exhibiting similar conspiracy mentalities, as their constellation of other risk and protective factors likely differs. Hence, future studies should test for further contextual and situational influences on the relationship between conspiracy beliefs and violent extremism.

## Chapter 5: Measuring Individuals' Misogynistic Beliefs: Development and Validation of the Misogyny Scale

While chapter 4 highlighted that recent far-right terrorist attacks have been largely motivated by conspiracy theories, the same perpetrators have also demonstrated substantial misogynistic motives within their manifestos. Yet, despite increasing public attention and scholarly interest on the relationship between misogyny and (extremist) violence, no validated psychometric tool that measures misogyny amongst males and females exists. Developing psychometrically sound instruments represents a fundamental part of conducting rigorous quantitative research. Hence, this chapter sought to overcome this limitation. The misogyny scale was developed and validated across three studies, based on a nationally representative survey ( $n = 1500$ ). Initial items were generated from an extensive literature search and subsequently derived from validated scales assessing internalised misogyny, hostile sexism and hostility towards women. Construct and measurement validity were established across several studies. An exploratory factor analysis (Study 1,  $n = 750$ ) established the factor structure of the 10-item misogyny scale. In study 2 ( $n = 750$ ), the 10-item structure was replicated via confirmatory factor analysis. The misogyny scale displayed good convergent (i.e., significant and strong relationship with male sexual entitlement, masculinity related violent beliefs and willingness to use violence) and discriminant validity (i.e., no relationship with analytical thinking). In study 3 ( $n = 750$ ), measurement invariance across gender and age groups was established. This allows researchers to deploy the scale amongst male and female individuals, across different age groups as well as to assess latent mean differences. Significant latent mean differences for all three latent factors emerged between male and female participants, demonstrating that men had significantly stronger misogynistic attitudes than women ( $MDiff_1 = -.482^{***}$ ;  $MDiff_2 = -.324^{***}$ ;  $MDiff_3 = -.197^{***}$ ). The latent mean differences ranged from small (Cohen's  $d_2 = .27$ ; Cohen's  $d_3 = .19$ ) to medium effect sizes (Cohen's  $d_1 = .38$ ). The strongest latent mean differences between age groups were found for the factor 'manipulative and exploitative nature of women'. Older age groups reported significantly stronger attitudes relating to this factor than younger participants. The misogyny scale will allow researchers to explore the psychological antecedents and consequences of misogyny among population samples and the subsequent findings may inform interventions for preventing violent (extremist) propensity development.

## 5.1 Introduction

Public discourse on misogyny and its consequences is growing. Broad-based social movements (e.g., Me Too), violence prevention awareness programs, and highly publicised instances of harassment and violence against women have consistently brought discussions of misogyny and related constructs (e.g., toxic masculinity) to the fore. In the United Kingdom, there are proposals to make misogyny a hate crime under the Domestic Abuse Bill currently under consideration. At the same time, different research designs demonstrate and argue the link between misogyny and domestic/family violence (Blake, O’Dean, Lian, & Denson, 2021), sexual violence (Munsch & Willer, 2012; Leone & Parrott, 2019), harassment (Marwick & Caplan, 2018), coercive control (Dragiewicz et al., 2018), the celebration of violence (Scaptura, 2019), and violent fantasies (Scaptura & Boyle, 2020).

Increasingly, studies on violent extremism also highlight the role of misogyny (Díaz & Valji, 2019; Hoffman Ware, & Shapiro, 2020). Misogynistic worldviews form a core part of the extreme right’s recruitment (Bjork-James, 2020; Center on Extremism, 2019) and misogyny has been a fundamental motive within recent far right terrorist attacks (Wilson, 2020), adding to the argument that misogyny may constitute a precursor for different forms of mass murder, including school shootings (Freeman, 2017; Neiwert, 2017; Wilson, 2018; Lyle & Esmail, 2019; Muschert, 2007; Tyberg, 2016). Most evidently, misogyny is central to the ‘involuntary celibate’ movement. The violent fringe of this online subculture holds extreme misogynistic attitudes and advocates for violence against women (Ging, 2017; Maxwell, Robinson, Williams, & Keaton, 2020). Since 2014, movement advocates, colloquially known as ‘incels’, conducted several acts of mass murders in the United States and Canada. These attacks were explicitly motivated by hatred towards women. Perpetrators expressed that they sought vengeance for being unable to find a romantic partner and for being rejected by women (Bratich & Banet-Weiser, 2019; Baele, Brace, & Coan, 2019).

Despite the increased public attention and scholarly research, the definitional boundaries of misogyny remain quite loose. Given this, it motivates a finer-grained measurement of misogyny, as well as an exploration of misogyny’s psychological antecedents and consequences. Surprisingly, no validated psychometric tools that measure misogyny amongst males and females exist.<sup>11</sup> This renders it vital to develop a tool that adequately measures the construct of misogyny. Hence this study sought to develop a psychometric scale assessing the construct of misogyny across three studies.

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<sup>11</sup> For an internalised misogyny scale for homosexual women see Piggott (2004).

## 5.2 Study 1

Study 1 attempted to gain a conceptual and theoretical understanding of misogyny. Psychometrically sound measures are fundamental to quantitative research. These tools have to be valid and reliable in order to generate robust findings. Yet, proper scale development techniques and reporting procedures are often absent or fragmented (Carpenter, 2018). Resultingly, methodological inconsistencies mean that standards of scale development vary (Davidson, Shaw, & Ellis, 2020). This analysis therefore draws from Carpenter's (2018) ten steps for scale development to introduce the misogyny scale. These ten steps are: (1) Research the intended meaning and breadth of the theoretical concept (2) Determine sampling procedure (3) Examine data quality (4) Verify the factorability of the data (5) Conduct common factor analysis (6) Select factor extraction method (7) Determine number of factors (8) Rotate factors (9) Evaluate items based on a priori criteria (10) Present results.

### 5.2.1 Qualitative Research

Step 1: *Research the intended meaning and breadth of the theoretical concept.*

#### *Theoretical and Conceptual Research for Scale Development*

The first step of the scale development process was to understand the meaning and breadth of the theoretical concept and subsequently, to be able to identify the potential dimensions of the construct and related items. If the scale dimensions and items adequately capture the intended representation of the abstract construct, meaningful measurement can be achieved (Carpenter, 2010; Chaffe, 1991). As such, it is important to ensure content validity of the construct before conducting the methodological applications and statistical analyses by taking several steps, such as trying to understand the extent of the construct and its dimension. Further steps include careful conceptualisation, such as finding suitable conceptual definitions, selecting appropriate conceptual labels for the overall constructs and its dimensions, as well as generating and refining items of the proposed scale. The analysis followed all of these steps as they have proven critical in the dimension identification and item generation process (DeVellis, 2012; Simms, 2008; Worthington & Whittaker, 2006).

The literature review intended to provide an overview of the concept of 'misogyny'. The decision was made to broaden the literature search to further include related concepts in order to get a more holistic view of the construct and thus, to achieve a greater theoretical and conceptual understanding. The labelling of the construct and potential subscales affect future interpretations of the concept (Carpenter, 2018). This study defines 'Misogyny' as the hatred

and devaluation of, hostility towards, and/or prejudice against women. However, the conceptualisation of misogyny does not include subtle sexism or gender bias in favour of men. Yet, theoretically and conceptually related concepts, such as hostile sexism and more general hostility towards women, were also included in the search. A literature search was conducted via Google Scholar on search items, such as “misogyny”, “hostile sexism” and “hostility and/ or hatred towards women”.

### *Scale Dimension and Item Generation*

The literature review process intended to bring together existing questionnaires that measure misogyny, hostile sexism or hostility towards women and consequently examine the different dimensions of the constructs and to identify potential subscales. While searching the literature for existing scales measuring the construct of misogyny, only one existing scale explicitly assessing misogyny was identified. However, the focus of this scale was different to the present analysis, as it was specifically developed to assess homosexual women’s *internalised* misogyny (Piggott, 2004). The search further identified validated scales measuring hostile sexism, such as the subscale ‘hostile sexism’ of the Ambivalent Sexism Inventory (Glick & Fiske, 1996), the Hostility Towards Women Scale (Check, Malamuth, Elias, & Barton, 1985), as well as the Modern Sexism Scale (Swim, Aiken, Hall & Hunter, 1995). The subscale ‘benevolent sexism’ of the Ambivalent Sexism Inventory (Glick & Fiske, 1996) was excluded, as only the hostile sexism subscale aligned with the theoretical conceptualisation of misogyny employed in this study. As such, the items were identified and developed based on the literature on misogyny specifically and sexism more generally. Several dimensions pertaining to the construct of misogyny and hostility towards women were identified, yet the most common ones appeared to be related to the distrust of women, the devaluation of women and the manipulative and exploitative nature of women.

### *Generating and Refining Items*

Several steps informed the compilation of items for the proposed scale. To set up the initial pool of items, the analysis started by listing the existing tools assessing misogyny and hostile sexism published up until 2020. After compiling 44 items from 4 existing instruments that measure misogyny or hostile sexism, each item was reviewed individually. In the next step, these measures were narrowed down. More specifically, items were either kept without changing them, modified (e.g., due to a slightly diverging conceptualisation), or removed (e.g., due to repetition/ redundancy or because they seemed unsuitable to capture the conceptual

definition) individual items. Five further items were added, pertaining to the manipulative and exploitative nature of women, as these attributes play a fundamental part in the present conceptualisation of misogyny, but had not been adequately assessed in previous measures.

#### *Feedback for Scale Item Refinement*

Before the main data collection, a pilot test ( $n = 40$ ) was conducted via Prolific in June 2020. Respondents were not sampled based on any preset requirements. The pilot test was run to reduce response burden and to assess the possibility of measurement error, which can arise due to complex phrasing or language, lack of clarity in questions or response categories as well as leading or biased questions (Ruel, Wagner, & Gillespie, 2016). Participants were specifically asked whether the wording or meaning of any of the items was unclear or needed refinement and whether they had any other comments relating to response burden. None of the participants indicated lack of clarity regarding the survey items nor did they indicate a sign of response burden. After reviewing the individual items, the pilot test and peer feedback discussions, 19 of the 49 items remained. These 19 items were generated in an effort to assess the latent construct of misogyny and to create a scale for research purposes. Following several scale content development stages, the main data collection process started.

### **5.2.2 Method EFA**

#### *Data Collection Procedure*

A large-scale general population survey was conducted in order to proceed with the scale development process. The primary purpose of this survey was to collect individual-level data on risk and protective factors for violent extremism. Yet, the secondary purpose was to collect data on the 19 items pertaining to the construct of misogyny and subsequently, to conduct the scale development and validation tests. Participants were recruited via Prolific. After completing the consent form, participants were asked to fill out the questionnaire. Unless stated otherwise, throughout all studies, all items were measured on a 7-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree). After completing the questionnaire, the respondents were thanked and debriefed. Participants received a small participation fee.

#### *Participants*

The main data collection took place in July 2020. Participants were part of a UK nationally representative sample (by age, gender, and ethnicity)  $n = 1500$ . The whole sample was split in



half in order to conduct an EFA on one half of the sample ( $n = 750$ ) and to run the CFA on the other half of the sample ( $n = 750$ ). In the EFA sample, 51.2% ( $n = 384$ ) identified as female and 48.8% ( $n = 366$ ) identified as male ( $M_{\text{age}} = 45.02$ ;  $SD_{\text{age}} = 16.46$ ). The majority of participants ( $n = 644$ ; 85.5%) indicated 'White' as their ethnicity. This was followed by 7.7% ( $n = 58$ ) who stated 'Asian', 2.9% ( $n = 22$ ) who identified as 'Black' and 2% ( $n = 22$ ) as 'Mixed', as well as 1.5% ( $n = 11$ ) of all respondents answered 'Other'.

#### *Step 2: Determine Sampling Procedure.*

The sample of  $n = 750$  exceeds previously recommended guidelines of a minimum of 300 participants (Henson & Roberts, 2006; Worthington & Whittaker, 2006). However, some call for abandoning the sample size logic and instead rely on item ratios as a way to determine a sufficient sample size (Guadagnoli & Velicer, 1988; Osborne, 2014). A minimum ratio of respondents to items (1:5 or 1:10) has been proposed (Gorsuch, 1983). However, Costello and Osborne (2005) suggest a ratio of 1:20 as their findings found that these sample sizes produced the most robust and correct solutions. The sample size translated into a 1:39 ratio, which allows us to achieve robust and generalisable results.

#### *Step 3: Examine Data Quality.*

After the data collection ended, the dataset was manually reviewed to ensure data quality and to examine any missing data. It was examined whether participants had missed attention checks and the completion time for each respondent was also reviewed. Participants were excluded from the data analysis if they missed more than one attention check or if they completed the survey more than two standard deviations quicker than the average survey completion time. The 'Bot Detection' review was also assessed. None of the 'participants' were flagged as potential bots. There was no missing data on the misogyny items.

An exploratory factor analysis was conducted in order to evaluate the factor structure of the 19 items that comprised the preliminary misogyny scale. The EFA was conducted in the software programme R. The R package 'psych' was used to run the EFA analyses (Revelle, 2020). Further reliability analyses were conducted with the R package 'multilevel' (Bliese, 2016). It was decided to apply principal axis factoring (PAF) rather than the maximum likelihood method, as the former constitutes a more robust method and is recommended when the normality assumption is violated (Costello & Osborne, 2005).

### 5.2.3 Results EFA

#### Step 4: *Verify the Factorability of the Data.*

The first step was to verify the factorability of the data. Bartlett's test of sphericity is expected to be significant at  $p < .05$ , and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy with a value of  $\geq .60$  is recommended before proceeding with the exploratory factor analysis (Pett, Lackey, & Sullivan, 2003; Tabachnick & Fidell, 2007). Bartlett's chi square test,  $\chi^2(19) = 503.91$ ,  $p < .001$ , and  $KMO = .95$  were inspected and demonstrated excellent common variance as well as multivariate normality of the set of distributions, thereby verifying the factorability of the misogyny scale. Second, the correlation matrix was inspected. Carpenter (2018) suggests that inter-item correlations should be  $\geq .30$ . Items that do not correlate as such should be considered for deletion, if it makes theoretical sense to do so. All items correlated  $\geq .30$ .

#### Steps 5-7: *Conduct Factor Analysis, Select Factor Extraction Method and Determine Number of Factors.*

Next, an EFA using the principal axis factoring (PAF) method was conducted and a parallel analysis was run in order to establish how many factors to retain. Parallel analysis is one of the most accurate factor retention methods (Hayton, Allen, & Scarpello, 2004; Kline, 2013; Velicer, Eaton, & Fava, 2000). Parallel analysis compares eigenvalues of the EFA sample against a randomly ordered data set. Factors are retained if the sample's eigenvalues are larger than the ones pertaining to the random dataset (Carpenter, 2018). Based on the parallel analysis scree plot (see supplementary materials Figure S.5.1), a 5-factor solution was initially extracted.

#### Step 8: *Rotate Factors.*

Next, an oblique rotation technique 'Promax' was chosen, based on the assumption that the factors should be related to one another. Promax has been argued to be more robust than the Direct Oblimin rotation method, and thus is recommended (Thompson, 2004).

#### Step 9: *Evaluate Items Based on a Priori Criteria.*

The scale item selection was based on several a priori criteria to decide which items to retain or delete. This was necessary in order to ensure consistency across the item selection process. Recommended guidelines were followed (e.g., Kline, 2013; Norris & Lecavalier, 2010;

Tabachnick & Fidell, 2007; Worthington & Whittaker, 2006). First, items had to display a minimum factor item loading in order to be retained. The minimum loading was set at  $> .50$ , although Carpenter (2018) suggests loadings above  $.32$  are acceptable. Further, items which cross-loaded on another factor above  $> .32$  were excluded. The next inclusion criterion referred to a minimum of three items per factor. Factors with less than three items would be discarded. Additionally, items were assessed based on their theoretical convergence. More specifically, it was examined whether individual items, loading onto the same factor, were found to demonstrate a clear conceptual grouping. Lastly, items were retained or omitted based on the principle of parsimony, which aimed to minimise the redundancy of wording or meaning across items. Non-parsimonious items were dropped (DeVellis, 2012; Hair et al., 2010; Mertler & Vannatta, 2017). The findings showed that two items demonstrated loadings  $< .50$  and were therefore removed. A further two items were omitted as they yielded cross-loadings  $> .32$ . One factor consisted of only two items and had to be excluded, as a minimum of three items per factor is required. Three items loaded onto the same factor, yet there was no clear conceptual grouping ('Women always feel offended'; 'I believe that most women do not tell the truth'; 'The intellectual leadership should be in the hands of men'). The latter of those items also showed a weak loading. These three items indicated poor theoretical convergence and therefore, they were also dropped. All non-excluded items and corresponding factors were found to be parsimonious. After deleting the above-mentioned items, 10 items were left (see Table 5.1 for the misogyny scale after EFA).

#### Step 10: *Present Results*

Finally, the EFA was re-run on the remaining 10 items using principal axis factoring analysis with Promax rotation. The results indicated a three-factor solution. Parallel analysis indicated that these three factors exceeded chance values and were above the simulated data (see Figure S.5.2 in the supplementary results). There were no cross-loadings ( $> .32$ ) or weak loadings ( $< .50$ ) remaining. As a result, 3 factors and 10 items remained, factor 1 was comprised of four items, while factor 2 and factor 3 consisted of three items each (see Table 5.1 for the finalised scale). The sums of squared loadings are the factors' variances after extraction. Sums of squared loadings of 2.90, 2.37, and 1.53 emerged, representing 29%, 23.7% and 15.3% of the variance, respectively, and explaining 68% of the total variance. Inter-item reliability indices examine scale homogeneity and assess the level of consistency between multiple items measuring the same underlying construct. For instance, corrected item-total correlations are widely accepted item indices to assess item-score reliability (Zijlmans, van der Ark, Tijmstra,

& Sijtsma, 2018). A value of  $\geq .30$  per item for the item-total correlation is considered to be sufficient (Nunnally & Bernstein, 1994), but researchers should aim for  $.30 - .70$  to achieve a greater degree of homogeneity (de Vaus, 2004). The corrected item-total correlations ranged between  $.57 - .80$ , indicating good scale homogeneity. The communalities of items was further assessed. Communalities ( $h^2$ ) are the sum of squared factor loadings for the variables. A communality indicates the proportion of each item's variance, which can be explained by the factors (e.g., the underlying latent construct). Communalities are considered satisfactory if they range between  $.40 - .70$ . All item communalities of the misogyny scale ranged between  $.44 - .82$  (Table 5.1).

Inter-item correlations were also examined as they present an essential element in conducting scale validity tests. Inspecting the inter-item matrix is a fundamental part of examining item redundancy. Cut-off scores are correlations below  $.20$  and over  $.80$ , yet ideally the values should range between  $.20-.50$  (Cohen & Swerdlik, 2005). The inter-item correlations varied between  $.32 - .76$  (see supplementary materials Table S.5.1). The misogyny scale yielded an average inter-item correlation of  $.55$ , which is satisfactory.

**Table 5.1.** Misogyny scale final item selection and factor loadings obtained with exploratory factor analysis (EFA) in Study 1 ( $n = 750$ ).

No.	Dimension	Item	Factors			M (SD)	Skewness	Corrected item-total correlation	Communalities $h^2$
			1	2	3				
1	Manipulative and exploitative nature of women	Women seek to gain power by getting control over men	.58			2.92 (1.64)	.46	.75	.63
2	Manipulative and exploitative nature of women	Women use their sexuality to manipulate men	.92			3.70 (1.75)	-.10	.69	.68
3	Manipulative and exploitative nature of women	Women exploit men for their own agendas	.88			2.75 (1.64)	.58	.81	.80
4	Manipulative and exploitative nature of women	If things don't go their way, women will play the victim	.82			2.85 (1.72)	.56	.80	.78
5	Distrust of women	It is generally safer not to trust women too much		.83		2.15 (1.40)	1.27	.74	.70
6	Distrust of women	When it comes down to it a lot of women are deceitful		.94		2.37 (1.52)	1.00	.79	.82
7	Distrust of women	I think that most women would lie just to get ahead		.61		2.46 (1.54)	.95	.81	.72
8	Devaluation of women	I think I get a raw deal from women in my life			.60	2.06 (1.33)	1.27	.62	.52
9	Devaluation of women	Sometimes women bother me by just being around			.96	1.71 (1.19)	2.01	.55	.67
10	Devaluation of women	I feel uncomfortable when a woman dominates the conversation			.54	1.68 (1.08)	1.79	.57	.44

*Note.* Further displayed are the communalities ( $h^2$ ), corrected item-total correlations and additional descriptive statistics for all scale items (Study 1).

The misogyny scale is a 3-factor scale, whereby factor 1 contains four items and factor 2 as well as factor 3 are each composed of three items, reflecting underlying aspects of a misogynistic belief system ( $M_{Scale} = 2.46$ ,  $SD = 1.15$ ). Each factor refers to a different, yet related aspect of the overall latent construct. The subscale naming logic aimed to identify an overarching ‘concept’ linking the individual items of each factor. The factor naming was also compared to the subscale labels of the hostile sexism and the internalised misogyny instruments (Glick & Fiske, 1995; Piggott, 2004). Factor 1 ‘*Manipulative and exploitative nature of women*’ included items that addressed individuals’ attitudes towards the manipulative and exploitative nature of women. Factor 2 ‘*Distrust towards women*’ reflected a general distrust towards women. Lastly, factor 3 ‘*Devaluation of women*’ focused on items which referred to a general devaluation and derogation of women. All factors showed a strong positive correlation with one another. The 10-item misogyny scale displayed good factor loadings, satisfactory inter-item reliabilities (i.e., communalities  $h^2$  and total-item correlations) as well as an excellent internal consistency (i.e., McDonald’s  $\omega$ ) for each subscale and thus, provides a psychometric instrument that represents misogynistic beliefs among a general population sample (see Table 5.2).

**Table 5.2.** McDonald’s  $\omega$ , means,  $SD$ s, and correlations between the three dimensions of the misogyny scale.

Subscale	McDonald’s $\omega$	M (SD)	Factor		
			1	2	3
1. Manipulative and exploitative nature of women	.91	3.05 (1.49)	-		
2. Distrust of women	.89	2.32 (1.35)	.75***	-	
3. Devaluation of women	.80	1.82 (.99)	.57***	.66***	-

Note. \*\*\* $p < .001$ . Correlation coefficient  $r$  is reported.

### 5.3 Study 2

In Study 2, the aim was to replicate the 3-dimensional factor structure of the misogyny scale via confirmatory factor analysis (CFA) and the convergent and discriminant validity of the scale was assessed to confirm the structural and external aspects of construct validity. More

specifically, the relationships between the misogyny scale and male sexual entitlement, masculinity related violent beliefs and willingness to use violence and analytical thinking were assessed. These constructs have been shown in past research to correlate with misogynistic and hostile sexist beliefs or conversely, no significant relationship has been found and/or there is no theoretical reason to hypothesise such a relationship. The internal consistency (i.e., composite reliability) of the scale was also examined along with the average variance extracted (AVE).

### 5.3.1 Method CFA

#### *Participants*

As mentioned above, participants were part of a UK nationally representative sample (by age, gender, and ethnicity)  $n = 1500$  conducted in July 2020. The CFA was run on the other half of the total sample ( $n = 750$ ). In the CFA sample 51.3% ( $n = 385$ ) identified as female and 48.7% ( $n = 365$ ) identified as male ( $M_{age} = 44.82$ ;  $SD_{age} = 15.36$ ). Out of all participants, 84% ( $n = 630$ ) stated 'White' as their ethnicity, 7.6% ( $n = 57$ ) answered 'Asian', 4.4% ( $n = 33$ ) identified as 'Black', 2.1% ( $n = 16$ ) as 'Mixed', as well as 1.9% ( $n = 14$ ) answered 'Other'. The ratio of respondents to items was again 1:39, which exceeds the 10–20 participants per item rule when conducting an CFA and thus, should ensure robust results.

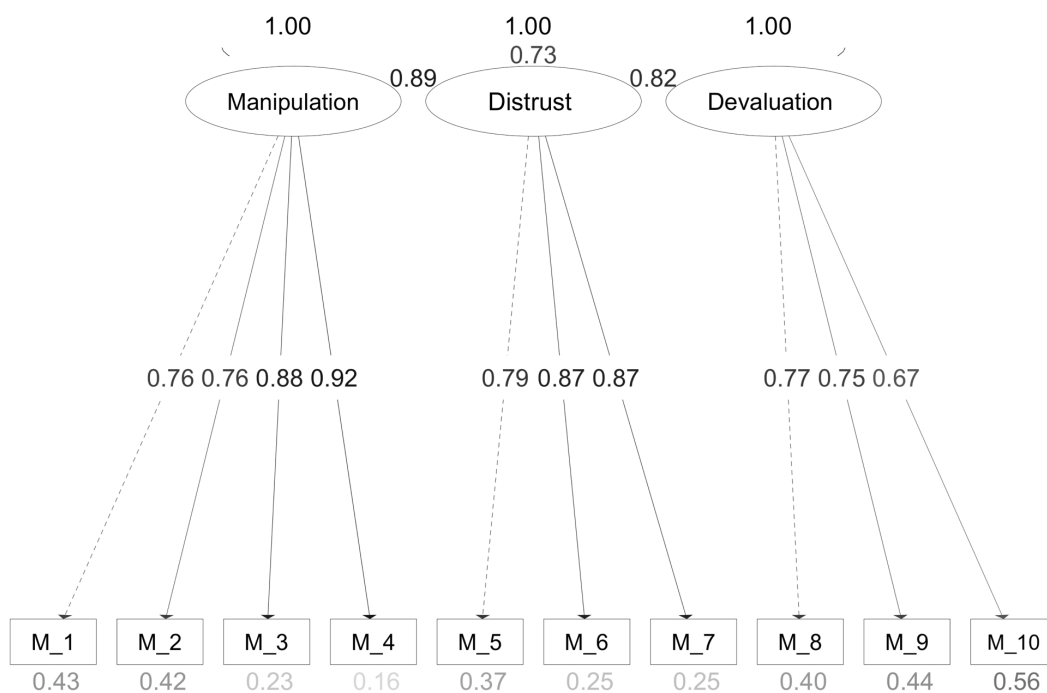
#### *Procedure*

To validate the newly developed three-dimensional construct of misogyny, a CFA was conducted. The CFA was run on the second half ( $n = 750$ ) of the total sample ( $n_{Total} = 1500$ ) in order to confirm the structure of the proposed scale, which was obtained from the EFA analysis (Study 1) (Costello & Osborne, 2005; Kline, 2013; Worthington & Whittaker, 2006). The models were run in the software program R using the packages 'Lavaan' (Rosseel, 2021) and 'SemTools' (Jorgensen, 2020). Multiple fit indices (i.e.,  $\chi^2/df$ , CFI, TLI, RMSEA, SRMR) were evaluated in order to accept or reject the proposed and alternative models. Model fit was accepted if: the  $\chi^2/df$  ratio  $< 3$  (Byrne, 2001), Comparative Fit Index (CFI)  $\geq .90$ , Tucker Lewis index (TLI)  $\geq .90$ , Root Mean Square Error of Approximation (RMSEA)  $\leq .08$ , and Standardized Root Mean Square Residual (SRMR)  $\leq .08$  (Hu & Bentler, 1999). A robust estimator was applied as the data displayed a skewed distribution, violating the normality assumption. Therefore, a maximum likelihood estimation with robust standard errors and a Satorra-Bentler scaled test statistic was conducted (Lavaan, 2021). Where available, robust fit indices will be reported.

### 5.3.2 Results CFA

The 3-factor model showed very good fit:  $\chi^2(32) = 94.55, p < .001, \chi^2/df$  ratio = 2.95;  $CFI_{Robust} = .982, TLI_{Robust} = .975, RMSEA_{Robust} = .051; SRMR = .029$  and thus, model fit was accepted. Factor loadings ( $\lambda_{1-9}$ ) ranged from .71 - .92, demonstrating strong factor loadings (see Figure 5.1).

**Figure 5.1** Confirmatory factor analysis of the 3-factor Misogyny Scale (Study 2).



*Note.* Standardised coefficients are shown. All beta coefficients were statistically significant (all  $p < .05$ ).

Further, to ensure that the proposed model was the best fitting model, the 3-dimensional scale was compared to a unidimensional model, whereby all items loaded onto one factor. As expected, the 1-factor model displayed poor model fit:  $\chi^2(35) = 337.35, p < .001, \chi^2/df$  ratio = 9.64;  $CFI_{Robust} = .913, TLI_{Robust} = .889, RMSEA_{Robust} = .107; SRMR = .055$ . An ANOVA was run on both models to see whether the  $\chi^2$  test was significant, which would indicate a statistically significant worse fit of the alternative model, and the alternative fit indices across models were compared. Due to the non-normality of the data, the Satorra-Bentler scaled chi-



square difference test was applied (Satorra & Bentler, 2001). A significant  $\chi^2$  test and a significant drop in fit indices:  $\Delta CFI = .01$ ,  $\Delta TLI = .01$ ,  $\Delta RMSEA = .015$ ,  $\Delta SRMR = .03$  would indicate that the alternative 1-factor model fit the data significantly worse and thus, would be rejected. Changes in  $\chi^2$  parameters and fit indices are displayed as ‘ $\Delta$ ’. The  $\chi^2$  test was significant at  $p < .001$ ,  $\Delta\chi^2 = 242.80$ ;  $\Delta df = 3$  and significant drops in fit indices emerged:  $\Delta CFI_{Robust} = .069$ ,  $\Delta TLI_{Robust} = .086$ ,  $\Delta RMSEA_{Robust} = .056$ ,  $\Delta SMRM = .026$ . The 3-factor model yielded significantly better fit rather than the alternative factor solution. The original 3-factor construct was accepted and the 1-factor model was rejected. Therefore, the misogyny scale is best conceptualised as a second order model with three underlying factors, representing three underlying dimensions of misogynistic attitudes related to: (1) the manipulative and exploitative nature of women, (2) the distrust towards women, and (3) the devaluation of women.

The composite reliability (CR), McDonald’s  $\omega$ , is a less biased estimate of reliability than Cronbach’s alpha ( $\alpha$ ) as it takes into account the strength of association between items and constructs as well as item-specific measurement errors (Zinbarg, Revelle, Yovel, & Li, 2005). An acceptable value for McDonald’s  $\omega$  is .7 and above (Hayes & Coutts, 2020). The internal consistencies for each factor of the misogyny scale ranged from good to excellent. Further, the AVE captures the variation that a latent construct is able to explain in the observed variables to which it is theoretically related (Farrell, 2010). Values  $\geq .6$  are considered good, whereas values  $\geq .5$  are acceptable (Fornell & Larcker, 1981). The AVE was .60 or above for all factors. Next, correlations between all factors were moderate to strong. Table 5.3 shows the correlation coefficients between all factors, the composite reliability McDonald’s  $\omega$ , the average variance extracted (AVE) and the means and SDs per factor. Correlations between manifest variables as well as latent correlations between latent factors can be found in the (Table S.5.1. and Table S.5.2.).

**Table 5.3.** Correlations between the three dimensions of the misogyny scale and composite reliability, means and SDs (Study 2).

<b>Dimensions</b>	<b>McDonald’s <math>\omega</math></b>	<b>M (SD)</b>	<b>AVE</b>	<b>F1</b>	<b>F2</b>	<b>F3</b>
F1	.90	3.14 (1.48)	.69***	-		
F2	.88	2.36 (1.34)	.71***	.79***	-	
F3	.77	1.86 (1.05)	.60***	.62***	.68***	-

Note. \*\*\* $p < .001$ . Correlation coefficient  $r$  is reported. AVE = Average variance extracted.

### 5.3.3 Convergent and Discriminant Validity

Convergent and discriminant validity assessment are both fundamental aspects of construct validity (Piedmont, 2014). *Convergent validity* refers to how strongly a construct is related to measures of other latent constructs that are theorised to have causal relationships. Conversely, discriminant validity describes how well a measure performs in not being associated with theoretically dissimilar and unrelated concepts (Chin & Yao, 2014; Gregory, 2007).

To test whether the misogyny scale has convergent validity, constructs that have been shown to positively correlate with misogynistic and hostile sexist beliefs were explored (e.g., *sexual entitlement*, Hill & Fischer, 2001; *tendency to seek revenge*, Pina, Holland, & James, 2017; *hypermasculinity*, Johnson, & Knight, 2000; *physical aggression*, Forbes, Adams-Curtis, & White, 2004). As anticipated, misogyny was positively correlated with sexual entitlement ( $r = .45, p < .001; M_{\text{SexualEntitlement}} = 1.70, SD = 0.91$ ) and tendency for revenge motivation ( $r = .47, p < .001; M_{\text{Revenge}} = 2.49, SD = 1.33$ ). Additionally, misogyny was positively correlated with masculinity related violent beliefs ( $r = .44, p < .001; M_{\text{ViolentBeliefs}} = 1.76, SD = .91$ ) as well as willingness to engage in physical aggression ( $r = .38, p < .001; M_{\text{ViolentIntentions}} = 1.80, SD = 1.03$ ). Next, to examine discriminant validity, the relationship with a construct where no relationship is expected was explored. The findings confirmed that there was no significant correlation between misogyny and a measure of analytical thinking ( $r = -.06, p > .05, M_{\text{AnalyticalThinking}} = 5.13, SD = .94$ ).

## 5.4 Study 3

The third study was further designed to establish the generalisability aspect of construct validity, i.e., *measurement validity*. Measurement invariance tests were conducted in order to ensure that the scale operates equivalently across comparison groups (Wang, Willett, & Eccles, 2011), and subsequently latent mean differences were estimated. Measurement invariance can establish whether group differences represent accurate mean differences rather than measurement bias (Dimitrov, 2010). More specifically, it was examined whether there were significant gender and age group differences in regard to misogynistic attitudes. It was also explored whether latent mean differences between younger and older individuals exist.

### 5.4.1 Measurement Invariance and Latent Mean Comparisons

Measurement invariance represents a fundamental step within the construct validation process. Self-report questionnaires consist of individual items, which are developed to assess an

underlying latent construct. To be valid, (i.e., that the test is not biased against one group or another), measurement invariance has to be demonstrated (van de Schoot, Lugtig, & Hox, 2012). Measurement invariance examines the psychometric equivalence of an instrument across groups or time and assesses whether a tool displays the same psychometric properties across heterogeneous groups (Chen, 2007). If a questionnaire measures an identical construct with the same structure and meaning across groups or time points, the assessment instrument is called measurement invariant (van de Schoot, Lugtig, & Hox, 2012). Conversely, if a psychometric construct demonstrates measurement noninvariance, it suggests that the instrument has a different structure or meaning to different groups (e.g., male and female participants) or across different measurement points (e.g., pre-test and post-test), and thus the tools cannot be meaningfully tested or interpreted across groups or across time (Putnick & Bornstein, 2016).

Measurement invariance analysis examines whether the factor loadings and intercepts/thresholds, from which the latent factor scores are created, are equal across groups (Meredith, 1993). Therefore, it is required to establish measurement invariance prior to testing for group mean differences of latent constructs (Putnick & Bornstein, 2016) as latent means cannot be adequately assessed and compared when measures are noninvariant (Cheung & Rensvold, 2002). This refers to a key issue of analyses comparing group means of latent constructs. Observed composite scores on which most group comparison analyses (e.g., T-tests, ANOVAs) are based, cannot simply be equated with the latent or true means of the underlying construct. Instead, the relationship between an observed mean and the latent factor mean is a probabilistic function, which includes two further important parameters - the indicator intercepts/thresholds and the factor loadings - which link individual indicators to the latent construct (Steinmetz, 2010; Sass, 2011). Yet, it is common practice to compare means and other statistics of latent constructs across groups without establishing strong factorial invariance (i.e., establishing that factor loadings and intercepts/thresholds are equal across groups or measurement occasions). The violation of the measurement invariance assumption can lead to inaccurate inferences of group comparisons (Millsap & Meredith, 2007; Vandenberg & Lance, 2000; Yuan & Chan, 2016). For instance, when measurements are non-invariant across groups, the observed group mean difference may simply be due to differential meaning or understanding of the construct or particular items across groups (Sass, 2011).

## 5.4.2 Method Measurement Invariance

### *Participants*

The measurement invariance tests as well as the latent mean comparisons are based on the same sample as study 2.

### *Procedure*

All analyses within study 3 were run in the software program R using the packages ‘Lavaan’ (Rosseel, 2021) and ‘SemTools’ (Jorgensen, 2020). The analysis tested for strong factorial invariance across gender and age groups. Measurement invariance is assessed within the framework of multiple-group confirmatory factor analysis (MGCFAs). This procedure involved testing for configural, measurement, and structural invariance (e.g., equality of group means) (for an outline of the full procedure see Chen, Sousa, & West, 2005; Putnick & Bornstein, 2016). The MGCFAs process consists of multiple hierarchically nested confirmatory factor analyses by incrementally increasing levels of group equality constraints (e.g., constraining factor loadings and thresholds across groups). Typically, model evaluation includes testing whether the differences between these models are statistically significant and/or assessing the change in magnitudes of fit indices to see if more restricted models perform less well, suggesting that instruments are noninvariant (Gregorich, 2006; Kuhn & Holling, 2009). More specifically, to decide whether invariance can be confirmed or not, the majority of analyses either use the chi-square difference test ( $\Delta\chi^2$ ) and/or examine the change in magnitudes of accepted fit indices (i.e.,  $\Delta\text{AFI}$ ) between two nested models: (1) a *constrained model* (invariance assumed) and (2) an *unconstrained model* (no invariance assumed for any parameters), such as factor loadings, intercepts/ thresholds or residual error variances (Dimitrov, 2010).

A significant limitation of the  $\chi^2$  test is its inherent sensitivity to reject the null hypothesis when analyses include large samples as well as complex models. Chi-square difference tests have been found to reject adequate models if the sample size is large but conversely, fail to reject poor models if the sample is rather small (van de Schoot et al., 2016). Due to the large sample size and the relatively complex model structure of the misogyny scale, a multi-dimensional construct with three latent underlying factors, it was decided to employ alternative fit statistics, such as the CFI, TLI, RMSEA and SRMR, which adjust for sample size and model complexity. This procedure is increasingly employed within MGCFAs analyses and researchers recommend applying this approach if models are based on large samples and

contain a complex structure (e.g., see Chen, 2007; Cheung & Rensvold, 2002; Rutkowski & Svetina; 2014).

Hence, the changes in model fit statistics for the invariance models were compared to the previous, less restrictive model and the overall model fit for each individual model was evaluated. The  $\Delta$ CFI,  $\Delta$ TLI,  $\Delta$ RMSEA,  $\Delta$ SRMR (rather than  $\chi^2$  difference test) was compared and the cut-off criteria for model evaluation were based on recommendations made by Chen (2007). As such, acceptable model fit for more restrictive invariant models are:  $\Delta$ CFI < 0.01,  $\Delta$ TLI < 0.01,  $\Delta$ RMSEA < 0.015, and  $\Delta$ SRMR < 0.03 for metric invariance (i.e., equal factors loadings) and  $\Delta$ CFI < 0.01,  $\Delta$ TLI < 0.01,  $\Delta$ RMSEA < 0.015, and  $\Delta$ SRMR < 0.01 for scalar invariance (i.e., equal items intercepts). Yet, the  $\Delta \chi^2(\Delta$ df) is reported for transparency reasons (see supplementary materials Table S.5.1). A Satorra-Bentler scaled (mean-adjusted) chi-square difference test ( $SB\chi^2$ ) was applied due to violations of the normality assumption of the data. The  $SB\chi^2$  is the normal  $\chi^2$  divided by a scaling correction to improve the approximate chi-square under non-normality (Satorra & Bentler, 2001). Due to the non-normal distribution of the data, all MGCFA models were run with a robust estimator, MLM, which applies maximum likelihood parameter estimates with standard errors and a mean-adjusted chi-square test statistic that are robust to non-normality (Lavaan, 2021).

### 5.4.3 Results

#### 5.4.3.1 Measurement Invariance - Gender

First, separate CFAs for both male and female groups were run in order to assess the factor loadings and fit indices before proceeding with the multigroup confirmatory analyses. Findings indicated strong factor loadings and good fit indices for each group, suggesting adequate factorial validity and thus, allowed the study to pursue the measurement invariance tests (see supplementary materials Table S.5.4 for an overview of measurement invariance results). Next, configural invariance, i.e., form invariance, was tested, which examines the invariance of the model configuration, which is another prerequisite before testing for measurement invariance. The configural invariance analysis assesses the factor structure of latent constructs and a baseline model is estimated for each group. During configural invariance no parameters are constrained to be equal and the patterns of free and fixed parameters of the model are examined. If the number and pattern of factors and indicator loadings are equal across groups, configural invariance is supported (Dimitrov, 2010; Vandenberg & Lance, 2000). The fit indices for the configural invariance model showed good model fit:  $\chi^2(64) = 142.36, p < 0.001; \chi^2/df$  ratio =

2.22;  $CFI_{Robust} = .978$ ,  $TLI_{Robust} = .969$ ,  $RMSEA_{Robust} = .057$ ;  $SRMR = .032$ , confirming configural invariance across genders. Configural invariance justified the evaluation of more restrictive invariance models.

The following step involved testing for metric invariance, (i.e., the equivalence of individual item loadings on the latent factors). Metric invariance is tested by constraining factor loadings to be equivalent across groups (Van de Schoot et al., 2012). Findings of the metric invariance test showed that the model fit the data well:  $\chi^2(71) = 167.03$ ,  $p < 0.001$ ;  $\chi^2/df$  ratio = 2.35;  $CFI_{Robust} = .974$ ,  $TLI_{Robust} = .967$ ,  $RMSEA_{Robust} = .060$ ;  $SRMR = .050$ . The change of fit indices, i.e.,  $\Delta CFI = -.004$ ,  $\Delta TLI = -.002$ ,  $\Delta RMSEA = -.003$  as well as  $\Delta SMRM = -.018$  between the configural and metric invariance model were all within the thresholds outlined above, supporting metric invariance across men and women. Next, tests for scalar invariance were conducted. Scalar invariance assesses the equivalence of item intercepts or indicator means across groups. This is tested by constraining item intercepts to be equivalent in the respective groups (Chen et al., 2005; Putnick & Bornstein, 2016). Invariance testing comparing female and male individuals suggested good model fit across all indices at the scalar level:  $\chi^2(78) = 207.12$ ,  $p < 0.001$ ;  $\chi^2/df$  ratio = 2.66;  $CFI_{Robust} = .971$ ,  $TLI_{Robust} = .963$ ,  $RMSEA_{Robust} = .063$ ;  $SRMR = .053$ . Evaluation of scalar invariance showed acceptable changes in fit indices:  $\Delta CFI = -.003$ ,  $\Delta TLI = -.004$ ,  $\Delta RMSEA = -.003$  as well as  $\Delta SMRM = -.003$ . The findings confirmed strong factorial invariance of the misogyny scale, indicating that the scales measured comparable constructs among males and females.

#### *5.4.3.2 Latent Mean Differences - Gender*

Once measurement invariance for the misogyny scale across men and women was confirmed, structural invariance (i.e., the equality of latent factor means across gender groups) was tested. More specifically, it was examined whether there were any latent mean differences on the three latent factors between female and male individuals. If the factor means in the reference group are fixed to zero, the estimated latent factor means in the other groups show the relative differences between the groups (Chiu, Tsai, & Liang, 2015; Sass, 2011). The male group in the analyses was treated as the reference group while comparing the latent means to the female group. Therefore, the latent means of the male group were fixed to zero and therefore, the latent means of the three factors in the comparison group (i.e., females) show the mean differences between the two groups. Positive values would suggest that women hold stronger misogynistic attitudes than males. Conversely, a negative value would imply that men tend to report stronger

misogynistic attitudes than females. Additionally, the effect size Cohen's  $d$  is reported to allow for comparisons across analyses (Cohen, 1988; Putnick & Bornstein, 2016). Cohen's  $d$  was computed by fixing the latent variances to 1 in both groups as subsequently the differences between estimated latent means represent the standardised mean differences, which represent Cohen's  $d$  in that case. More specifically, as the latent mean in the reference group is fixed to 0, any other group's estimated latent mean is the standardised mean difference of that group from the reference group as the constrained variance across groups equals the square of the pooled residual  $SD$  used in the Cohen's  $d$  calculation (Beaujean, 2014; Brown, 2015). The latent mean differences and Cohen's  $d$  for all models are displayed in the supplementary materials Table S.5.5.

*Structural invariance* was tested by constraining the structural coefficients (i.e., latent means) to be equal across groups. The  $\chi^2$  difference test ( $\Delta\chi^2$ ) was evaluated in order to determine whether significant group mean differences exist. The structural invariance analysis revealed a significant test:  $\Delta\chi^2(3) = 22.66, p < .001$ , evaluating the two nested models, one having the latent means constrained to be equal, and the other one freely estimating those. Post-hoc tests confirmed significant  $\Delta\chi^2$  on all latent factors between males and females, which indicates that significant gender mean differences on all subscales: (1) manipulative and exploitative nature of women (2) distrust towards women and (3) devaluation of women, exist. Results showed that men report significantly stronger misogynistic attitudes than women for all three latent factors:  $MDiff_1 = -.482^{***}$  (manipulative and exploitative nature of women),  $MDiff_2 = -.324^{***}$  (distrust towards women), and  $MDiff_3 = -.197^{***}$  (devaluation of women). The Cohen's  $d$  indices show that the values of effect size for the factor 'manipulative and exploitative nature of women' ( $d_1 = .38$ ) is medium, whereas the factors 'distrust towards women' ( $d_2 = .27$ ) as well as 'devaluation of women' ( $d_3 = .19$ ) display small effect sizes.

#### 5.4.3.3 Measurement Invariance - Age Groups

For the age group measurement invariance tests, the same sequential constraint imposition approach was applied, which was used for the gender measurement invariance tests outlined above. The tests followed a logical sequence of nested models ordered in an increasingly restrictive fashion. At each step, the differences of multiple fit indices were evaluated in order to decide whether invariance is accepted or rejected (see Dimitrov, 2010). To start with, separate CFAs were inspected for all three age groups: (1) individuals aged 18 – 29 (2) individuals aged 30 – 49 (3) individuals aged 50 – 82. The fit indices showed good model fit for each group (see Table S.5.3 for details). The configural invariance model across age groups

demonstrated satisfactory fit indices, which supported invariance of the configural model (see supplementary materials Table S.5.4 for an overview of measurement invariance results). The metric invariance model with factor loadings being restricted to be equal, yielded very good model fit, which suggests that the model fits the data well:  $\chi^2(110) = 188.07, p < 0.001$ ;  $\chi^2/df$  ratio = 1.71;  $CFI_{Robust} = .979$ ,  $TLI_{Robust} = .975$ ,  $RMSEA_{Robust} = .053$ ;  $SRMR = .053$ . Additionally, the change of fit indices between configural and metric invariance models showed that  $\Delta CFI = -.004$ ,  $\Delta TLI = -.002$ ,  $\Delta RMSEA = -.002$  as well as  $\Delta SMRM = -.020$  were all within the thresholds of 0.01 and 0.03, respectively. These results confirm metric invariance across age groups. The scalar invariance model also presented good model fit:  $\chi^2(124) = 234.91, p < 0.001$ ;  $\chi^2/df$  ratio = 1.89;  $CFI_{Robust} = .975$ ,  $TLI_{Robust} = .972$ ,  $RMSEA_{Robust} = .057$ ;  $SRMR = .057$ . The scalar invariance analysis further revealed that the indicators' intercepts were invariant across age groups, as the change between the scalar and metric invariance tests were all within the thresholds for scalar invariance testing:  $\Delta CFI = -.004$ ,  $\Delta TLI = -.003$ ,  $\Delta RMSEA = -.004$ , and  $\Delta SMRM = -.004$ .

#### *5.4.3.4 Latent Mean Differences – Age Groups*

Based on the establishment of measurement invariance across age groups, the latent mean differences across these age groups were also compared. The equality of factor means was assessed by comparing two nested models, one had the latent means constrained to be equal and the other model estimated those freely. Findings from the structural invariance test revealed significant differences between age groups. The constrained model had a significantly worse fit, indicated via a significant  $\chi^2$  test between models:  $\Delta\chi^2(6) = 32.71, p < .001$  as well as a notable drop in fit indices. Several post hoc tests were run, each time comparing  $\Delta\chi^2$  among another set of age groups, i.e., (1) group 1 and 2, (2) group 1 and 3, as well as (3) group 2 and 3. Several significant differences emerged between age groups. Results revealed that latent mean differences exist for the first (manipulative and exploitative nature of women) and third latent factor (devaluation of women) of the misogyny scale but not for the second latent factor (distrust towards women).

#### *Manipulative and Exploitative Nature of Women*

Overall, results showed that younger individuals hold weaker attitudes about the manipulative and exploitative nature of women. Specifically, age group 1 (individuals aged 18–29) reported significantly weaker attitudes referring to the manipulative and exploitative nature of women than age group 2 (individuals aged 30–49) ( $MDiff_1 = .187^{***}$ ,  $d_I = .14$ ). Age group 1 also



reported weaker attitudes than group 3 (individuals aged 18– 29) on this factor (MDiff<sub>2</sub> = .333\*\*\*,  $d_2 = .28$ ). Further, the latent factor mean for group 3 was significantly larger than for group 2, which demonstrated that group 3 holds stronger misogynistic attitudes relating to the manipulative and exploitative nature of women (MDiff<sub>3</sub> = .166 \*\*\*,  $d_3 = .13$ ).

### *Devaluation of Women*

In regard to the third latent factor addressing the ‘devaluation of women’, on average, younger individuals reported stronger attitudes than older participants. The results showed that the latent factor mean for age group 1 was significantly larger than the mean for age group 3 (MDiff<sub>4</sub> = -.159\*\*\*,  $d_4 = .17$ ), indicating that younger individuals hold stronger attitudes, which capture the devaluation of women. Additionally, age group 2 scored significantly higher on this latent factor than age group 3 in the sample (MDiff<sub>5</sub> = -.159\*\*\*,  $d_5 = .14$ ). However, no significant latent mean differences between group 1 and 2 emerged for this latent factor. Overall, no significant differences for the second latent factor ‘distrust towards women’ were found.

## **5.5 Discussion and Limitations**

Recent incidents have demonstrated that misogynistic beliefs can lead to acts of violence. Manifestos of incel as well as far-right terrorist attackers have repeatedly shown that the perpetrators espoused extreme misogynistic attitudes (Maxwell et al., 2020; Wilson, 2020). Misogyny has further been characterised as a key motivating factor within extremist recruitment and ideologies (Center on Extremism, 2019). These incidents clearly demonstrate that misogyny represents an urgent topic which requires more research. Yet, the topic of misogyny is particularly under-researched, which became clear when searching for existing studies or psychometric scales assessing the concept. Across several studies, the present work has developed and validated a novel measure of misogynistic attitudes that is suitable for population samples. Overall, the misogyny scale displays robust psychometric properties. It has been shown to be reliable and valid in assessing misogynistic beliefs among the general population.

In this chapter’s study 1, using exploratory factor analysis, a 10-item scale with three latent factors was identified. The factors were labelled ‘manipulative and exploitative nature of women’, ‘distrust towards women’, and ‘devaluation of women’, factor 1 consisting of 4 items and factor 2 and 3 both consisting of three items. All item communalities showed satisfactory correlations and item-total correlations showed good scale homogeneity and inter-

item reliability. The misogyny scale displayed excellent internal consistency, indicated by high values of McDonald's  $\omega$  across all factors. In Study 2, the 3-dimensional factor structure was replicated via confirmatory factor analysis, demonstrating very good model fit. All three factors showed high internal reliabilities. Further, the scale displayed good convergent (i.e., significant relationship between sexual entitlement and revenge motivations) and discriminant validity (i.e., no relationship with analytical thinking). Study 3 demonstrated the significance of establishing measurement invariance before comparing latent factor means. More specifically, measurement invariance testing allows researchers to identify those items that are problematic or noninvariant, which in turn may enhance the development of new or revised items or instruments. Full factorial invariance of the misogyny scale across gender and age groups was established. Latent mean analyses highlighted the differences between latent factors amongst men and women as well as between older and younger individuals.

While this chapter offers a valuable contribution to studying the concept of misogyny, it is important to acknowledge some limitations. First, the analysis did not assess test-retest reliability of the misogyny scale and therefore, it is not possible to examine the stability of the misogyny scale over time. Further research should test for test-retest reliability and assess the intra-class coefficient (ICC) as well as conduct paired samples' t-tests to confirm the scale's repeatability. Relatedly, another shortcoming is the fact that the scale development is solely based on a cross-sectional research design so far. Future research should collect longitudinal data to test for the predictive validity of the misogyny scale and to conduct the above-mentioned reliability tests. Additionally, it would also be beneficial to assess the relationship of the newly developed misogyny scale and existing scales measuring closely related concepts, such as hostile sexism. Strong correlations would suggest convergent validity. Lastly, the misogyny scale will most likely be dependent on the cultural context where the scale is applied and as such, may not be applicable to non-WEIRD (non-Western, educated, industrialised, rich and democratic) countries. The concepts of women's rights as well as the role of women within society more broadly and that of misogyny more specifically, vary heavily between countries and cultural contexts and are progressive issues which constantly change and adapt. As such, no universal measure of misogyny should be expected. Studies operationalising the scale should think carefully whether the underlying latent construct is applicable to the respective study context. Further, all studies using the scale should run a CFA to confirm the factor structure and should conduct measurement invariance tests to see whether the scale possesses measurement validity in that specific sample.

## **Conclusion**

Taken together, this chapter makes important first steps in establishing a conceptualisation of misogyny, which may be used in future survey studies and may encourage further research in this area. Given the prevalence of extreme misogynistic beliefs among incel as well as far right extremists, there is an assumption that misogyny is a risk factor for violent extremism. To date, studies have yet to investigate this systematically because no validated measurements of misogynistic beliefs exist. Now that it does, it provides the opportunity to test whether misogynistic beliefs are a risk factor for violent extremist intentions, which we next move to in chapter 6.

## **Chapter 6: Linking the Effects of Misogyny on Violent Extremism and Interpersonal Violence**

The growing evidence base for risk factors for violent extremism demonstrates many overlaps with parallel problem areas like domestic violence, mass murder and stalking. Yet, empirical research on these issues is largely absent. Following the scale development in chapter 5, this chapter aims to address the lack of empirical research on the relationship between misogyny, violent extremism and interpersonal violence by conducting the first survey-based analysis. Across two studies and based on a UK nationally representative survey ( $n = 1500$ ), this chapter examines the underlying mechanisms and contingent effects linking misogyny to violent extremism and interpersonal violence and analyses protective factors against misogyny and (extremist) violence. Study 1 investigates how misogyny, frustrated narcissistic entitlement and group threats among men translate into revenge motivation and hypermasculinity and thus, may increase violent extremist intentions and attitudes as well as justification of and willingness to engage in interpersonal violence. The results showed that misogyny predicted violent extremist attitudes and intentions as well as increased support for and willingness to engage in violence via revenge planning and hypermasculinity, particularly among men who experienced frustrated narcissistic entitlement and greater threats to the ingroup. Among women, misogyny was not associated with violent extremist attitudes or intentions but was associated with increased support for and intentions to use violence via revenge motivation. In Study 2, trait forgiveness, a stronger internal locus of control and higher critical and reflective thinking were found to be protective against violent extremism among men and against misogyny as well as against justification of and willingness to engage in violence among men and women, yet the effects were significantly stronger for men. The findings suggest that misogyny may constitute an antecedent for (extremist) violence and thus, highlight the importance of studying the effects and underlying mechanisms of misogyny on vulnerability to violent extremism and interpersonal violence more broadly.

### **6.1 Introduction**

The manifestos of recent far-right terrorists, who were predominantly white males, have highlighted that racist misogyny constitutes a key motivating factor for committing these

attacks across Europe, the US and Canada. While these terrorist attacks have been largely motivated by the white genocide conspiracy and great replacement conspiracy theories, the perpetrators have further demonstrated substantial misogynistic motives (Wilson, 2020) with an evidently strong hatred towards feminism and a strong desire for women's subjugation in order to restore male dominance (DiBranco, 2020; Oltermann, 2019). Similar to incel violence, the majority of these male perpetrators did not have intimate relationships in the years prior to the attacks (Wilson, 2020). Evident among these perpetrators is a response to a perceived masculine identity threat, which is bound to a deep hatred towards women (Castillo Díaz & Valji, 2019). A sense of frustrated entitlement and superiority transform shame, anger and perceived injustices into rage and into a desire for revenge against women, ethnic minorities but also society as a whole (Baele et al., 2019; Kimmel, 2018; Kalish & Kimmel, 2010). The fixation upon these threats and perceived victimhood seems to be driving the current wave of mass violence committed by white males (Hoffman et al., 2020), whereby retributive violence is seen as a legitimate and righteous solution in regard to their suffering and to restore their status and dominance (Marganski, 2019).

Such incidents of public mass violence describe a common pattern among heterosexual, predominantly white men who are engaging in extreme acts of violence, partly as a retaliation against women (Hoffman et al., 2020). Importantly, these incidents point towards significant overlaps in regard to the motivational underpinnings between terror attacks and acts of mass violence. More specifically, the majority of Incel shooters and other mass murderers, as well as recent far-right terrorists, espouse attitudes and grievances, such as misogyny, perceived victimhood, a sense of male frustrated entitlement as well as masculinity threats and motivations to engage in hypermasculine behaviours, which have been shown to constitute precursors to violence (Castillo Díaz & Valji, 2019). These concepts have been studied for decades by gender scholars in relation to gender-based violence. A wealth of research has linked such attitudes to a range of adverse outcomes including intimate partner and domestic violence, rape proclivity, and substance use among men (Casey et al., 2017; Munsch & Willer, 2012; Peralta, Tuttle, & Steele, 2010), yet rarely are these concepts applied to studying mass killings, such as those committed by school shooters, incels or violent far-right extremists. This chapter is one of the first to do so.

Across two studies, this chapter examines the underlying mechanisms and contingent effects linking misogyny and violent extremism as well as justification of violence and the willingness to use violence. It further analyses protective factors against misogyny, violent extremism and interpersonal violence. Study 1 examines the relationship between misogyny

and violent extremist attitudes and intentions as well as the effects of misogyny on individuals' acceptance of and intentions to engage in violence. Study 2 analyses various protective factors for violent extremism and violence more generally. Three protective factors are assessed i.e., trait forgiveness, internal locus of control and critical thinking and it is hypothesised that individuals who experience such protective factors will hold less misogynistic beliefs and thus, will report less support for and intentions to engage in violent (extremist) behaviours. The protective factor mediations are run as multigroup path models in order to estimate statistical significance and differences in effect sizes among genders.

## **6.2 Study 1**

Study 1 examines the relationship between misogyny and violent extremist attitudes and intentions as well as the effects of misogyny on individuals' acceptance of and intentions to engage in violence. Several moderated mediation models are tested, and the analysis examines whether misogyny is indirectly associated with all four violence measures via (1) revenge motivation and (2) hypermasculinity among men. Further, several moderated mediation models are performed to test whether (3) the revenge mediation is contingent upon men's levels of collective narcissism and whether (4) the hypermasculinity mediation is dependent on men's group threat perceptions. For females it was examined whether the relationship between misogyny and women's support of and willingness to engage in violence is mediated by increased revenge motivation. In the following sections, we explain the rationale behind additionally looking at collective narcissism, revenge motivations, group threats and hypermasculinity.

### **6.2.1 Collective Narcissism, Revenge Motivations and Support for Violence**

Narcissists are characterised with an unstable self-image (Rhodewalt, Madrian, & Cheney, 1998), which renders them vulnerable to threats to the self (Bushman & Baumeister, 1998). Numerous studies show that narcissists report low levels of empathy, exaggerated feelings of deservingness and entitlement (Baumeister, Catanese, & Wallace, 2002; Dickinson & Pincus, 2003). At the same time, they tend to also hold a sense of being deprived of 'deserved' admiration and gratification, which together makes them particularly prone to seek out vengeance and to engage in aggression (Brown, 2004; Bushman, Bonacci, van Dijk, & Baumeister, 2003; Twenge & Campbell, 2003). Relatedly, 'narcissistic rage' has been described as a defence mechanism in order to deal with feelings of deep-rooted shame, which

arise when narcissists feel deprived of validation and gratification and thus, the grandiose perception of the self is threatened (Kohut, 1972; Krizan & Johar, 2015).

Collective narcissism has been conceptualised as frustrated group-based entitlement and has been defined as “[...] a belief that one’s own group (the ingroup) is exceptional and entitled to special recognition and privileged treatment, but it is not sufficiently recognized by others” (Golec de Zavala, Dyduch-Hazar, & Lantos, 2019, p. 37). Collective narcissism is positively correlated with vulnerable narcissism (Ibid), which refers to antagonistic self-entitlement beliefs that manifest themselves as a neurotic interpersonal style and distrustful resentment towards others (Miller, Lynam, Hyatt, & Campbell, 2017). Similar to narcissism on the individual level, collective narcissists are emotionally invested in a grandiose image of the ingroup, which requires constant validation. Like individual narcissism, this idealised image is unstable and thus, collective narcissists are vulnerable to internal as well as external threats and criticisms (Golec de Zavala, Cichocka, Eidelson, & Jayawickreme, 2009). Collective narcissists tend to engage in intergroup hostility and aggression as a way of protecting and defending their ingroup’s status and image (Golec de Zavala, Cichocka, & Iskra-Golec, 2013). As a result, collective narcissists tend to view the actions of others as threatening and disrespectful, undermining the group’s inflated view, which in turn renders them prone to act aggressively (Golec de Zavala et al., 2019).

Relatedly, collective narcissists tend to feel unfairly treated and are prone to perceive great injustices in an intergroup context as no recognition is sufficient to acknowledge the ingroup’s greatness (Golec de Zavala et al., 2009). Ingroup entitlement to special treatment and at the same time resentment for the unrecognised exceptionality of the ingroup are fundamental to the concept of collective narcissism (Golec de Zavala et al., 2019). Importantly, male collective narcissism has been associated with viewing women as a threatening out-group and thus, has been shown to result in less empathy towards and solidarity with women (Górska et al., 2019). It has further been shown to be positively associated with hostile sexism (Golec de Zavala & Bierwiazzonek, 2020) as collective narcissists are strongly invested in upholding group-based privileges (Golec de Zavala & Keenan, 2021). Collective narcissism is also positively associated with intergroup hostility due to constant threat perceptions to the ingroup’s grandiose image (Dyduch-Hazar, Mrozinski, & Golec de Zavala, 2019).

A closely related concept is that of dominant group victimhood (Reicher & Ulusahin, 2020). This situation arises when members of dominant groups tend to see their group position under threat, whereby the prospect of losing the privileged position is seen as the main threat. Resentment towards other groups, who seem to threaten the dominant position and resulting

feelings of group victimisation and entitlement depict key elements in response to dominant group victimhood. A sense of frustrated entitlement provides a moral obligation for redemption and for restoring the rightful order through action (Reicher & Ulusahin, 2020). Collective narcissism (Golec de Zavala et al., 2009) and dominant group victimhood (Reicher & Ulusahin, 2020) strongly resemble the individual-level injustice-based entitlement hypothesis, which argues that particularly people who report high levels of vulnerable narcissism tend to justify their high level of entitlement via perceived injustice, whereby they emphasise being undeservingly worse off compared to others (Freis & Hansen-Brown, 2021). As such, those people are prone to view themselves as unfairly disadvantaged and thus, entitled to positive outcomes for themselves. Studies have shown that injustice-based entitlement may result in adverse and aggressive behaviours that aim to restore what individuals perceive as ‘deserved’ justice (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004; Grubbs & Exline, 2016; Reidy, Zeichner, Foster, & Martinez, 2008). Correlational and experimental studies have shown that collective narcissism predicts hostile retaliation against outgroups as a result of past, present, actual and imagined offenses toward the in-group and has been described as a contributing factor for the escalation of intergroup conflicts (Golec de Zavala et al., 2013; Golec de Zavala, Peker, Guerra, & Baran, 2016).

Similarly, a perceived sense of humiliation of one’s own group is one of the most fundamental motives for radicalisation and violent extremism (Kruglanski et al., 2014; McCauley & Moskalenko, 2008). Several studies in radicalised contexts in Morocco, Sri Lanka and Indonesia operationalised the quest for collective significance as collective narcissism in the context of ethnic conflict and findings demonstrated that collective narcissism was a robust predictor for support of terrorist violence (Jaško, Webber, & Kruglanski, 2017; Jaško et al., 2020). Collective narcissism was also positively associated with revenge motivations, which in turn were positively related to intergroup aggression across two general population studies in Poland (Dyduch-Hazar & Mrozinski, 2021). Studies further showed that collective narcissists are especially prone to seeking revenge when their privileged position group seems to be threatened (Golec de Zavala et al., 2013). As such, retaliatory hostility and support for violence towards groups who undermine the in-group’s grandiose image have been identified as key mechanisms of collective narcissists (Dyduch-Hazar & Mrozinski, 2021). Relatedly, vicarious retribution, i.e., indiscriminately targeting any member of the out-group may provide a means to restore threatened in-group and self-image among collective narcissists (Lickel, Miller, Stenstrom, Denson, & Schmader, 2006),



‘Revengefulness’ has been defined as the tendency to uphold and to engage in revenge thoughts, which may translate in actual revenge behaviour as well as the inability to forgive prior offences (Żemojtel-Piotrowski et al., 2017). The instrumental role of vengeance within aggression and interpersonal violence has been widely studied (e.g., Black, 1998; McCullough et al., 1998; McCullough, Bellah, Kilpatrick, & Johnson, 2021). The desire to take revenge has been described as a fundamental motive across various violent behaviours, such as homicide (Counts, 1987) and rape (Scully & Marolla, 1985). Experimental studies have demonstrated that revengefulness is linked to high levels of personal or collective entitlement, highlighting that feelings of injustice are associated with heightened levels of entitlement behaviours (Exline & Zell, 2009; Gabay, Hameiri, Rubel-Lifschitz, & Nadler, 2020; Zitek, Jordan, Monin, & Leach, 2010). Several studies have further found evidence that entitled frustration as well as externalising blame are related to fantasies of vengeful murder (Fox & DeLateur, 2014; Fox, Levin, & Fridel, 2018) and that individuals who hold stronger revenge thoughts are more likely to harm others (Murray, 2015; 2017; Smith, Fisher, & Watson, 2009). Revenge offers individuals who feel they have been wronged a sense of empowerment in which justice and the moral balance is restored (Kalish & Kimmel, 2010) and dominance and masculinity can be reinforced (Marganski, 2019).

### **6.2.2 Group Threats, Hypermasculinity and Support for Violence**

Research confirms that men who experience threats to their gender identity or see their dominance in the gender hierarchy at stake, feel motivated to validate it by adhering to hypermasculine attitudes and engaging in stereotypically male behaviours, such as endorsing ideologies that subjugate and devalue women (Dahl, Vescio, & Weaver, 2015; Weaver & Vescio, 2015) or by engaging in misogynistic and aggressive behaviours (Vandello & Bosson, 2013). Hypermasculine attitudes and behaviours are perceived to restore dominance and control over women (Bosson & Vandello, 2011; Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008). Relatedly, hostility towards women and hypermasculinity have been linked to acceptance and justification of interpersonal violence (Burt, 1980; Jasinski, 2001; Ryan, 2004). More specifically, hypermasculinity refers to an extreme adherence to masculine gender roles and has been operationalised with three main characteristics: a belief that violence is manly, callous sex attitudes, and the view that danger is exciting (Mosher & Sirkin, 1984). As such, men who espouse hypermasculine attitudes view dominance, toughness, competitiveness, and violence as means to demonstrate their masculinity (Mosher & Sirkin, 1984; Walker, 2005).

Empirical evidence confirms that holding attitudes that violence is manly are related to being supportive of using force and aggression in interpersonal relationships and thus, may promote aggression and violence against women (Bouffard, 2010). In addition, Kimmel (2018) argues that male engagement in violent far right extremist groups is to an extent motivated by a desire to demonstrate or reclaim masculine identities and thus, to restore a sense of masculine entitlement through male bonding, comradery and particularly through engagement in violent behaviours (Kimmel, 2018).

Several studies have found that men who feel they hold greater hostility towards women and who feel threatened by feminism (i.e. the social progress of women more broadly as well as feeling threatened by women in their lives and workplaces more specifically) show higher levels of hyper-conformity to masculine identity traits and report more anger and aggression toward other people more generally and women in particular (Dahl et al., 2015; Munsch & Willer, 2012; Reidy, Berke, Gentile, & Zeichner, 2014; Willer, Rogalin, Conlon, & Wojnowicz, 2013). Similarly, a recent study found that hostile sexism was positively associated with violent fantasies among a self-report survey of 18- to 30-year-old men in the United States (Scaptura & Boyle, 2020).

Research on gender and physical aggression has found that men view physical aggression and violent displays as effective means of demonstrating as well as restoring manhood, particularly when their gender status has been threatened (Bosson & Vandello, 2013; Vandello et al., 2008). Across three experimental studies, Bosson et al. (2009) demonstrated that physical aggression is an active means to restore threatened gender status, linking manhood with action. Across all studies, threats to men's gender status evoked heightened physical aggression among men. Findings further showed that men are able to actively use and effectively benefit by engaging in displays of physical aggression in order to validate their precarious gender status and to demonstrate manliness (also see Bosson & Vandello, 2011). The results further suggest that when men engage in stereotypically male behaviours, such as aggression, it helps them to down-regulate negative emotions which arise when their manhood is challenged (Bosson, Vandello, Burnaford, & Weaver, 2009; also see Vandello et al., 2008).

Further studies have confirmed the link between threats to male gender identity and increased aggression. Men who believe their male status was called into question hyper-conformed to masculine identity traits and exhibited heightened levels of anger, aggression and hostility towards women (Munsch & Willer 2012; Dahl et al., 2015) and were more likely to harass women (Maass et al., 2003). Particularly if individuals perceive that their group as a whole is targeted or threatened, they tend to respond by overemphasising their status and

identity as group members. For instance, Willer et al. (2013) demonstrated that men respond with extreme displays of masculinity, when they experience gender and status threats. The findings showed that men, but not women, showed negative reactions to perceived gender identity as well as status threats. Those men with heightened gender threats reported more support for violence in war and displayed higher levels of homophobia as well as misogyny. Higher status threats, such as perceptions that social changes were threatening men's position in the gender hierarchy, were linked to pro-dominance attitudes and beliefs in male entitlement and superiority (Willer et al., 2013). Both, gender and status threats, seem to translate into a hyper-conformation to masculine ingroup traits (Branscombe, Ellemers, Spears, & Doosje, 1999; Maass et al., 2003). This is in line with recent findings which have found that men who experience greater gender status threats espouse more hostile attitudes towards women and report more frequent fantasies about mass murder and rape (Scaptura & Boyle, 2020).

These findings are also consistent with previous research which has argued that men who feel a stronger status threat, i.e., the belief that their ingroup is being threatened by subordinate groups and their dominant group privilege is called into question, are more prone to experience feelings of hostility towards out-groups, which may result in desired or actual dominating behaviour of groups, such as women, ethnic minorities, and LGBTQ+ individuals (Branscombe et al., 1999; Kimmel, 1994). By engaging in hypermasculine behaviours and by derogating and subjugating women, men reinforce their status within the dominant ingroup and against outgroups (Maass et al., 2003; Petriglieri, 2011). Thus, research on masculinity, group status and threats provide valuable explanations in order to understand how threats to one's masculine identity may transform into hypermasculine behaviours and extreme outgroup derogation, and thus, may contribute to mass and gender-based violence (Branscombe et al., 1999; Eisler, Franchina, Moore, Honeycutt, & Rhatigan, 2000; Ging, 2017; Munsch & Willer, 2012).

### **6.2.3 Hypotheses**

The above accounts suggest that (1) misogyny is associated with violent extremist attitudes and intentions, (2) misogyny is associated with support for and intentions to engage in violence among men. It is further expected that both associations are mediated by revenge motivations particularly among men who hold high levels of collective narcissism and as such feel that men as a group are not sufficiently recognised despite the group's perceived exceptionalism, resulting in a sense of frustrated narcissistic entitlement, which needs to be avenged. Therefore, it is hypothesised that:

H1: Men who report misogynistic beliefs are more likely to hold stronger *violent extremist attitudes* via revenge motivation, especially when they hold high levels of collective narcissism

H2: Men who report misogynistic beliefs are more likely to hold stronger *violent extremist intentions* via revenge motivation, especially when they hold high levels of collective narcissism

H3: Men who report misogynistic beliefs are more likely to express increased *support for general violence* via revenge motivation, especially when they hold high levels of collective narcissism

H4: Men who report misogynistic beliefs are more likely to express an increased *willingness to engage in general violence* via revenge motivation, especially when they hold high levels of collective narcissism

It is further expected that the relationships between misogyny and the general violence measures are mediated via hypermasculinity, particularly among men who perceive that their ingroup is threatened. As mentioned above, threats to the ingroup lead to motivations to hyperconform to masculine ingroup traits in order to demonstrate masculinity and dominance. Therefore, it is hypothesised that:

H5: Men who report misogynistic beliefs are more likely to hold stronger *violent extremist attitudes* via hypermasculinity, especially when they experience threats to their ingroup

H6: Men who report misogynistic beliefs are more likely to hold stronger *violent extremist intentions* via hypermasculinity, especially when they experience threats to their ingroup

H7: Men who report misogynistic beliefs are more likely to express increased *support for general violence* via hypermasculinity, especially when they experience threats to their ingroup

H8: Men who report misogynistic beliefs are more likely to express increased *willingness to engage in general violence* via hypermasculinity, especially when they experience threats to their ingroup

An exploratory analysis was conducted to test whether misogyny would be indirectly related to support for and intentions to engage in interpersonal violence among women. It was examined whether women who hold stronger misogynistic attitudes (i.e., internalised

misogyny) towards other women, will be more likely to engage in violence via increased revenge planning. Yet, the analysis did not test whether hypermasculinity mediates this relationship, nor did it test whether collective narcissism and group threats moderate these relationships, as previous research does not suggest that these constructs constitute underlying mechanisms or contingent effects for the effects of misogyny on violence among women (Figure 6.2).

Figure 6.1. Path diagram to present the hypothesised moderated mediations among men with (1) Misogyny as predictor, revenge motivation as mediator, the a-path moderated by collective narcissism and violent extremist attitudes, violent extremist intentions, justification of and willingness to use violence as outcome criteria. (2) Misogyny as predictor, hypermasculinity as mediator, the a-path moderated by group threat and violent extremist attitudes, violent extremist intentions, justification of and willingness to engage in violence as outcome criteria.

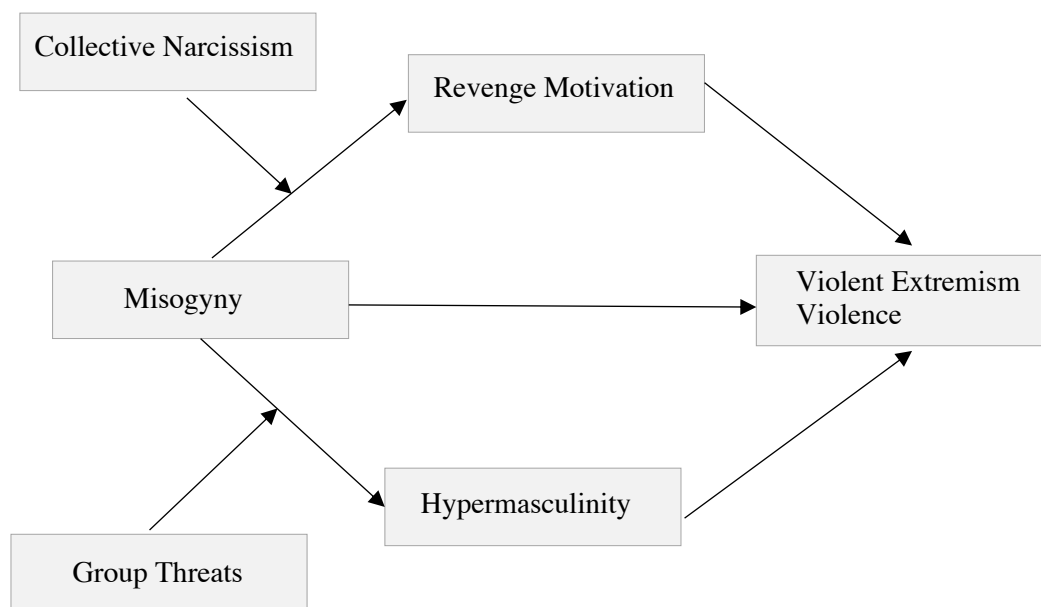
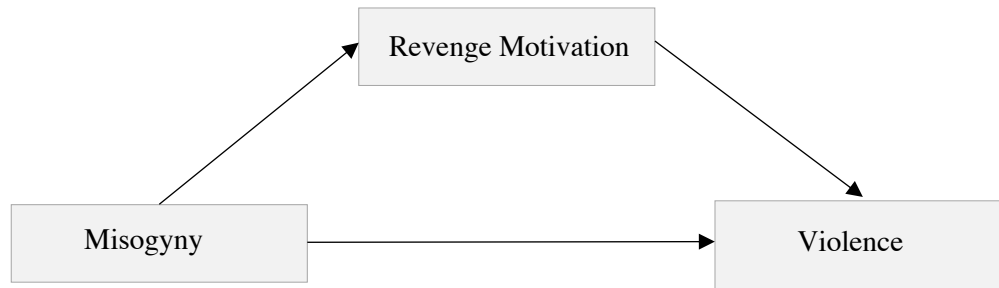


Figure 6.2. Path diagram to present the hypothesised mediation among women with (1) Misogyny as predictor, revenge motivation as mediator and measures of justification of and willingness to use violence as outcome criteria.



## 6.2.4 Method

### 6.2.4.1 Participants

This study draws on the same data as the one used in chapter 5 (see chapter 5 for details). The data collection took place in July 2020. Participants were recruited via the online platform Prolific. Participants were based on a UK nationally representative sample (by age, gender, and ethnicity)  $n = 1500$ . Overall, 51.3% ( $n = 769$ ) identified as female, 48.7% ( $n = 730$ ) identified as male and one individual indicated non-binary as their gender status ( $M_{ageM} = 44.52$ ;  $SD_{ageM} = 16.21$ ;  $M_{ageW} = 45.31$ ;  $SD_{ageW} = 15.62$ ). The majority of men ( $n = 618$ ; 84.9%) and women ( $n = 654$ ; 85%) stated ‘White’ as their ethnicity. This was followed by 7.8% of men ( $n = 57$ ) and 7.5% of women ( $n = 58$ ) who stated ‘Asian’, 3.4% of men ( $n = 25$ ) and 3.9% of women ( $n = 30$ ) identified as ‘Black’. 2.1% of men ( $n = 15$ ) and 2.1% of women ( $n = 16$ ) indicated ‘Mixed’ as well as 1.8% of men ( $n = 13$ ) and 1.4% of women ( $n = 11$ ) answered ‘Other’. Education levels varied across males: 1.9% had no formal qualifications, 18.6% of men had GCSEs (or equivalent), 27.4% had A-levels/BTEC, 35.8% of males had an undergraduate degree, 13% held a Masters degree, and 3.2% of all men completed a PhD. Among females: 2.1% had no formal qualifications, 17% of women had GCSEs (or equivalent), 23.7% had A-levels/BTEC, 40.1% of females had an undergraduate degree, 14.6% held a Masters degree, and 2.6% completed a PhD.

#### 6.2.4.2 Procedure

Please see chapter 5 for more details on the data collection and data cleaning procedure.

#### 6.2.4.3 Measures

Unless stated otherwise, throughout all studies, all items were measured on 7-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree). For all scales, the individual items were averaged to calculate a score for each individual, whereby higher values denoted e.g., stronger misogynistic attitudes, a stronger tendency for collective narcissism and stronger intentions to engage in violent extremism etc.

##### *Misogyny*

In the present research, a conceptualisation of misogyny is used, which is defined as the hatred and devaluation of, contempt for, or prejudice against women or girls. Misogyny was assessed using the 10-item scale developed in chapter 5.

##### *Revenge motivation*

Revenge motivation was operationalised with the validated ‘Revenge Planning’ subscale of the ‘Displaced Aggression Questionnaire’, which measures the tendency to hold a grudge for a prior provocation and a plan for retaliation and thoughts and ideas of retribution (e.g., ‘*If a person hurts you on purpose, you deserve to get whatever revenge you can*’, ‘*When someone makes me angry, I can’t stop thinking about how to get back at this person*’,  $\omega_{\text{Men}} = .95$ ,  $\omega_{\text{Women}} = .95$ , Denson, Pedersen, & Miller, 2006). The scale showed excellent internal consistency and test–retest reliability and demonstrated convergent as well as discriminant construct validity. Denson et al.’s (2006) analysis showed a strong correlation between the revenge planning scale and physical aggression as well as angry rumination and the scale was moderately correlated with verbal aggression. The scale also significantly predicted real-world aggression (i.e., self-reported domestic abuse) (Denson et al., 2006).

##### *Hypermasculinity*

Hypermasculinity was measured with four items from the ‘Machismo’ subscale of the ‘Maudsley Violence Questionnaire’, which is a validated measure that has demonstrated construct validity across several studies (e.g., ‘*Physical violence is a necessary sign of strength and power*’, ‘*Sometimes you have to be violent to show that you are a man*’,  $\omega_{\text{Men}} = .82$ , Walker, 2005). ‘Machismo’ items describe violence as manly, similar to Mosher and Sirkin’s

Hypermasculinity Inventory (1984). The items refer to stereotypical expectations of men pertaining to toughness and manliness. Such attitudes indicate that aggression and violence are not only expected but are desirable as they are means to express strength and assertiveness among men. The ‘Machismo’ scale was strongly correlated with self-reported violence among men (Walker, 2005).

#### *Violent extremist attitudes*

The violent extremist attitudes scale is a four-item measure of generic support for violent extremism, which has been developed for the Zurich Project on the Social Development of Children and Youths (z-Proso), an ongoing prospective longitudinal study on the development of aggressive and other problem behaviour (e.g., ‘*It’s OK to support groups that use violence to fight injustices*’, ‘*It’s sometimes necessary to use violence, commit attacks, or kidnap people to fight for a better world*’,  $\omega_{Men} = .88$ , Nivette et al., 2017).

#### *Violent extremist intentions*

Violent extremist intentions was assessed with the same four-item Radical Intention Scale (RIS) outlined in chapter 3 ( $\omega_{Men} = .84$ , Moskalenko & McCauley, 2009).

Participants completed two general measures of violence. Items were part of a larger violence scale development and were inspired by the ‘Acceptance of Violence’ subscale of the ‘Maudsley Violence Questionnaire’ (Walker, 2005).

#### *Justification of violence*

The justification of violence measure consisted of four items and assessed general justification and support for violence (e.g., ‘*Sometimes you have to use violence to show your dominance*’, ‘*Some issues can only be resolved with violence*’,  $\omega_{Men} = .82$ ,  $\omega_{Women} = .81$ ).

#### *Willingness to use violence*

The second general violence measure captured participants willingness and intentions to use or engage in violence and was assessed with three items (e.g., ‘*If someone provokes me, I’ll respond with my fists*’, ‘*In certain situations, I’m willing to use violence*’,  $\omega_{Men} = .76$ ;  $\omega_{Women} = .76$ ).



### 6.2.5 Results

Structural equation modeling with moderated mediations was performed in Lavaan in order to test the hypotheses (Rosseel, 2021). Age and education were entered as covariates (the analyses without this covariate yielded almost the same results). The models were run with 5000 bootstrap samples and 95% bias corrected bootstrap confidence intervals as this method is robust to non-parametric data and statistical outliers and effectively handles deviations from the normal distribution of study variables as no assumptions about the shape of the sampling distribution are made (Preacher, Rucker, & Hayes, 2007). Bootstrapping is a non-parametric technique and there is growing consensus that bootstrapping is the preferred resampling strategy for estimation and hypothesis testing, particularly when testing for indirect and conditional indirect effects (Preacher & Selig, 2012; Hayes, 2017a).

First, CFAs on all measures were run. All indicators showed satisfactory factor loadings with standardised coefficients ranging from  $\beta = .58$  to  $\beta = .95$ . Table 6.1 shows the separate correlations among all variables for men and women. As expected, the correlations for men were all stronger than the ones for women. Among men, misogyny demonstrated a positive significant association of small to moderate strength with all variables. All other variables operationalised in the first study were positively and significantly correlated with each other, indicating medium to strong effect sizes. As expected, misogyny was not significantly correlated with violent extremist attitudes ( $r = .06, p > .05$ ) nor was violent extremist intentions ( $r = .00, p > .05$ ) among women. The other variables showed small to medium effect sizes with one another among women. Mean difference tests revealed that men demonstrated significantly higher means on all variables operationalised in study 1, ranging from small to large effect sizes (see Table 6.1).

Table 6.1. Descriptive statistics and correlations among men and women (Study 1).

Variables	Men	Women	Mean differences			Correlations								
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>t</i>	<i>p</i>	<i>d</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Misogyny	2.63 (1.17)	2.23 (1.06)	6.45	< .001	.33	-	.37***	.36***	.15***	.16***	.06	.00	.27***	.26***
2. Revenge motivation	2.69 (1.34)	2.37 (1.30)	4.79	< .001	.25	.48***	-	.42***	.36***	.18***	.21***	.23***	.37***	.46***
3. Hypermasculinity	1.97 (1.00)	1.50 (.68)	10.71	< .001	.55	.45***	.49***	-	.26***	.17***	.38***	.27***	.63***	.67***
4. Collective narcissism	3.31 (1.23)	3.20 (1.20)	2.12	< .05	.11	.34***	.45***	.31***	-	.38***	.18***	.23***	.26***	.24***
5. Group threat	2.94 (1.78)	2.75 (1.63)	2.12	< .05	.10	.43***	.34***	.34***	.42***	-	.17***	.25***	.21***	.20***
6. Violent extremist attitudes	2.78 (1.49)	1.98 (1.19)	11.67	< .001	.60	.20***	.34***	.44***	.20***	.23***	-	.59***	.62***	.42***
7. Violent extremist intentions	2.82 (1.36)	2.54 (1.21)	4.23	< .001	.22	.17***	.34***	.38***	.25***	.22***	.63***	-	.42***	.37***
8. Justification violence	2.26 (1.28)	1.50 (.80)	13.99	< .001	.72	.42***	.47***	.69***	.30***	.36***	.64***	.44***	-	.62***
9. Willingness violence	2.19 (1.13)	1.53 (.82)	13.08	< .001	.68	.43***	.55***	.69***	.33***	.30***	.50***	.44***	.67***	-

*Note.* Pearson's correlation coefficients are reported. Correlations for women are presented above, and correlations for men below the diagonal of the correlation matrix.

$n = 1499$  ( $n_{\text{women}} = 769$ ;  $n_{\text{men}} = 730$ ).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Moderated Mediation: Misogyny, revenge planning, violent extremist attitudes and intentions, and collective narcissism among men*

To examine the hypotheses that the indirect effects of the relationship between misogyny and violent extremist attitudes and intentions are mediated by revenge planning and are in addition conditional upon levels of collective narcissism among men, two separate moderated mediation path analyses were conducted. One moderated mediation analysis was run for each outcome criterion. For both models, the path linking misogyny to revenge planning (a-path) is expected to be moderated by collective narcissism, indicating that the effects are strongest for those highest in self-reported collective narcissism, which subsequently renders the overall indirect effects dependent on levels of the moderator. Similar to analyses conducted with PROCESS (Hayes, 2017a), an inferential test for the moderation of the indirect effect was estimated (index of moderated mediation). The moderated mediation index estimates how differences in misogyny result in differences in violent extremist attitudes and intentions indirectly through revenge planning and depending on the values of collective narcissism. If the indirect effect differs systematically as a function of the moderator, i.e., the confidence interval of the index does not contain zero, then the mediation is said to be moderated (Hayes, 2017b).

In support of H1 and H2, Table 6.2 shows significant indices of moderated mediations for violent extremist attitudes and violent extremist intentions. The conditional indirect effects at the three levels of the moderator were examined, i.e., at the mean as well as  $M \pm 1SD$ . The results for violent extremist attitudes demonstrate that, as hypothesised, the association between misogyny and revenge planning was strongest for those who experienced higher levels of collective narcissism and thus, indicate a significant interaction effect (H1). Similar results emerged when violent extremist intentions was entered as the outcome measure, suggesting that the effects of misogyny on revenge planning were strongest for those who experienced higher levels of collective narcissism (H2). Misogyny was also a significant direct predictor for violent extremist attitudes even after accounting for the moderation- mediational associations and covariates ( $c' = .12$ , 95% CI [.05, .17]). Yet, the direct effect of misogyny on violent extremist intentions was not significant when the mediator, interaction effects and control variables were estimated simultaneously ( $c' = .08$ , 95% CI [-.02, .17]). These findings suggest that the effects of misogyny on violent extremist attitudes and intentions are mediated by revenge thoughts and are additionally contingent on men's levels of collective narcissism. As such, the findings indicate that misogyny predicts violent extremist attitudes and intentions

via increased revenge thoughts and the effects are particularly strong for men with high levels of collective narcissism.

*Moderated Mediation: Misogyny, revenge planning, justification of and willingness to use violence and collective narcissism among men*

In line with H3 and H4, the moderated mediation indices for both models, explaining justification of and willingness to use violence, were statistically significant. Replicating the findings above, both moderated mediation models showed that those highest in collective narcissism demonstrated the strongest link between misogyny and revenge planning. As such, misogyny was found to be associated with support for violence via revenge planning, particularly among those men who reported a strong sense of collective narcissism (H3). The effects of misogyny on support for violence ( $c' = .28$ , 95% CI [.20, .36]) and intentions to engage in violence ( $c' = .21$ , 95% CI [.14, .27]) were statically significant after including the moderation- and mediational associations and covariates in the model. Similar to model 1 and 2, the effects of misogyny on willingness to engage in violence are mediated by heightened revenge thoughts and the effects are particularly pronounced for men who experience high levels of collective narcissism (H4, see Table 6.2).

*Moderated Mediation: Misogyny, hypermasculinity, violent extremist attitudes and intentions, and group threat among men*

It was further tested if and how misogyny affects violent extremist attitudes and intentions directly or through the mediator hypermasculinity and if indirect effects are contingent on levels of perceived group threat. The path (a-path) linking misogyny to hypermasculinity is hypothesised to be moderated by perceptions of group threat. Like in previous analyses, two separated models were estimated. The indices for both moderated mediations were statistically different from zero, indicating that the mediations for the effects of misogyny on both violent extremism measures through hypermasculinity are moderated by levels of group threats, thus supporting H5 and H6. The findings showed that the indirect effects were strongest for those men who reported higher levels of self-reported group threat (Table 6.2). Yet, the direct effects of misogyny were not statistically significant after the mediational and moderating effects as well as the covariates were taken into account ( $c'_{Attitudes} = .04$ , 95% CI [-.05, .12]),  $c'_{Intentions} = .01$ , 95% CI [-.07, .07]).

*Moderated Mediation: Misogyny, hypermasculinity, justification of and willingness to use violence, collective narcissism and group threat among men*

To examine model 7 and 8, which examine whether the relationships between misogyny and violent extremist attitudes and intentions are mediated by hypermasculinity and are in addition conditional upon levels of group threats among men, another two separate moderated mediation path analyses were conducted. Indices of moderated mediation were statistically significant for both models. Replicating the findings above, both moderated mediation models showed that those highest in perceptions of group threat demonstrated the strongest association between misogyny and hypermasculinity. Similar to previous findings and in line with H7 and H8, the effects of misogyny on justification of violence (H7) and willingness to engage in violence (H8) are mediated via hypermasculine attitudes and the effects are particularly pronounced for men who express strong ingroup threats (Table 6.2). The direct effects of misogyny ( $c'_{\text{Justification}} = .17$ , 95% CI [.10, .23],  $c'_{\text{Willinness}} = .14$ , 95% CI [.09, .20]) were statistically different from zero after accounting for covariates as well as moderating and mediating effects.

*Mediation: Misogyny, revenge planning, justification of and willingness to use violence among women*

As per  $R^2$ , the model explained 14% of variance in revenge planning, 19% of variance in justification of violence and 13% of variance in willingness to engage in violence. Misogyny was significantly and positively associated with revenge planning ( $\beta = .37$ , 95% CI [.30, .45]), and in turn, revenge planning ( $\beta = .42$ , 95% CI [.35, .49]) showed a significant positive relationship with justification of violence. The indirect effect via revenge planning was significant ( $\beta = .16$ , 95% CI [.12, .20]). Similarly, misogyny shared a significant and positive association with revenge planning ( $\beta = .37$ , 95% CI [.30, .45]), and in turn, revenge planning ( $\beta = .18$ , 95% CI [.14, .23]) was significantly and positively related to intentions to use violence. The indirect effect via revenge planning ( $\beta = .12$ , 95% CI [.08, .16]) was also significant. The direct effects of misogyny on support for violence and willingness to engage in violence were positive and significant (see Table 6.2).

Several models with alternated path directions were tested as means to strengthen the arguments in regard to the directionality of the hypothesised relationships. Each model (1-8) was estimated with reversed causality between the variables. More specifically, among the

male sample, the analysis estimated whether the effects of all four outcome measures, i.e., violent extremist attitudes, violent extremist intentions, acceptance of violence and intentions to engage in violence on misogyny were mediated via revenge planning and hypermasculinity and whether they were conditional upon men's levels of collective narcissism and perceptions of group threat, respectively. Among the female sample, it was estimated whether the effects of justification of violence and willingness to use violence on misogyny would be mediated by revenge planning. The fit indices of each of the alternative models were compared to the respective original models. All original models showed better fit indices compared to the alternative ones and among men none of the alternative models' indices of moderated mediations were significant. Among women, the indirect effect of the general violence measures on misogyny via revenge planning was significant yet showed weaker effect sizes compared to the original model's indirect effect. These findings strengthen the evidence for the hypothesised directionality of the relationships between the measures.

Table 6.2. Misogyny predicting violent (extremist) outcome measures among men and women (Study 1).

Group	Mediator	Criterion	Index of moderated mediation	Conditional indirect effects at level of collective narcissism		
				Low	Moderate	High
Men	Revenge motivation	Violent extremist attitudes	.02 [.004, .03]	.14 [.08, .20]	.16 [.10, .21]	.18 [.12, .24]
		Violent extremist intentions	.02 [.01, .03]	.14 [.10, .18]	.16 [.11, .21]	.18 [.14, .23]
		Justification of violence	.02 [.002, .03]	.13 [.08, .17]	.15 [.09, .20]	.18 [.12, .23]
		Willingness to use violence	.02 [.01, .03]	.15 [.09, .22]	.17 [.11, .24]	.20 [.13, .28]
			Index of moderated mediation	Conditional indirect effects at level of group threat		
				Low	Medium	High
Men	Hypermasculinity	Violent extremist attitudes	.03 [.01, .05]	.17 [.11, .23]	.21 [.13, .29]	.25 [.17, .33]
		Violent extremist intentions	.02 [.01, .04]	.13 [.08, .18]	.18 [.12, .26]	.23 [.15, .28]
		Justification of violence	.03 [.02, .05]	.22 [.15, .30]	.26 [.17, .34]	.32 [.25, .40]
		Willingness to use violence	.03 [.01, .05]	.18 [.12, .25]	.23 [.15, .25]	.29 [.22, .37]
			Indirect effect	Direct effect	Total effect	
Women	Revenge motivation	Justification of violence	.09 [.06, .12]	.13 [.08, .19]	.22 [.17, .27]	
		Willingness to use violence	.12 [.09, .16]	.08 [.03, .13]	.20 [.15, .25]	

*Note.* Misogyny predicting violent (extremist) outcome measures among men, mediated by revenge motivation and hypermasculinity, with the a-paths moderated by collective narcissism or perceived group threat. Total, direct, and indirect effects of misogyny predicting violent outcomes among women, mediated by revenge planning. 95% bias-corrected confidence intervals used, along with 5000 bootstrap samples. Controlling for age and education. Index of moderated mediation = statistical test for the moderation of the indirect effects. Levels of the moderators are M-1SD (low collective narcissism/ low group threats), M (moderate collective narcissism/ moderate group threats), and M+1SD (high collective narcissism/ high group threats).

## **6.3 Study 2**

### **6.3.1 Background**

Study 2 analyses various protective factors for violent extremism and violence more generally. Three protective factors are assessed i.e., trait forgiveness, internal locus of control and critical thinking and it is hypothesised that individuals who experience such protective factors will hold less misogynistic beliefs and thus, will report less support for and intentions to engage in violent (extremist) behaviours. The protective factor mediations are run as multigroup path models in order to estimate statistical significance and differences in effect sizes among genders. The below sections outline the reasoning behind including trait forgiveness, internal locus of control and critical thinking.

### **6.3.2 Trait Forgiveness**

Trait forgivingness denotes a disposition to forgive interpersonal transgressions over time and across situations (Berry, Worthington, O'Connor, Parrott, & Wade, 2005, p. 183). Relatedly, forgiveness has been described as the ability to let go of negative emotions, vengeful feelings and resentment related to a perceived transgression and describes a way of adaptive responding following suffering (e.g., McCullough, Bono, & Root, 2007; for a review, see Exline, Worthington, Hill, & McCullough, 2003). Forgiveness is further seen as a way to restore interpersonal and intergroup harmony after transgression (McCullough, Pargament, & Thoresen, 2000; Worthington, 2007). Various studies analysed the correlates of trait forgiveness. For instance, trait forgivingness was negatively associated with chronic hostility and trait anger (Berry, Worthington, Parrott, O'Connor, & Wade, 2001), neuroticism (McCullough, 2000), and vengeful rumination and was positively related to several traits linked to positive and pro-social affect, such as empathic concern and empathic perspective taking (Ibid) as well as agreeableness (Worthington & Wade, 1999).

Conversely, unforgiveness has been described as a process whereby people hold on to negative emotions, bolstering a sense of victimhood (Wade & Worthington, 2005). This is in line with the concept of revengefulness which denotes a tendency to insist on revenge and thus, relates to the inability to forgive perceived insults or harms (Piotrowski & Żemojtel-Piotrowski, 2009). Correlational studies found firm evidence for the strong mediating role of revenge motivation on the relationship between trait forgivingness and anger-related unforgiving dispositional traits, i.e., trait anger and chronic hostility (Berry et al., 2005). In a similar vein, narcissistic entitlement on the individual level has been associated with an



unwillingness to forgive others for perceived insults or transgressions and for exhibiting a strong capacity for vengeance (e.g., Brown, 2004) as well as grudge-holding (Exline, Baumeister, Bushman, Campbell, & Finkel, 2004). Similarly, collective narcissists have been found to be unwilling to forgive others for wrongdoings, insults or unfair treatment of the ingroup (Hamer, Penczek, & Bilewicz, 2018).

### **6.3.2 Internal Locus of Control**

The concept of locus of control pertains to the notion that decisions to engage in a particular behaviour are predicted by individuals' expectations about their ability to control the outcome associated with this action (Lefcourt, 1981; Young, 1992). Research has shown that when individuals are frustrated with a situation, they are more likely to engage in aggression if they exhibit an external locus of control (Bhatia & Golin, 1978). Similar to the concept of self-control, individuals with an internal locus of control are able to better control their reactions to certain situations (Lobo, Antunes & Ahlin, 2014) and also perceive a greater sense of control over outcomes in their lives, whereas those with an external locus of control believe that their life more broadly and the outcomes of their actions more specifically, are the result of fate or luck (Lau & Leung, 1992; Rotter, 1990). Yet, most previous research focuses on the risk which comes with an external locus of control (e.g., Kelley, 1996; Marsa et al., 2004) and tends to neglect the potential protective function an internal locus of control, i.e., sense of mastery or control over life, may exert (Ahlin, 2014).

While previous studies suggest that a stronger external locus of control is associated with violence and delinquency, an internal locus of control has been found to be protective against engagement in violent behaviours (Ahlin, 2014). More specifically, findings from a large-scale survey ( $n = 1767$ ) on children and adolescents aged 9 to 19 indicated that an internal locus of control predicts abstention from violence, even after accounting for (social)environmental factors proven to influence violence, such as family and neighbourhood variables as well as individual characteristics. The results suggest that involvement in violent behaviours were significantly lower among adolescents who showed an internal locus of control due to individuals' tendency to directly associate outcomes with their behaviours (Ibid).

### **6.3.4 Critical Thinking**

A prominent theme within the prevention of violent extremism is to strengthen resilience within individuals. One such preventative approach focusses on developing cognitive resources

and to help individuals to become critical as well as flexible in their thinking. By developing and strengthening certain cognitive skills and capacities, individuals are thought to be better equipped to critically assess and question extremist propaganda which, in turn, increases resistance towards the attraction of such messages (Stephens, Sieckelinck, & Boutellier, 2021). Yet, rather than focusing on the extremist messages themselves, the way individuals think and process information is seen as crucial for preventing extreme and simplistic categorisations, often labelled as black-and-white-thinking in which narratives such as ‘us versus them’ or ‘good and evil’ may become embedded (Liht & Savage, 2013). As such, a promising pathway for interventions is to increase cognitive complexity and to particularly strengthen critical thinking capabilities. Enhancing critical thinking may act as a protective factor against violent extremism by strengthening the ability to critically engage with information and messages as well as to critically assess and question the source and content of ideas, which ultimately may build resilience against the attraction of extremist ideas and groups (Davies, 2009; Mattsson & Säljö, 2018).

### 6.3.5 Hypotheses

(1) The above accounts suggest that higher levels of trait forgiveness, internal locus of control and critical thinking are associated with less violent extremist attitudes and intentions among men via reduced misogynistic beliefs. Therefore, it is hypothesised that:

H1: Men who report higher levels of trait forgiveness will show less *violent extremist attitudes* via decreased misogynistic beliefs

H2: Men who report higher levels of trait forgiveness will show less *violent extremist intentions* via decreased misogynistic beliefs

H3: Men who report a stronger internal locus of control will show less *violent extremist attitudes* via decreased misogynistic beliefs

H4: Men who report a stronger internal locus of control will show less *violent extremist intentions* via decreased misogynistic beliefs

H5: Men who report higher levels of critical thinking will show less *violent extremist attitudes* via decreased misogynistic beliefs

H6: Men who report higher levels of critical thinking will show less *violent extremist intentions* via decreased misogynistic beliefs

(2) The above accounts also indicate that higher levels of trait forgiveness, internal locus of control and critical thinking are associated with less support for and intentions to engage in violence among men and women. Yet, it was expected that the effects would be stronger for men. As such, it was hypothesised that:

H7: Individuals who report higher levels of trait forgiveness will show less *support for general violence* via decreased misogynistic beliefs

H8: Individuals who report higher levels of trait forgiveness will show less *willingness to engage in general violence* via decreased misogynistic beliefs

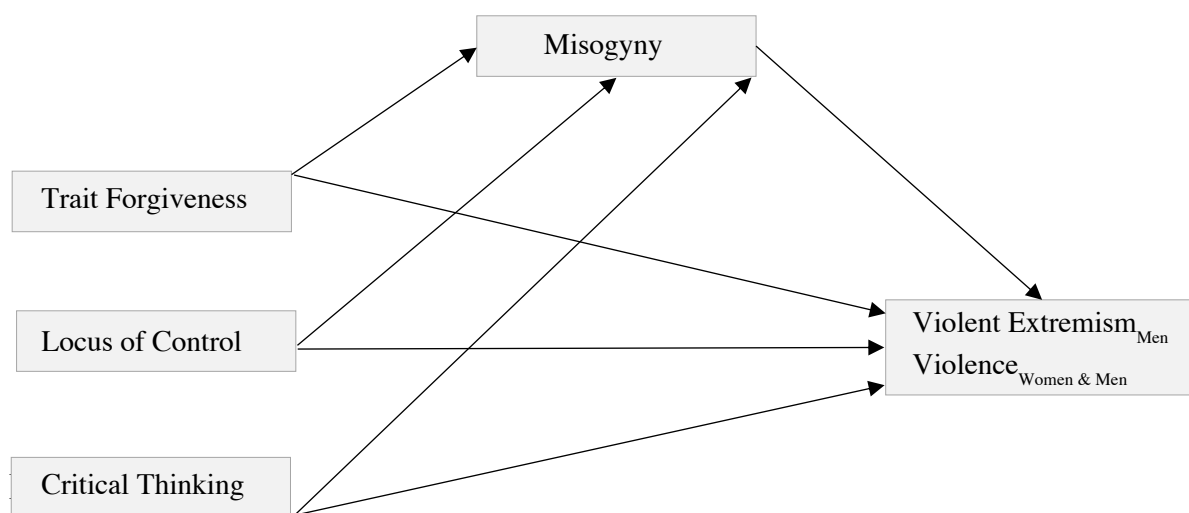
H9: Individuals who report a stronger internal locus of control will show less *support for general violence* via decreased misogynistic beliefs

H10: Individuals who report a stronger internal locus of control will show less *willingness to engage in general violence* via decreased misogynistic beliefs

H11: Individuals who report higher levels of critical thinking will show less *support for general violence* via decreased misogynistic beliefs

H12: Individuals who report higher levels of critical thinking will show less *willingness to engage in general violence* via decreased misogynistic beliefs

Figure 6.3. Multigroup path diagram to present the (moderated) mediations between the hypothesised protective factors: trait forgiveness, internal locus of control and critical thinking as predictors, misogyny as mediator and different (extremist) violence measures as outcomes.



### 6.3.6 Method

#### 6.3.6.1 Participants and Procedure

Participants were part of the same sample used Study 1 and the same dataset was used to estimate the models in Study 2. Data collection and cleaning procedures can be found in Study 1.

#### 6.3.6.2 Measures

##### *Forgiveness*

The validated 10-item ‘Trait Forgiveness Scale’ (Berry et al., 2005) was operationalised. Trait forgiveness refers to the disposition to forgive interpersonal transgressions over time and across situations (e.g., ‘*I can usually forgive and forget an insult*’, ‘*I have always forgiven those who have hurt me*’,  $\omega_{\text{Men}} = .79$ ,  $\omega_{\text{Women}} = .84$ ). The trait forgiveness scale demonstrated positive correlations with other validated dispositional forgiveness scales and has been shown to be negatively associated with trait anger, hostility, neuroticism, aggression and vengeful rumination and was further positively correlated with agreeableness and empathy (Berry et al., 2005).

##### *Locus of control*

Internal locus of control was assessed with a 10-item modified and shortened scale of the ‘Rotter I-E Scale’ (Rotter, 1966). The scale was designed to measure individuals’ perceived ability to influence events in their own lives (e.g., ‘*My life is determined by my own actions*’, ‘*I feel in control of my life*’,  $\omega_{\text{Men}} = .83$ ,  $\omega_{\text{Women}} = .81$ , Mueller & Thomas, 2000).

##### *Critical Thinking Disposition Scale*

Critical thinking was measured with the ‘Critical Thinking Disposition Scale’ (CTDS) (Sosu, 2012). The scale is comprised of two subscales, ‘Critical Openness’ and ‘Reflective Scepticism’ (e.g., ‘*It’s important to understand other people’s viewpoint on an issue*’, ‘*I often think about my actions to see whether I could improve them*’,  $\omega_{\text{Men}} = .82$ ,  $\omega_{\text{Women}} = .78$ ). The critical openness subscale describes individuals’ tendencies to be actively open to new ideas, but also to be critical in evaluating those and further captures the disposition to modify one’s thinking when faced with new and convincing evidence. On the other hand, the reflective scepticism subscale refers to the tendency to learn from past experiences and to question evidence before making decisions.

### 6.3.7 Results

Multigroup path analyses and mediation analyses were conducted in Lavaan and variables were entered as latent constructs (Rosseel, 2021). Like in the previous study, education and age were entered as control variables, and the models were estimated with 5000 bootstrap samples and 95% bias corrected bootstrap confidence intervals to account for the non-normal distribution of the outcome variables. All paths within the analysis of support for and willingness to engage in violence are moderated by gender and the separate direct, indirect and total effects for women and men are estimated to test for statistical significance between genders. CFAs on all measures were run, which had not been operationalised in the previous study. All indicators showed satisfactory factor loadings with standardised coefficients ranging from  $\beta = .67$  to  $\beta = .91$ . Table 6.3 displays the separate correlations of variables among men and women as well as mean differences between genders. Among men and women, trait forgiveness, internal locus of control and critical thinking showed significant positive correlations among each other and each of them was negatively and significantly correlated with all other variables. There were no significant mean differences for trait forgiveness and internal locus of control among genders. However, women showed slightly more self-reported critical thinking tendencies, which was statistically significant, but the effect size was weak.

Table 6.3. Descriptive statistics and correlations among variables of interest among men and women (Study 2).

Variables	Men	Women	Mean differences			Correlations									
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>t</i>	<i>p</i>	<i>d</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Misogyny	-	-	-	-	-	-	.24***	-.12***	-.09**	-	-	-	-	-	-
2. Trait Forgiveness	4.62 (.10)	4.53 (.10)	1.70	> .05	.08	-.46***	-	.36***	.16***	-.66***	-.25***	-.17***	-.22***	-.24***	-.32***
3. Locus of Control	4.58 (.84)	4.58 (.77)	.07	> .05	.003	-.23***	.33***	-	-.24***	-.30***	-.16***	-.20***	-.27***	-.24***	-.21***
4. Critical Thinking	5.47 (.84)	5.58 (.74)	-2.66	< .01	-.14	-.22***	.28***	.30***	-	-.15***	-.16***	-.09*	-.10**	-.15***	-.20***
5. Revenge Motivation	-	-	-	-	-	-	-.69***	-.25***	-.24***	-	-	-	-	-	-
6. Hypermasculinity	-	-	-	-	-	-	-.35***	-.19***	-.23***	-	-	-	-	-	-
7. Violent extremist attitudes	-	-	-	-	-	-	-.31***	-.27***	-.10**	-	-	-	-	-	-
8. Violent extremist intentions	-	-	-	-	-	-	-.29***	-.32***	-.18***	-	-	-	-	-	-
9. Justification violence	-	-	-	-	-	-	-.42***	-.23***	-.17***	-	-	-	-	-	-
10. Willingness violence	-	-	-	-	-	-	-.45***	-.20***	-.22***	-	-	-	-	-	-

Note. Pearson's correlation coefficients are reported. Correlations for women are presented above, and correlations for men below the diagonal of the correlation matrix.

$n = 1499$  ( $n_{\text{women}} = 769$ ;  $n_{\text{men}} = 730$ ).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Both analyses were conducted in Lavaan, the mediation models for men estimating violent extremist attitudes and intentions as outcome variables and the multigroup analyses across gender groups with the general violence criterion variables (Rosseel, 2021). The multigroup approach was applied to the general violence measures in order to simultaneously estimate the same model for men and women and to test for statistical differences as well as to estimate the strength of the differences. As such, each path of the multigroup path analyses was moderated by gender. Lavaan provides separate estimates for both groups (i.e., contrasts) for all paths. This is identical to testing the significance of dummy-coded variables, i.e., testing the effects at value 1 (i.e., females) of the moderator against the effect at 0 (i.e., males) (Hayes, 2017b). It also provides separate indirect effects for both groups. Differences in indirect effects between groups were calculated in order to provide an estimate of the strength of differences between women and men. A positive value would indicate a stronger effect among men and a negative value would suggest a stronger effect among women. In order to establish whether the difference is statistically different from zero, another model without gender moderations was estimated and an ANOVA was run to compare the original model to the alternative model. A significant ANOVA means that the differences in indirect effects are statistically significant. This procedure is almost identical to establishing the index of moderated mediation in PROCESS, which provides the difference between conditional indirect effects (Hayes, 2017a).

*Mediation analysis: Trait forgiveness, internal locus of control, critical thinking, misogyny, violent extremist attitudes and intentions, among men*

The trait forgiveness models explained, per adjusted  $R^2$ , 24% of variance in misogyny, 14% of variance in violent extremist attitudes and 16% of variance in violent extremist intentions across the male sample. As predicted, the direct effect between trait forgiveness and violent extremist attitudes was positive and significant (see Table 6.4). In line with H1, the indirect effect via misogyny was also significant. The direct association between trait forgiveness and violent extremist intentions was negative and significant after taking into account the effects of misogyny and covariates. Contrary to the H2, the indirect association between trait forgiveness and violent extremist intentions via misogyny was non-significant.

The internal locus of controls model explained 8% of variance in misogyny, 14% of variance in violent extremist attitudes and 19% of variance in violent extremist intentions across the male sample. As expected, misogyny was a significant mediator between locus of control and violent extremist attitudes, thus supporting H3. In addition, even after accounting

for the significant mediational pathway, internal locus of control remained significantly and directly associated with violent extremist attitudes. Consistent with H4, the relationship of locus of control on violent extremist intentions also showed a negative and significant indirect effect via misogyny and the direct effect of locus of control was also negative and significant after misogyny and covariates were accounted for.

The critical thinking models explained 8% of variance in misogyny, 10% in violent extremist attitudes and 16% of variance in violent intentions among men. Consistent with H5 and H6, the indirect effects of critical thinking on violent extremist attitudes and violent extremist intentions were significant and negative. The direct effects were also negative and significant, indicating that critical thinking significantly and negatively predicted violent extremist attitudes and intentions after taking the effects of misogyny and control variables into account.

*Multigroup path analysis: Trait forgiveness, internal locus of control, critical thinking, misogyny, justification of and willingness to use violence, among men and women*

The trait forgiveness models explained per adjusted  $R^2$ , 19% of variance in misogyny, 31% in justification of violence and 31% of variance in willingness to use violence across genders. In line with H7, both indirect effects of trait forgiveness on support for violence via misogyny were statistically significant (see Table 6.4 for all results). Further, an ANOVA was run to establish whether the differences in indirect effects were significant. Findings showed that the effects were significantly stronger among men indicating a significant difference between conditional indirect effects. Similarly, the indirect effects between trait forgiveness and intentions to use violence via misogyny were significant and negative for men and women, thus confirming H8. Again, the indirect effects significantly differed, suggesting that the effects are more pronounced among men. The direct effects of trait forgiveness were also negative and significant across gender and for both general violence outcome measures.

The internal locus of control models explained 9% of variance in misogyny, 29% of variance in support for violence and 26% of variance in willingness to engage in violence among men and women. For both general violence variables, similar to previous findings and consistent with H9 and H10, the separate indirect effects of internal locus of control via misogyny were significant amongst men and women. As before, the statistical test of the difference between conditional indirect effects was significant, indicating that the effects were



much stronger for men. Across both genders, the direct effects of locus of control were significant after accounting for mediational associations and covariates.

Lastly, across both groups, critical thinking explained 8% of variance in misogyny, 28% of variance in support for violence and 27% of variance in willingness to use violence. Contrary to the hypotheses, misogyny did not mediate the effects of critical thinking on any of the two general violence outcomes among women, thus rejecting H11 and H12. Conversely, the indirect effects among men were significant and negative, rendering the differences in conditional indirect effects also significant. Yet, across genders, the direct effects of critical thinking on both violence measure were significant and negative (see Table 6.4).

Table 6.4. Protective factors (moderated) mediations among women and men (Study 2).

Group	Predictor	Criterion	Direct effect	Indirect effect	Total effect	Difference in indirect effects
Men	Trait forgiveness	Violent extremist attitudes	<b>-.34 [-.45, -.23]</b>	<b>-.07 [-.13, -.01]</b>	<b>.41 [-.51, -.31]</b>	
		Violent extremist intentions	<b>-.27 [-.38, -.17]</b>	-.04 [-.09, .02]	<b>-.31 [-.40, -.22]</b>	
		Justification of violence	<b>-.32 [-.41, -.23]</b>	<b>-.20 [-.25, -.14]</b>	<b>-.52 [-.59, -.42]</b>	
		Willingness to use violence	<b>-.34 [-.42, -.26]</b>	<b>-.16 [-.21, -.10]</b>	<b>-.50 [-.56, -.42]</b>	
Women	Trait forgiveness	Justification of violence	<b>-.14 [-.19, -.08]</b>	<b>-.04 [-.07, -.02]</b>	<b>-.18 [-.24, -.13]</b>	.16***
		Willingness to use violence	<b>-.20 [-.26, -.15]</b>	<b>-.03 [-.06, -.18]</b>	<b>-.23 [-.29, -.19]</b>	.13***
Men	Locus of control	Violent extremist attitudes	<b>-.36 [-.48, -.24]</b>	<b>-.06 [-.10, -.03]</b>	<b>-.42 [-.54, -.30]</b>	
		Violent extremist intentions	<b>-.41 [-.52, -.30]</b>	<b>-.03 [-.07, .005]</b>	<b>-.44 [-.55, -.33]</b>	
		Justification of violence	<b>-.17 [-.27, -.07]</b>	<b>-.14 [-.19, -.09]</b>	<b>-.31 [-.42, -.20]</b>	
		Willingness to use violence	<b>-.12 [-.17, -.08]</b>	<b>-.13 [-.17, -.08]</b>	<b>-.25 [-.34, -.15]</b>	
Women	Locus of control	Justification of violence	<b>-.20 [-.27, -.13]</b>	<b>-.03 [-.06, -.01]</b>	<b>-.23 [-.30, -.16]</b>	.11***
		Willingness to use violence	<b>-.16 [-.23, -.09]</b>	<b>-.03 [-.06, -.01]</b>	<b>-.19 [-.26, -.12]</b>	.10***
Men	Critical thinking	Violent extremist attitudes	<b>-.13 [-.25, .001]</b>	<b>-.07 [-.11, -.04]</b>	<b>-.20 [-.32, -.07]</b>	
		Violent extremist intentions	<b>-.24 [-.36, -.13]</b>	<b>-.04 [-.07, -.01]</b>	<b>-.28 [-.39, -.17]</b>	
		Justification of violence	<b>-.14 [-.24, -.04]</b>	<b>-.13 [-.18, -.08]</b>	<b>-.27 [-.38, -.16]</b>	
		Willingness to use violence	<b>-.18 [-.27, -.09]</b>	<b>-.11 [-.16, -.07]</b>	<b>-.29 [-.38, -.19]</b>	
Women	Critical thinking	Justification of violence	<b>-.14 [-.21, -.07]</b>	<b>-.02 [-.05, .0002]</b>	<b>-.16 [-.24, -.09]</b>	.11***
		Willingness to use violence	<b>-.18 [-.25, -.10]</b>	<b>-.02 [-.04, .0009]</b>	<b>-.20 [-.27, -.12]</b>	.09***

*Note.* Direct, indirect and total effects of protective factors predicting violent extremist attitudes and violent extremist intentions among men, mediated by misogyny. Moderated mediations for justification of violence and willingness to use violence among women and men. 95% bias-corrected confidence intervals used, along with 5000 bootstrap samples. Controlling for age and education. Significant effects are bolded for ease of viewing. Difference in indirect effects = estimate and statistical difference test for indirect effects between women and men (index of moderated mediation). Men coded as 0, women coded as 1.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## 6.4 Discussion and Limitations

Mainstream discourses are increasingly reporting a link between gender-based violence and mass violence (e.g., Lopez, 2017; Sakuma, 2019). Notably, women are the most common victims of mass shootings (Everytown for Gun Safety, 2017; United Nations Office on Drugs and Crime, 2013) and a history of gender-based crimes and violence, e.g., harassment and sexual assault, is common among perpetrators of mass violence (e.g., Smidt, 2018; Snyder, 2018). However, empirical research into gender-based mechanisms underlying these acts of mass violence are almost absent (e.g., Scaptura & Boyle, 2020). Patriarchal gender ideologies that underlie and enable such acts of mass violence and its connection to violence and crimes against women more broadly, such as intimate partner violence, abuse and stalking, are scarce.

Relatedly, an increasing number of public acts of mass violence, such as recent far-right terrorist attacks and incel affiliated mass killings, have been committed by men with deeply misogynistic motives who felt angry, rejected and insufficiently recognised by women and thus, engaged in retaliatory behaviours (e.g., Wilson, 2020). While there are various other grievances and factors, such conspiratorial world views, paranoia and mental health issues that motivated the attackers, misogyny seems to have played a crucial part within perpetrators' motivations, yet it is rarely acknowledged (Wilson, 2020). Arguably, misogynistic attacks within recent years provide growing evidence of violent subcultures explicitly targeting women due to their perceived threats to manhood, sexual entitlement and male dominance within modern societies (Scaptura & Boyle, 2020; Gotell & Dutton, 2016). Accordingly, misogynistic motives within recent acts of mass violence describe an emergent trend in terrorism with a salient hate crime dimension whereby a particular form of violent extremism, an 'ideological masculinity', drives violence against women and society more broadly (Hoffman et al., 2020). Yet, the vast majority of research on ideological motivations of violent extremists (e.g., in the context of far-right extremism and Jihadism), predominantly emphasise religious, political or ethnic grievances, while there is a lack of research studying gender-related grievances and motivations of individuals (men and women) espousing violent (extremist) ideologies.

Notably, among most of these incidents, rather than being the sole motive, misogyny seems to have been interrelated with various other grievances and adverse experiences, which together appear to have formed an extremely hostile worldview, whereby anger, perceived injustice and resentment were played out through violent acts. For instance, most of these perpetrators tend to have experienced various achievement failures and severe strains (e.g., rejection, humiliation) (Marganski, 2019), which left them feeling wronged and victimised.

Feelings of male frustrated entitlement are fundamental to these incidents, pertaining to beliefs that men are entitled and justified to use violence to restore what they believe is ‘rightfully’ theirs and as such, inspires revenge against those who have wronged them (Kalish & Kimmel, 2010). A sense of frustrated entitlement has further been argued to play a functional role in drawing men towards extremist groups, particularly far-right groups, which propagate that White men have been unfairly deprived of their ‘rightful’ place in society (Kimmel, 2018; 2019). Similarly, due to rejection and failure to find a romantic partner, perpetrators have been found to experience gender and status challenges, which led them to engage in hypermasculine behaviours as a compensatory and restorative response to perceived threats to ‘manhood’ (Scaptura & Boyle, 2020).

Therefore, the aim of the present study was to analyse the relationship between misogyny and violent extremism as well as violence more generally. Misogyny, i.e., derogatory and antagonistic beliefs about women as a social group, may help to uplift men’s self and the group image and to restore (lost) self- and group worth, particularly if women are perceived to threaten traditional gender hierarchies (Golec de Zavala & Keenan, 2021). Interestingly, the study showed that both men and women endorse misogynistic attitudes but the consequences of holding such beliefs differ between men and women. While misogyny was significantly and positively related to violent extremist attitudes and intentions among men, this relationship was not significant within the female sample.

Chapter 6 is based on the first survey study to examine the relationship between misogyny and violent extremism. Study 1 examined whether and how misogyny, group threats and frustrated narcissistic entitlement translate into revenge motivation and hypermasculinity and thus, may increase violent extremist intentions and attitudes as well as justification of and willingness to engage in interpersonal violence. The findings suggest that engagement in violent extremism and interpersonal violence may be partly driven by misogyny, revenge motivations and hypermasculinity. More specifically, the findings showed that men who hold stronger misogynistic beliefs and who demonstrate higher levels of collective narcissism, are more likely to engage in revenge planning, which in turn is positively associated with stronger support of and willingness to engage in violent extremism and interpersonal violence. The present findings suggest that similar to individual narcissists, who have been found to engage in retaliatory interpersonal aggression to protect their inflated egos (Baumeister, Smart, & Boden, 1996; Chester & DeWall, 2016), men who espouse misogynistic and collective narcissistic beliefs, hold more revenge thoughts and are more likely to engage in violence. Similarly, the results are in line with studies that have found that hostile sexism among Polish

men (Golec de Zavala & Bierwiazzonek, 2020) is related to (male) collective narcissism, while collective narcissism was further associated with retaliatory intergroup aggression (Golec de Zavala et al., 2013) and an increased desire for revenge, particularly against outgroups who were perceived to be threatening (Dyduch-Hazar & Mrozinski, 2021). Recent studies have also found evidence that collective narcissism is positively related to support for violent extremist ideologies and groups (Jaśko et al., 2017).

The second conditional mediation analysis found that when misogynistic men feel threatened based on their ingroup, they are much more likely to exhibit hypermasculine attitudes (e.g., justifying violence and emphasising male dominance and strength), which in turn, are related to higher levels of support for and stronger intentions to engage in violent extremism as well as interpersonal violence. These findings are consistent with the idea that adopting a violent masculinity and executing a violent retribution may represent means of demonstrating or restoring masculinity, particularly if men experience group or status threats (Bosson & Vandello 2011; Vandello et al., 2008). The link between misogyny, masculinity and violence is further evident within extremist groups. The study findings align with previous research which argues that the patriarchal nature of jihadist and far-right ideologies is tied to a strict adherence to masculine gender/ cultural ideals. Correspondingly, engagement in violent extremist groups has been argued to depict a way of exhibiting male dominance whereby the use of violence is a means to assert a masculine status (Pearson, 2017; 2020).

The findings of the second study indicate that trait forgiveness, internal locus of control and critical thinking are directly and negatively associated with misogyny as well as violent extremist attitudes and intentions among men. The analyses further highlight that part of the relationship between trait forgiveness, internal locus of control, critical thinking and violent extremism is mediated via misogyny. Thus, these factors may act as protective factors against violent extremism and misogyny. By strengthening these protective factors, risks towards misogyny and violent extremism may be lessened. However, I emphasise that more research into the protective factors for violent extremism is required and future studies should try to further delineate the underlying mechanisms and incorporate additional moderation analyses in order to achieve more nuanced findings. It is important to mention that this study entails some limitations (see chapter 7.2 for a detailed description of study limitations). Study 2 assessed individuals' self-reported critical thinking tendencies, rather than their critical thinking ability. Future analyses should employ validated critical thinking tests in order to examine whether critical thinking styles and thinking abilities differ in predicting misogyny and violent extremism. Furthermore, it is important to mention that both studies in chapter 6

were based on the same data gathered in the UK. As such, the findings may not easily generalise to other contexts. Therefore, I strongly encourage future studies to examine the associations among misogyny and violent extremism in other contexts.

## **6.5 Conclusion**

Misogyny, male narcissistic entitlement, revenge motivations as well as status threats have shown to motivate explicit misogynistic attacks but are also common motives among far-right terrorists (Hines, 2019; Jasser et al., 2020) and represent drivers for joining extremist groups (DiBianco, 2020). These developments and the subsequent findings of this chapter highlight that more research into the above-mentioned concepts is necessitated in order to understand the impacts such beliefs and resulting worldviews can exert upon violent extremism and interpersonal violence. I argue that rather than assessing those grievances and strains in isolation, it is imperative to analyse the interplay of factors that provide men a sense of being unfairly deprived of their deserved place in society, which may lead to support of and engagement in (extremist) violence and which ultimately intends to provide them a sense of empowerment and male superiority. Research on these concepts may offer promising avenues for examining the mechanisms underlying misogynistic violence and attraction to extremist groups more broadly.

Importantly, I further argue that it is fundamental to apply a gendered framework in order to better understand mass violence and violent extremism. Acknowledging gendered socialisation processes in relation to violence perpetration as well as gendered radicalisation processes will be an important step forward. Continuing to downplay the relationship between gender, sex, masculinity, and mass violence and failing to acknowledge the fact that perpetrators of these crimes are predominantly men and thus, treat it as gender-based violence, will contribute and further sustain a culture of male dominance and aggression. As such, I encourage further research into the gender-based mechanisms underlying acts of mass and extremist violence.

## Chapter 7: Thesis Conclusion

This chapter summarises the findings of this thesis, outlines limitations to consider and discusses directions for future research.

### 7.1 Discussion of Findings

This thesis' main aims were to contribute towards establishing a robust quantitative evidence base for violent extremism and to analyse the mediating and interaction effects of various risk and protective factors in order to better understand the underlying mechanisms, complex configurations and their contingent effects. While scientific progress within violent extremism research is evident, the field continues to suffer from a lack of a coherent empirical knowledge base on vulnerability to radicalisation.

The first empirical analysis (chapter 2) synthesised the quantitative studies on different radicalisation outcomes to provide a comprehensive overview of the empirical evidence thus far. Yet, several methodological and conceptual limitations continue to impede the field's development. Further, findings from the systematic review showed that various risk and protective factors closely resembled previous research findings on youth violence and offending (for similar results see Wolfowicz et al., 2020a; Lösel et al., 2018). Hence, research should focus on the psychological and social environmental processes underlying vulnerability to violent extremism and should apply a theoretically integrative approach based upon well-established theoretical frameworks within developmental and life course criminology.

Chapter 3 then applied a conceptually integrated approach to studying the individual and social environmental explanations for violent extremism. The analytical framework was guided by criminological theories explaining criminal propensity development (e.g., Agnew, 2010; Sampson & Bartusch, 1998; Wikström, Oberwittler, Treiber, & Hardie, 2017). The findings highlighted key individual, developmental and social mechanisms involved in the development of extremist propensities. Notably, the results showed that individuals vary in their risk of exposure to extremist settings, rendering some people more likely to be selected into extremism-conducive environments. The results of the structural equation model demonstrated that selection susceptibility is determined mainly by levels of morality and self-control, suggesting that individuals are more likely to be exposed to extremist settings if they hold low law-related moral beliefs and exhibit poor self-regulation (for detailed description of

the theoretical framework see Bouhana, 2019). Importantly, exposure to extremist settings emerged as a key mechanism and thus, provides an explanation for the selection processes of susceptible individuals to extremist socialising influences in their environment, indicating profound person-environment reciprocity at play.

While chapter 3 examined several underlying mechanisms, it was further expected that the effects of certain risk factors are dependent on other risk or protective factors being present and thereby may lead to differential vulnerabilities to violent extremism. Therefore, it is key to take account of the constellation of multiple factors that interact with (and sometimes enable or disable) one another rather than solely focusing upon the independent effects of single risk factors. This closely resembles research on youth violence and delinquency (e.g., Lösel & Bender, 2017; Lösel & Farrington, 2012). The results showed that stronger conspiracy beliefs lead to increased violent extremist intentions. Importantly, this relationship was contingent upon several individual differences. The effects were found to be much stronger for individuals with lower self-control, a weaker law-relevant morality, and stronger self-efficacy beliefs. Conversely, the adverse effects of conspiracy beliefs on violent extremist intentions were lessened for those individuals exhibiting high self-control and a strong law-relevant morality. Thus, chapter 4 suggests more research on the protective factors against violent extremism is required in order to elaborate how these may prevent the onset, nullify or buffer against the adverse effects of risk factors. Notably, the analysis highlighted that it is in such adverse circumstances (e.g., the experience of risk factors) where the true value of protective factors becomes apparent (Rutter, 2012) and this provides a multitude of insights for how we should design interventions focused on preventing and countering violent extremism.

Chapter 5 and chapter 6 addressed the concept of misogyny and its relationship with violent extremism and interpersonal violence more generally. While the misogyny scale was developed and validated within chapter 5, the last empirical chapter (chapter 6) highlighted the underlying mechanisms and contingent effects linking misogyny to (extremist) violence. There is growing evidence that various risk factors for violent extremism overlap with parallel problem areas, such as domestic violence, mass murder and stalking. Yet, the connection to violence and crimes against women more broadly and empirical research into gender-based mechanisms underlying these acts of mass violence are almost absent (e.g., Scaptura & Boyle, 2020). Arguably, misogynistic motives within recent acts of mass violence describe an emergent form of violent extremism with a salient hate crime dimension, an ‘ideological masculinity’, that drives violence against women and society more broadly (Hoffman et al., 2020). The findings suggest that misogyny may constitute an antecedent for (extremist)



violence. The results found that misogyny predicts increased revenge planning and hypermasculinity, which in turn leads to stronger violent extremist attitudes and intentions as well as increased support for and willingness to engage in violence, particularly among those men who experience frustrated narcissistic entitlement and greater threats to their ingroup. This demonstrates that more research is necessitated in order to understand the impacts such beliefs and resulting worldviews can have upon violent extremism and interpersonal violence. Importantly, rather than assessing these grievances and strains in isolation, it is imperative to analyse the interplay of those factors. Research on these concepts may offer promising avenues for examining the mechanisms underlying misogynistic violence and attraction to extremist groups more broadly. Finally, I argue that it is fundamental to apply a gendered framework in order to better understand mass violence and violent extremism. Acknowledging gendered socialisation processes in relation to violence perpetration as well as gendered radicalisation processes will present a crucial and necessary step forward.

## **7.2 Limitations and Directions for Future Research**

Progress within the field of radicalisation more broadly and on the risk and protective factors for violent extremism more specifically, is evident. Despite these advancements, research on the risk and protective factors for violent extremism continues to be impeded by conceptual and methodological limitations as described in the systematic review chapter (chapter 2). As such, it is imperative to be transparent about these research limitations, particularly in regard to the often-claimed causality of research findings. Being aware of these shortcomings, is not only important when designing and conducting empirical research, but also when evaluating the practical implications of those findings and particularly when they are used to inform P/CVE approaches.

There are also some limitations to the individual chapters in this thesis which need to be taken into account. While the empirical analyses are based on large-scale German and UK nationally representative data examining violent extremist intentions, the samples do not consist of individuals who have actually engaged, to the best of my knowledge, in violent extremism. As such, this thesis applied a proxy measure in order to assess individuals' willingness to engage in violent extremist behaviour. Assessing actual violent extremist behaviour is a very challenging task to undertake in general population samples. This is due to issues with ethics approvals and misreporting of survey answers, particularly social desirability bias presents a great challenge to any survey study measuring sensitive items. To attenuate

these issues, behavioural intentions (i.e., violent extremist intentions) rather than individuals' actual behaviours were measured. Ajzen's theory of planned behaviour (1985; 1991) posits that intentions constitute the immediate antecedents of behaviour and therefore, reveal people's readiness to perform a behaviour (Ajzen, 2012).

The theory of planned behaviour corroborates the idea that, compared to beliefs and attitudes, intentions account for a substantial proportion of variance in actual behaviour, and thus are assumed to capture the motivational factors that influence a behaviour. However, it is important to note that it is difficult to establish if and how behavioural intentions will translate into actual behaviour. Nevertheless, stronger intentions to engage in a certain behaviour make it more likely that people will actually perform that behaviour (Ajzen, 1991; Ajzen & Madden, 1986) and research on attitude-behaviour relations does suggest that under appropriate conditions, intentions can be relatively good predictors of actual behaviour (Banaji & Heiphetz, 2010). Correspondingly, several meta-analyses confirm strong intention-behaviour correlations (Armitage & Conner, 2001; Notani, 1998; Randall & Wolff, 1994). This is in line with previous research in social psychology which has found that behavioural intentions can serve as a useful proxy for understanding and predicting corresponding behaviour (Ajzen & Fishbein, 1980; Webb & Sheeran, 2006) and that collective action intentions are strongly related to actual participation (De Weerd & Klandermans, 1999).

Both nationally (Germany and U.K.) representative samples come with some limitations. The samples are only approximatively representative based on the following variables: age, gender and ethnicity. For instance, for both samples, the highest educational level is higher than what we find for the average German and UK population and Muslim participants are slightly underrepresented. We have to take this into account when interpreting the findings. Similarly, I acknowledge that the surveys with an average length of around 30 minutes were relatively long and therefore, certain participants with more spare time may be slightly overrepresented. Additionally, the UK data was collected online via the survey platform Prolific. Participants without internet access and those who have not signed up to the platform will not be covered in the sample.

Another limitation is that all analyses are based on cross-sectional data. Despite having tested multiple complex models, including a full structural equation model with mediation analyses (chapter 3) as well as several interaction analyses (chapter 4) and moderated mediation models (chapter 6), it is not possible to draw causal inferences. I acknowledge that the ordering and the direction of the constructs are informed by the theoretical frameworks and cannot be established with cross-sectional data despite having tested for reversed directionality

of relationships (i.e., reversed causality) and alternative paths (Chapter 3 and 6). While this constitutes a limitation to the overall thesis, I believe that even cross-sectional examinations of these models are a valuable contribution to improve our understanding of vulnerability to violent extremism, especially since there are few studies applying theoretically informed approaches to studying violent extremism and even fewer that test theoretical process models. Nevertheless, future studies should consider experimental and longitudinal designs as such data is required to establish causation.

The individual studies have only been conducted in Germany and the UK and therefore, we cannot be certain if the models would be applicable to other contexts. Nevertheless, the results of the structural equation model in chapter 3 are consistent with findings of similar studies conducted in Switzerland (Nivette et al., 2017), Belgium (Pauwels et al., 2018), the UK (Perry et al., 2018) and the Netherlands (Doosje et al., 2013). This suggests that the findings are not specific to the German context, but we have to acknowledge that proper replication studies in other countries are required in order to generalise the results. Additionally, I argue that in order to test if the underlying processes explaining vulnerabilities to extremism are not specific to any ideology, but rather apply to any unlawful extremist behaviour, the studies would benefit from replicating the analyses with proxy measures for violent extremism which refer to a particular set of values, such as far right or jihadist beliefs. If the same mechanisms apply when utilising different extremism measures, this will serve as a robustness test for the analyses.

Of course, if the same key factors account for both common criminality and extremism, it begs the question of why some individuals acquire one kind of propensity over another (and some indeed acquire both). Bouhana's (2019) S<sup>5</sup> framework makes the case that the question cannot be answered unless we acknowledge that most of the key drivers of propensity development – and criminal behaviour – are environmental. Individuals acquire one kind of propensity over another *because* they are exposed to one kind of (extremism or crime-promoting) setting rather than another, *because* one kind of (extremism or crime-promoting) setting rather than another is more likely to emerge in an individual's environment as a result of certain social ecological and systemic processes, the elaboration of which is beyond the scope of this thesis. Suffice it to say that to explain why terrorism results over common crime or vice versa is more a matter of explaining why certain environments promote the emergence of, and exposure to, particular settings at particular times, than a matter of explaining why certain individuals are susceptible to moral change. In this vein, we might hypothesise that in most Western societies relatively few individuals acquire a terrorist propensity, because

relatively few extremism-promoting settings emerge in their environment, because by-and-large the vast majority of people living in these societies do not believe that terrorism is morally legitimate, and the stability of our systemic norms and processes of governance keep it so, durably suppressing the emergence of said settings of exposure.

In addition, I strongly encourage future studies to incorporate more research on cognition-emotion interactions and to examine the underlying cognitive, affective and neuropsychological mechanisms, which are suspected to link various risk factors, e.g., conspiracy mentalities, cognitive rigidity, poor executive functioning as well as impulsivity and risk-taking (sensation-seeking), to susceptibility to extremism. This necessitates further testing of individual differences in implicit cognitive and affective information processing styles. Validated cognitive tasks that assess cognitive flexibility, executive functioning and critical thinking abilities are required. Further, psychometric scales assessing personality traits and tendencies, such as impulsivity, goal directedness, sensation-seeking and open-minded thinking styles should be applied to test for these differences. A recent study operationalising cognitive tasks showed that cognitive rigidity proved to be a cognitive antecedent of extremist attitudes (Zmigrod, Rentfrow, & Robbins, 2019). Additionally, experimental research reveals that interventions which stimulate analytical thinking attenuate conspiratorial beliefs (Voracek, Stieger, Tran, & Furnham, 2014). Therefore, interventions to enhance analytical and critical thinking skills should increasingly be implemented in schools as especially young adolescents are most vulnerable to peer and extremist influences.

Importantly, those cognitive factors, such as critical thinking skills and cognitive flexibility may effectively reduce conspiracy beliefs, cognitive rigidity and enhance executive functions and thereby, could potentially act as protective factors for developing (violent) extremist propensities. The way we are processing information off- and online is affecting our capacity for 'deep processing' skills: inductive analysis, critical thinking, imagination, and reflection. Additionally, it is vital to equip young people with sufficient digital literacy in order to detect extremist and conspiracy narratives spread online by extremist groups. Whereas government agencies and tech companies have to do their part in countering and detecting extremist and conspiratorial narratives, civil society must also play a proactive role in confronting the lies and myths of conspiracy theories and extremist narratives.

While the above outlined limitations of the individual chapters of this thesis and corresponding areas for future research, the following addresses some more general challenges and persistent limitations to bear in mind when conducting quantitative research on the developmental processes of violent extremism. To date, there is still insufficient evidence about

what constitutes a risk or protective factor for different radicalisation outcomes. Additionally, even less is known about the relative weight, interactional and contextual nature or potential clustering of various factors (Gill, 2015). Research in other fields, such as studies on interpersonal violence, demonstrate that the probability as well as the intensity of adverse outcomes increase significantly as a function of accumulated risks, which has been labelled as a ‘dose-response relationship’ (Lösel & Bliesner, 2003). As such, it is plausible to assume that risk towards radicalisation and violent extremism increases when multiple risk factors are present (Jensen et al., 2016).

Conversely, an inverse dose–response relationship may be equally applicable for understanding the effects of direct and buffering protective factors, whereby the probability of adverse outcomes decreases as the number of protective factors increases (Lösel & Bender, 2003; Stattin, Romelsjö, & Stenbacka, 1997). Relatedly, several studies on juvenile delinquency confirmed a dose-response relationship between the severity of offending and risk and promotive factors, indicating that the more serious the offending, the higher the number of risk factors and the lower the number of direct promotive factors (e.g. Stouthamer-Loeber et al., 2004). Thus, accumulated protective factors are hypothesised to have a much stronger protective effects on radicalisation outcomes than single factors do. ‘Dosage’ may determine the magnitudes of risk and protective factors effects, rendering dose– response relationships key for prediction and intervention (Lösel et al., 2018; Lösel & Farrington, 2012; Wolfowicz et al., 2020a).

Additionally, the relative importance of risk and protective factors and the complex relationships underlying as well as linking those to another, further play a crucial role in predicting increased risk. Similar to other types of criminality and violence, the interactive effects of various associated risk factors are most indicative (Lösel & Bender, 2017; Loeber, Farrington, Stouthamer-Loeber, & White, 1998). At the same time, when multiple risk factors are present, rather than constituting a simple additive risk, their joint effect and interaction on the outcome variable need to be analysed (Cicchetti, Rogosch, Lynch, & Holt, 1993). Rather than being static, it is expected that the relationships between these factors will be dynamic and that particularly the interaction between various risk- and protective factors will lead to dynamic configurations of these determinants. Therefore, analysing risk- and protective factors in isolation without acknowledging their interactional nature neglects the complex relationships at work and ultimately hampers our understanding of the underlying mechanisms (see chapter 4; Rottweiler & Gill, 2020).

Therefore, the effects of a certain risk factor is expected to be contingent on other risk- or protective factors and thereby may lead to differential vulnerabilities to violent extremism. The developmental outcomes among individuals at high risk and the “maintenance of positive adaptation by individuals despite experiences of significant adversity” (Luthar et al., 2000, p. 543) are essential when studying risk and protective factors for violent extremism. This necessitates further elaboration of the multifinality of radicalisation outcomes, meaning that some risk factors will lead to very different outcomes for some individuals (Perliger, Koehler-Derrick, & Pedahzur, 2016; Schuurman, 2020b). This highlights the inherent difficulty in establishing which risk factors will indeed lead to an increased risk of engagement in violent extremism. Accordingly, Corner et al. (2019) demonstrated the multifinality of vulnerability indicators in trajectories towards lone-actor violence. More specifically, individual-level risk factors and indicators were shown to have a differential effect on individuals at different stages along their pathways to violent extremism. As such, it is vital to elucidate the underlying causal mechanisms underpinning trajectories towards radicalisation.

Additionally, research has identified numerous individual pathways into violent extremism (i.e., violent extremists hold different risk factors) (Borum, 2011; Githens-Mazer, 2009; Marquant, & Nedopil, 2018). This phenomenon refers to the concept of ‘equifinality’ (Cicchetti & Rogosch, 1996), meaning distinct pathways can lead to the same outcome, such as engagement in violent extremism (Gill, Farnham, & Clemmow, 2021; Horgan, 2014). Thus, the multifinality of those factors as well as the equifinality of pathways towards involvement in violent extremism need to be taken into account. Furthermore, there is empirical evidence which shows that particular risk and protective factors are more predictive at certain stages in individuals’ development, meaning they differentially effect adverse outcomes at the onset, aggravation or persistence (Loeber & Farrington, 2012). Thus, it is crucial to account for the differential effects of risk as well as direct promotive and buffering protective factors, depending on the specific period. Some factors may have opposite effects on outcomes of interest depending on the different phases or patterns of development (Hall et al., 2012).

Thus, I suggest that the concept of developmental chain reactions which has been applied within developmental criminological studies, may provide a useful framework to advance research on radicalisation processes. The concept suggests that risk and protective factors can be tackled at various developmental phases in order to enhance resilience and thus, reduce risk. Similarly, Lösel and Bender (2003) proposed that the accumulation of some risk and/or protective factors induces chain reactions into and out of violence, which starts with

influences in early childhood that have a knock-on effect on developmental processes throughout adolescence and adulthood.

Therefore, I recommend that future studies should analyse the most commonly significant risk and protective factors identified in the systematic review with longitudinal and well-controlled quasi experimental research designs, similar to study designs employed within criminological research (e.g., Farrington, 2004; Kraemer et al., 1997). Those research designs allow more than mere associations to be established and will help to identify which of those might be causal risk and protective factors. It is important to acknowledge how past influences have shaped radicalisation outcomes, particularly as research shows that adverse childhood effects, such as domestic abuse and exposure to violence can affect violence perpetration in adolescence and adulthood (Loeber, Slot, & Stouthamer-Loeber, 2006). It might not just be the dose-response effect, e.g., a greater number of risk factors being present, but also the appearance as well as disappearance of protective influences over time.

Such a process-oriented analysis is vital for identifying dynamic configurations of risk and protective factors which may underlie radicalisation processes. Thus, research on violent extremism may greatly benefit from conducting prospective longitudinal research on risk and protective factors, similar to those that have been applied to analyse the development of interpersonal violence (see Herrenkohl et al., 2000). For example, criminological research focusing on interpersonal violence and delinquency has shown that by applying prospective longitudinal studies a sound and comprehensive understanding of the risk and protective function of various factors among general youth can be achieved (Ttofi et al., 2016b). Additionally, prospective studies have provided profound empirical evidence of the characteristics of youth who are at risk of becoming serious and violent offenders. A similar approach is recommended in regard to studying radicalisation processes.

Furthermore, radicalisation is a complex and multifaceted process with diverse pathways and outcomes to it (Borum, 2012; Jensen et al., 2016; Kruglanski, Bélanger, & Gunaratna, 2019). This inherent complexity renders it particularly difficult to conceptualise and operationalise the construct of radicalisation. Arguably, a variety of measures will be required in order to measure different radicalisation outcomes, such as the cognitive aspects of it (i.e., extremist attitudes or extremist intentions) as well as assessing the behavioural components of the concept (i.e., engagement in violent extremism) (Ozer & Bertelsen, 2018). Importantly, future studies should seek to elucidate the complex relationship between violent extremist attitudes, violent extremist intentions and violent extremist behaviours. There is still a lack of studies comparing those individuals with violent extremist attitudes and intentions to

those who actually engage in extremist behaviour (Schuurman, 2020b). The majority of studies examining self-reported violent extremist behaviours use non-violent extremist individuals in the general population as a control group. However, in order to address the specificity problem, it is crucial to better understand what mobilises individuals from attitudes to action, which necessitates comparing non-violent extremists and violent extremists. Such study designs may allow researchers to differentiate which risk factors explain the move from extremist attitudes to engagement in extremist violence. Therefore, given the inherent multifinality of radicalisation outcomes, more empirical evidence on the differences between non-violent and violent radicalisation outcomes is crucial for advancing the field. Additionally, I argue that research needs to place more focus on those people who will never become radicalised (neither cognitively nor behaviourally). This is in accordance with developmental and life course criminological research which calls for shifting our thinking to why individuals refrain from becoming involved in violent and criminal behaviour in the first place (Ttofi et al., 2016b) and more specifically, why certain individuals abstain from delinquency despite childhood adversities (Farrington & Welsh, 2007; Lösel & Farrington, 2012).

Notably, as mentioned throughout this thesis, I call for a stronger theoretical integration, particularly in regard to frameworks derived from well-established theories applied within life-course and developmental criminology. Yet, while these theoretically integrated frameworks are promising (e.g., Schils & Pauwels, 2016; also see chapter 3 of this thesis), we have to be cautious about what we can be empirically tested in an integrative manner (e.g., Lösel, 2017). Rather than purely focusing on quantitative research in order to identify risk and protective factors as well as to detect underlying causal mechanisms, incorporating qualitative research to ‘bridge the gap’ between quantitative and qualitative approaches may provide vital insights (see Corner et al., 2019).

Additionally, future survey-based research designs in this area may need to consider the relative (dis)advantages attached to different data collection modes. Choosing a specific survey method is one of the most important decisions when planning to conduct a survey study (Gomes, Farrington, Maïam, & Krohn, 2019 for a systematic review). Different criteria such as representativity, target population, response rates, social desirability bias, and the types of questions or more pragmatic factors, for example, the available time frame for the data collection and budget constraints, need to be considered when choosing a specific survey method (Bowling, 2005; Dillman, 2011). For this thesis, the German survey was conducted via phone, the U.K. survey via online pools. One of the most striking advantages of computer-assisted-telephone interviewing (CATI) is the ability to conduct representative population



surveys, while newer survey methods such as online surveys still have issues regarding coverage, and as a result, struggle to achieve representativity of the study (Blasius & Brandt, 2010; Couper, 2011; Liljeberg & Krambeer, 2012). Phone interviews allow for real-time monitoring of interviewers and the ability to spot systematic errors through the use of in-built controls (Lavrakas, 2008). Response rates are one of the main indicators of survey quality. Interviewer-administered surveys offer measures, which affect the response rate in a positive way, such as deliberate interview introduction and interviewer training regarding refusals (Cantor & Cunningham, 2002; Smit & Dijkstra, 1991). Furthermore, during telephone interviews the interviewer may be able to provide clarification of certain questions which is not possible during self-administered surveys (Neumann & Strack, 2000). Additionally, the absence of an interviewer present in online or paper-and-pencil surveys might make it more likely that some respondents speed through the questionnaire in order to finish more quickly, thus providing lower-quality data (Choi, 2004).

Nevertheless, it is worth noting that phone surveys also entail major drawbacks. Despite the relatively low costs of CATI surveys compared to face-to-face interviews, telephone surveys are much more expensive than online surveys (Beck, Yan, & Wang, 2009; Szolnoki & Hoffmann, 2013). Another disadvantage is the long data collection process involved in conducting CATI surveys. While the data collection is quicker compared to face-to-face interviews, online-administered surveys offer a much faster data collection process (Evans & Mathur, 2005). A further challenge of telephone interviews is the above-mentioned social desirability bias. Social interactions inherent in telephone or face-to-face interviews may exert pressures on respondents that affect their answers (Chang & Krosnick, 2009; Kreuter, Presser, & Tourangeau, 2008).

Online surveys only emerged relatively recently, and this may be one reason why quantitative research on (violent) extremism has grown exponentially within the last couple of years. Empirical evidence suggests that self-administered surveys may mediate the extent of many of the biases or effects observed in interviewer-administered pencil-and-paper or telephone surveys (see Tourangeau & Yan, 2007 for a review). This is particularly relevant to extremism and radicalisation research where researchers may be concerned with limiting the extent of known biases. Online surveys have a number of additional advantages. These include a global reach, greater flexibility, speed and timeliness, the benefits of technological advances, convenience, ease of data entry and analysis, question diversity, low administration costs, ease of follow-up, controlled sampling, larger sample sizes (that are easier to obtain), control of answer order, and built in “go to” capabilities (e.g., “if yes go to question 2, if no skip to

question 3”) to limit confusion and survey length (Evans & Mathur, 2005). In a comparison of online, anonymous, self-administered, and interviewer-administered surveys, the most effective mode of delivery was found to be an anonymous, online survey (Robertson, Tran, Lewark, & Epstein, 2018). However, online surveys too have a number of limitations. For example, the skewed attributes of online populations, sample representativeness (or a lack thereof), subjects’ lack of tech savviness, technological variations (desktop vs. tablets vs. mobile devices), unclear instructions, impersonality, privacy and security issues (Evans & Mathur, 2005). Many of these limitations may be addressed by crowdsourcing samples via online panels.

Online access panels may provide extremism researchers with access to large, global samples, who are confident in the anonymity (and so less subject to many biases) where this has not previously been afforded. Online panels are limited, however, in that they may be subject to a selection bias. More specifically, potential respondents are limited to those with internet access, and those who register as panel users. This excludes a fair proportion of the general public and samples may therefore be limited in their representativeness (Duffy, Smith, Terhanian, & Bremer, 2005). However, researchers who have predominantly relied on university student samples find online panels grant access to larger, more diverse samples than have traditionally been made available (Peer, Brandimarte, Samat, & Acquisti, 2017) and therefore there is merit in considering crowdsourcing samples for research on violent extremism.

Finally, similar to criminological research, replication studies on risk and protective factors for violent extremism are essential in order to establish a robust empirical evidence base. While it is an important first step to establish the ‘presence’ of risk and protective factors, we have to work towards understanding the ‘relevance’ of those, such as how much does a given factor increase or reduce the risk, in order to take significant steps forward.

### **7.3 Implications for Practice and Policy**

The findings of this thesis have direct implications for policy and practice. This thesis synthesised empirical evidence on different radicalisation outcomes and collected unique data on various risk and protective factors for violent extremism, which can inform P/CVE programs and may help to refine or develop more evidence-based risk assessment instruments. Yet, we need more studies applying inferential statistical techniques to help build a robust empirical evidence base which can effectively inform the development and evaluation of

radicalisation prevention programs and strategies. From a practical perspective, it is key to incorporate direct promotive as well as buffering protective factors more strongly in the design of intervention programs as well as in structured risk assessment instruments (King, Bender, & Lösel, 2018). Particularly in terms of primary prevention programs, the focus should be placed upon protective factors and on strengthening and building resilience within individuals. Such prevention programs could draw upon comprehensive youth violence prevention programs which include a combination of strategies for risk reduction as well as direct protective factor enhancement (Hall et al., 2012).

As mentioned above, future studies should aim to determine the relative weight of risk and protective factors as not every determinant will be equally impactful in predicting radicalisation outcomes of interest. As such, establishing the relative magnitudes may play a vital role in regard to prioritising some factors over others in order to tackle the most important factors. Such analyses are common practice within violence research and prevention (Lösel & Farrington, 2012) and should be equally applied within violent extremism research and practice, particularly within the P/CVE field. The findings of chapters 2-4 and chapter 6 provided empirical evidence for several replicated dynamic factors beyond extremist attitudes themselves that could potentially be targeted by such programs.

Whilst no single prevention program will be able to address all relevant factors, by designing interventions to target risk factors early on, before they become almost intractable, far better outcomes may be achieved. Overlaps between risk for and protective factors against violence and violent extremism suggest that psychosocial and educational primary prevention programs situated within family, school and neighbourhood contexts, such as those employed within developmental prevention programs against violence and crime (Farrington, Gaffney, Lösel, & Ttofi, 2017; Lösel, 2012), may be effective in preventing radicalisation at an early stage. Yet well-controlled process and outcome evaluations are required to determine the effectiveness of such interventions (Lösel et al., 2018).

In conclusion, this thesis offers a theoretically rich, empirically diverse, and rigorous set of quantitative analyses exploring the risk and protective factors for violent extremist intentions. This thesis provides a deeper understanding of the psychological processes underlying violent extremist propensity development and thereby I hope this can contribute towards ultimately preventing violent extremism.

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## Supplementary materials

### S.2 Systematic Review

#### S.2.1 Systematic Search Method for the Grievance systematic review

##### *Criteria for Considering Studies for this Review & Data Extraction*

In selecting studies for the systematic review, we used the following criteria:

- a) The study must have reported an explicit goal of understanding the determinants of radicalisation or behaviour associated with a terrorist offence.
- b) The study must report at least one measure in a quantitative or qualitative sense. Outcome data can comprise official measures (such as police recorded data) or unofficial measures (such as self-reported experiences). These measures could relate to causal mechanisms activated in the context of radicalisation, substantive information relating to the environmental conditions that impact upon radicalisation, substantive information relating to the offender that impact upon radicalisation.

##### *Identifying Studies: Databases and Information Sources*

Studies were identified using the following search methods:

- 1) A keyword search of relevant electronic databases, including grey literature and dissertation databases (see below).
- 2) Forward and backward citation searches of candidate studies.

We searched three electronic databases (ProQuest Central Criminology Collection, PsychINFO, Pro Quest Central Social Science Database).

The review considered published and unpublished (grey) studies. No date restrictions were applied, and the official sift ended in July 2018. Studies however had to be available in English, French or German since available resources limited our ability to search and translate studies in other languages. The search strategy for the systematic review was based on the Campbell Collaboration method (this method is considered to be the standard-bearer for systematic reviews in the social sciences).

### *Search terms*

In order to discover relevant items for the systematic review, a number of search terms were used in the above search engines and electronic databases (see Table S.3.1). These include terms relevant to radicalisation and causation:

**Table S.2.1.** Search terms utilised.

<b>Radicalisation</b>	<b>Causation</b>
Terrorist	Factor
Insurgent	Mechanism
Rebel	Cause
Radicalisation	Motive
Radicalization	Motivation
Radical	Determinant
Extremist	Propensity
Militant	Trigger
	Antecedent
	Pathway
	Process
	Profile
	Indicator
	Predictor
	Susceptibility
	Root
	Causal
	Explanation
	Risk
	Vulnerability
	Context
	Stressor
	Behaviour
	Behavior
	Influence
	Personality

	Opportunity
	Reward
	Attitude

### *Data extraction and management*

The first level of screening involved examining the title and abstract of those studies returned following our electronic and bibliographic searches. All references were first uploaded to the EPPI 4 reviewer software, a web-based program developed by the Social Science Research Unit at the Institute of Education, UCL, to manage and analyse data generated from systematic reviews.<sup>12</sup> Once uploaded, studies failing to meet inclusion criteria for the synthesis component of our review were excluded (with rates of attrition noted – see Figure S.2.1 below). Excluded studies were flagged as inappropriate in one of several ways. First, many studies were not related to radicalisation, terrorism or political violence. Second, many studies were non-empirical. Third, many studies were not focused upon the individual but rather focused upon group-level dynamics. Fourth, book reviews and other similar documents were omitted.

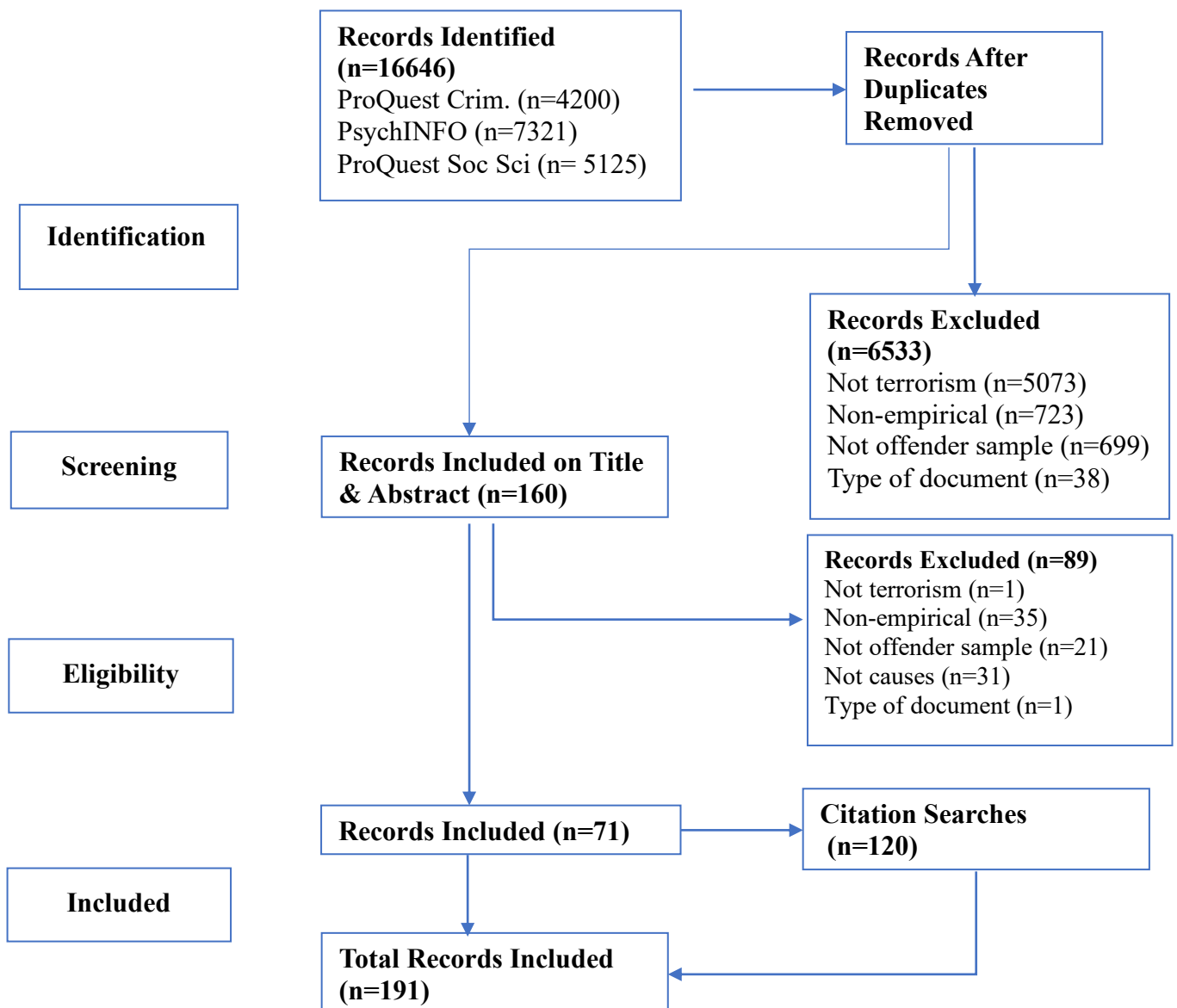
Those studies deemed appropriate for inclusion based on title and abstract were then read in their entirety in order to rigorously judge whether they should be included in the full systematic review. Studies were screened on the same variables as above. As depicted in Figure S.2.1, 6533 studies were brought forward for the systematic review. Backwards and forwards citation searches were performed on each of these studies to pursue further candidate studies. This involved reviewing the titles of each study cited within the initially included study and also the subsequent citations that each candidate study accrued up to and including the end of July 2018. Each appropriate title was then fully read and judged based on the above criteria. For each included study found in the backwards and forwards searches, additional backwards and forwards searches were conducted until all leads were fully checked. This left a total of 191 studies. The next stage involved screening the full text and extracting data from those studies that meet the inclusion criteria for the systematic review.

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<sup>12</sup> See: <http://eppi.ioe.ac.uk/cms/Default.aspx?alias=eppi.ioe.ac.uk/cms/er4>



**Figure S.2.1.** Systematic review search process.



GoogleScholar search terms:

- “protective factor” AND “radicalisation|radicalization”
- “protective factor” AND “extremism|violent extremism”
- “protective factor” AND “terrorism|terrorist”
- “buffering effect|factor” AND “radicalisation|radicalization”
- “buffering effect|factor” AND “extremism|violent extremism”
- “buffering effect|factor” AND “terrorism|terrorist”
- “resilience” AND “radicalisation|radicalization”
- “resilience” AND “extremism|violent extremism”
- “resilience” AND “terrorism|terrorist”

**Table S.2.2.** Risk and protective factors for violent extremist attitudes, intentions and self-reported behaviour.

No. Study	Scale used/ author name and year of scale - author of study and year	Studies	Country/setting and sample type	Sample <i>N</i> Age <i>M</i>	Statistical analysis	Outcome	Risk and/or protective factor	Type of risk or protective factor
1	RIS (2009) – Bartusevičius et al. (2020)	Study (1)	South Africa, nationally representative survey	<i>N</i> = 2170 <i>M</i> <sub>age</sub> = NA	Logistic regression	Intentions	<b>RF</b> – Social dominance orientation ( <i>b</i> = .21***) Domain-specific risk taking ( <i>b</i> = .30***) Status-driven risk taking ( <i>b</i> = .53***) <b>PF</b> – Right-wing authoritarianism ( <i>b</i> = -.43***)	Individual Individual Individual Individual
2	RIS – Becker (2020)	Study (1)	U.S., students	<i>N</i> = 6095 <i>M</i> <sub>age</sub> = NA	Regression analysis	Intentions	<b>RF</b> – Impulsivity ( $\beta$ = .05*) <b>PF</b> – Reflective decision making ( $\beta$ = -.06**) Cognitive reflection test ( $\beta$ = -.08*)	Individual Individual Individual
3	RIS – Cardeli et al. (2020)	Study (1)	U.S. and Canada, Somali refugees	<i>N</i> = 532 <i>M</i> <sub>age</sub> = 22	Regression analysis	Attitudes	<b>RF</b> – Perceived social disconnection ( <i>b</i> = .07*) <b>PF</b> – Social cohesion ( <i>b</i> = .07*)	Society Community
4	RIS – Costabile et al. (2020)	Study (1)	Italy, school students	<i>N</i> = 328 <i>M</i> <sub>age</sub> = 17	SEM	Intentions	<b>RF</b> – Perceived illegitimacy authorities	Individual
5	RIS – De Moreira et al. (2018)	Study (1) Study (2)	Brazil, university students Spain, university students	<i>N</i> = 251 <i>M</i> <sub>age</sub> = 23 <i>N</i> = 201 <i>M</i> <sub>age</sub> = 20	Path analysis	Intentions	<b>RF</b> – Activist identity/ commitment ( $\beta$ = .41) Social identity ( $\beta$ = .21) <b>RF</b> – Activist identity/ commitment ( $\beta$ = .27) Social identity ( $\beta$ = .29)	Group Group
6	RIS - Ellis et al. (2015)	Study (1)	U.S., male Somali immigrants	<i>N</i> = 79 <i>M</i> <sub>age</sub> = 21	Path analysis	Attitudes	<b>RF</b> – PTSD symptoms ( <i>b</i> = .67**)	Individual

7	RIS - Ellis et al. (2019)	Study (1)	U.S. & Canada, Somali male immigrants	$N = 213$ $M_{age} = 22$	SEM	Attitudes	<b>RF</b> – Online social comfort ( $\beta = .23^*$ ) Exposure to violence ( $\beta = .19^*$ ) Somali belongingness ( $\beta = .14^*$ ) <b>PF</b> – Attachment U.S./ Canada ( $\beta = -.20^*$ ) Perceived government justice ( $\beta = -.15^*$ )	Environment Environment Group Group Individual
8	RIS – Fodeman et al. (2020)	Study (1)	U.S., converts and non-converts	$N = 356$ $M_{age} = NA$	Regression analysis	Intentions	<b>RF</b> – Religious conversion ( $\beta = .16^{**}$ )	Individual
9	RIS - Götzsche-Astrup (2019)	Study (1)	U.S., general population	$N = 2317$ $Age_{range} = 18 - 30$	Regression analysis	Intentions	<b>RF</b> – Uncertainty ( $b = 12.0^{***}$ ) Extraversion ( $b = 15.7^{***}$ ) <b>PF</b> – Openness ( $b = -26.0^{***}$ ) Agreeableness ( $b = -19.3^{***}$ ) Conscientiousness ( $b = -15.1^{***}$ )	Individual Individual Individual Individual Individual
10	RIS – Lobato et al. (2018)	Study (1)	Spain, Muslims	$N = 98$ $M_{age} = 28$	Regression analysis	Intentions	<b>RF</b> – Perceived oppression ( $\beta = .29^{**}$ )	Individual
		Study (2)	Spain, Non-Muslims	$N = 167$ $M_{age} = 28$			<b>RF</b> – Perceived oppression ( $\beta = .23^{**}$ )	Individual
11	RIS – Lobato et al. (2020)	Study (1)	Spain, Catalanian minority	$N = 97$ $M_{age} = 33$	Regression analysis	Intentions	<b>RF</b> – Identity fusion ( $\beta = .38^{***}$ ) <i>Perceived oppression</i> ( $\beta = .30^{**}$ )	Group Individual
		Study (2)	Spanish majority	$N = 117$ $M_{age} = 33$			<b>RF</b> – Identity fusion ( $\beta = .16^*$ )	
12	RIS - Mahfud & Adam-Troian (2019)	Study (1)	France, activist adults	$N = 779$ $M_{age} = 32$	Regression analysis	Intentions	<b>RF</b> – Anomia ( $\beta = .18^{***}$ )	Individual
		Study (2)	Undergraduate students	$N = 511$ $M_{age} = 19$	Regression analysis, Experiment	Intentions	<b>RF</b> – Anomia ( $\beta = .22^{**}$ )	

13	RIS – Rottweiler, Gill, & Bouhana (2020)	Study (1)	Germany, nationally representative sample	$N = 1502$ $M_{age} = 55$	SEM	Intentions	<b>RF</b> – Legal cynicism ( $\beta = .13^{***}$ ) <i>Low self-control</i> ( $\beta = .18^{***}$ ) <i>Exposure to extremist peers</i> ( $\beta = .37^{***}$ )	Individual Individual Group
14	RIS – Rottweiler & Gill (2020)	Study (1)	Germany, nationally representative sample	$N = 1502$ $M_{age} = 55$	Regression analysis	Intentions	<b>RF</b> – Conspiracy beliefs ( $\beta = .13^{***}$ ) Legal cynicism ( $\beta = .24^{***}$ ) <b>Self-control</b> ( $\beta = .20^{***}$ )	Individual Individual Individual
15	RIS (2-4) - Troian et al. (2020) - Troian et al. (2019) (1)	Study (1)	France, Maghrebi individuals	$N = 110$ $M_{age} = 30$	Regression analysis	Intentions	(1) <b>RF</b> – Anomia ( $\beta = .27^*$ )	Individual
		Study (2)	Undergraduate students	$N = 249$ $M_{age} = 19$	Regression analysis, Experiment	Intentions	(2) <b>RF</b> – Anomia ( $\beta = .20^{**}$ )	
		Study (3)	Undergraduate students	$N = 279$ $M_{age} = 19$	Regression analysis	Intentions	(3) <b>RF</b> – Anomia ( $\beta = .18^{**}$ )	
		Study (4)	Turkey, students	$N = 321$ $M_{age} = 25$	Regression analysis	Intentions	(4) <b>RF</b> – Anomia ( $\beta = .16^{**}$ )	
16	Amjad & Wood (2009) - Morgades-Bamba et al. (2019)	Study (1)	France, female students	$N = 643$ $M_{age} = 20$	Path analysis	Attitudes	<b>RF</b> – Dogmatism ( $\beta = .26^{***}$ ) Sadism ( $\beta = .15^{***}$ ) Machiavellianism ( $\beta = .13^{**}$ ) Narcissism ( $\beta = .10^{**}$ )	Individual Individual Individual Individual
						Behaviour	<b>RF</b> – Extremist attitudes ( $\beta = .39^{***}$ ) Dogmatism ( $\beta = .13^{***}$ ) Narcissism ( $\beta = .12^{**}$ )	Individual
17	Baier et al. (2009) - Baier et al. (2016)	Study (1)	Germany, school students, 9 <sup>th</sup> graders	$N = 4697$ $M_{age} = NA$	(1) Multilevel regression	Attitudes	<b>RF</b> – Police procedural injustice ( $\beta = .15^{***}$ ) Risk-taking ( $\beta = .12^{***}$ ) Exposure to parental violence ( $\beta = .04^{**}$ ) <b>PF</b> – Adherence to law ( $\beta = -.33^{***}$ ) School bonds ( $\beta = -.07^{***}$ ) School achievement ( $\beta = -.06^{***}$ )	Individual Individual Family Individual School School

							Relative deprivation ( $\beta = -.04^{**}$ )	Individual
		Study (2)		$N = 4588$ $M_{age} = NA$	(2) Binary logistic multilevel regression	Behaviour	<b>RF</b> – Police procedural injustice ( $OR = 1.46^{**}$ ) Risk-taking ( $OR = 1.86^{***}$ ) <b>PF</b> – School achievement ( $OR = .67^*$ ) Adherence to law ( $OR = .42^{***}$ )	
18	Baier et al. (2009)	Study (1)	Germany, school students	$N = 18631$ $M_{age} = NA$	Binary logistic multilevel regression	Attitudes	<b>RF</b> – Delinquent friends ( $OR = 1.94^{***}$ ) Thrill-seeking ( $OR = 1.63^{***}$ ) Severe parental violence ( $OR = 1.48^{***}$ ) Exposure violent media ( $OR = 1.35^{***}$ ) Poor academic performance ( $OR = 1.28^{***}$ )	Group Individual Family Environment School
19	Political Violence Scale (2019) - Bélanger et al. (2019)	Study (1)	Canada, adults	$N = 470$ $M_{age} = 33$	(1-3) SEM	Attitudes	(1) <b>RF</b> – Social alienation ( $\beta = .53^{***}$ ) Self-sacrifice ( $\beta = .20^{***}$ ) Collective narcissism ( $\beta = .17^{***}$ ) (2) <b>RF</b> – Social alienation ( $\beta = .53^{***}$ )	Society Individual Group
		Study (2)	Pakistan, students	$N = 422$ $M_{age} = 21$				
		Study (3)	Spain, adults	$N = 233$ $M_{age} = 33$			(3) <b>RF</b> – Social alienation ( $\beta = .17^{***}$ ) Self-sacrifice ( $\beta = .09^{**}$ )	
		Study (4)	U.S., adults	$N = 319$ $M_{age} = 40$	(4) SEM, Experiment		(4) <b>RF</b> – Dehumanisation ( $\beta = .46^{***}$ ) Moral justification for violence ( $\beta = .08^*$ )	Individual Individual
20	Political violence scale (Bélanger et al., 2019) - Bélanger et al. (2020)	Study (1)	Spain, adults	$N = 331$ $M_{age} = 25$	Path analysis (1) Cross-sectional	Attitudes	(1) <b>RF</b> – Radical network ( $b = .25^{***}$ ) <b>PF</b> – Moderate network ( $b = -.27^{***}$ )	Group Group
		Study (2)	U.S., adults	$N = 381$ $M_{age} = 36$	(2) Experiment		(2) <b>RF</b> – Radical network ( $b = .16^{***}$ ) <b>PF</b> – Moderate network ( $b = -.27^{***}$ )	
21	Support for political violence scale (Bélanger et al.,	Study (1)	Spain, adults (1-4)	$N = 460$ $M_{age} 31$	Path analysis (1) Cross-sectional	Attitudes	(1) <b>RF</b> – Self-sacrifice ( $\beta = .16^{***}$ ) <i>Sensation-seeking</i> ( $\beta = .12^{***}$ )	Individual Individual

	2017) - Schumpe et al. (2020)	Study (2)		$N = 371$ $M_{ageT1} 28$ $M_{ageT2} 28$	(2) Longitudinal		(2) <b>RF</b> – Sensation-seeking ( $\beta = .12^{***}$ )	
		Study (3)		$N = 121$ $M_{age} 32$	(3) Experiment		(3) <b>RF</b> – Sensation-seeking ( $\beta = .37^{***}$ )	
		Study (4)		$N = 305$ $M_{age} 35$	(4) Experiment		(4) <b>RF</b> – Sensation-seeking ( $\beta = .37^{***}$ )	
22	Besta et al. (2015)	Study (1)	Poland, students and football hooligans	$N = 179$ $M_{age} = 20$	Regression analysis	Attitudes	<b>RF</b> – RW authoritarianism ( $\beta = .29^{***}$ ) LW authoritarianism ( $\beta = .20^{**}$ ) Social dominance orientation ( $\beta = .16^*$ )	Individual Individual Individual
23	Boehnke et al. (1998)	Study (1)	Germany, adolescent students	$N = 570$ $M_{age} = NA$	SEM	Attitudes	<b>RF</b> – Delinquent drift ( $\beta = .14^{**}$ )  Anomic aspirations ( $\beta = .19^{**}$ ) PF – school achievement ( $\beta = -.19^{**}$ )	Individual  Individual School
24	Doosje et al. (2012)	Study (1)	Netherlands, native Dutch adolescents	$N = 1086$ $M_{age} = 17$	SEM	Attitudes	<b>RF</b> – (all estimates are significant) Ingroup superiority ( $b = .40$ ) Realistic threat perceptions ( $b = .15$ )	Group Group
						Intentions	<b>RF</b> – (all estimates are significant) Attitudes RW-motivated violence ( $b = .33$ ) Ingroup superiority ( $b = .18$ ) Individual relative deprivation ( $b = .14$ ) Perceived illegitimacy authorities ( $b = .14$ )	Individual  Individual Individual
25	Doosje et al. (2012; 2013) – Doosje et al. (2013)	Study (1)	Netherlands, Muslim Youth	$N = 131$ $M_{age} = 17$	SEM	Attitudes	<b>RF</b> – Perceived illegitimacy authorities ( $b = .18^{***}$ ) Perceived ingroup superiority ( $b = .36^{***}$ ) Perceived distance to other people ( $b = .28^{***}$ ) Societal disconnected ( $b = .15^{***}$ )	Individual  Group Society Society
						Intentions	<b>RF</b> –Attitudes towards Muslim violence ( $b = .35^{***}$ )	Individual

							Perceived distance to other people ( $b = .25^{***}$ )	
26	Doosje et al. (2012; 2013) – van Bergen et al. (2015)	Study (1)	Netherlands, students of Turkish and Moroccan descent	$N = 398$ $M_{age} = 16$	SEM	Attitudes	<b>RF</b> – Ingroup superiority ( $\beta = .27^{***}$ ) Collective relative deprivation ( $\beta = .14^{***}$ ) <b>PF</b> – Basic attachment to society ( $\beta = -.04^{**}$ )	Group Group Society
						Intentions	<b>RF</b> – Attitudes towards Muslim violence ( $\beta = .36^{***}$ ) Ingroup superiority ( $\beta = .20^{***}$ ) Collective relative deprivation ( $\beta = .14^{***}$ ) <b>PF</b> – Basic attachment to society ( $\beta = -.17^{**}$ )	Individual
27	Doosje et al. (2012; 2013) – van Bergen et al. (2016)	Study (1)	Netherlands, students of Turkish descent	$N = 133$ $M_{age} = 16$	SEM	Attitudes	<b>RF</b> – Ingroup superiority ( $\beta = .27^*$ ) Attitudes towards Muslim violence ( $\beta = .37^{***}$ ) <b>PF</b> – Basic attachment to society ( $\beta = -.17^{**}$ )	Group Individual Society
						Intentions	<b>RF</b> – Ingroup superiority ( $\beta = .22^{***}$ ) Ingroup connectedness ( $\beta = .21^{***}$ ) <b>PF</b> – Egalitarian parenting style ( $\beta = -.11^{***}$ )	Group Family
28	Doosje et al. (2013) – Feddes et al. (2015)	Study (1)	Netherlands, Muslim youth with migration background	$N = 46$ $M_{age} = 17$	Regression analysis, Longitudinal	Attitudes	<b>RF</b> – Narcissism ( $\beta = .42^*$ ) <b>PF</b> – Empathy ( $\beta = -.41^*$ )	Individual Individual
						Intentions		
29	Obaidi et al. (2018) (1) - Obaidi et al. (2018a)	Study (1)	Denmark, Muslims Native-/ foreign-born	$N = 491$ $M_{age} = NA$	Path analysis	Intentions	<b>RF</b> – Group-based anger ( $\beta = .28^* / .43^*$ )	Group
		Study (2)	Afghan Danes with no experience/ direct	$N = 243$ $M_{age} = NA$			<b>RF</b> – Group-based anger ( $\beta = .41^* / .44^*$ ) Muslim identification ( $\beta = .44^* / .45^*$ )	Group



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30	Obaidi et al. (2018) (1-3) - Obaidi et al. (2018b)	Study (1)	U.S., Non-Muslim	$N = 205$ $M_{age} = 35$	Regression analysis	Intentions (2)	(1) <b>RF</b> – Realistic threat ( $\beta = .46^{***}$ ) Symbolic threat ( $\beta = .29^{***}$ )	Group Group
		Study (2)	Sweden, Muslims	$N = 151$ $Age_{range} = 18-34$		Attitudes (3)	(2) <b>RF</b> – Symbolic threat ( $\beta = .34^{***}$ )	
		Study (3)	Turkey, Muslims	$N = 247$ $Age_{range} = 18-34$		Intentions (1)	(3) <b>RF</b> – Symbolic threat ( $\beta = .33^{***}$ )	
		Study (4)	Denmark, Muslims; Denmark non-Muslims; Afghanistan, Muslims	$N = 142$ $M_{age} = 27$ $N = 112$ $M_{age} = 29$ $N = 155$ $M_{age} = 23$		Intentions (1)	(4) <b>RF</b> – Realistic threat ( $\beta = .32^{***}$ ) Symbolic threat ( $\beta = .49^{***}$ ) <b>RF</b> – Realistic threat ( $\beta = .21^{***}$ ) Symbolic threat ( $\beta = .47^{***}$ ) <b>RF</b> – Realistic threat ( $\beta = .30^{***}$ ) Symbolic threat ( $\beta = .41^{***}$ )	
31	Obaidi et al. (2018) (1) - Obaidi et al. (2020)	Study (1)	Denmark, Muslims	$N = 222$ $M_{age} = NA$	Regression analysis	Intentions (1)	(1) <b>PF</b> – Emotionality ( $\beta = -.20^*$ ) Openness to experience ( $\beta = -.18^*$ )	Individual Individual
		Study (2)	Afghanistan, Non-Mujahedeen	$N = 127$ $M_{age} = 28$		Intentions (2)	(2) <b>PF</b> – Emotionality ( $\beta = -.30^{**}$ ) Openness to experience ( $\beta = -.38^{**}$ )	
		Study (3)	Afghanistan, former Mujahedeen	$N = 58$ $M_{age} = 56$		Intentions (3)	(3) <b>PF</b> – Emotionality ( $\beta = -.39^{**}$ ) Openness to experience ( $\beta = -.32^{**}$ )	
		Study (4)	Belgium, Muslims	$N = 104$ $M_{age} = 30$		Intentions (4)	(4) <b>PF</b> – Emotionality ( $\beta = -.20^*$ ) Openness to experience ( $\beta = -.39^{**}$ )	
		Study (5)	Sweden, Muslims	$N = 202$ $M_{age} = 23$		Intentions (5)	(5) <b>PF</b> – Emotionality ( $\beta = -.21^{**}$ ) Openness to experience ( $\beta = -.25^{**}$ )	
32	Obaidi et al. (2018a) (1) - Obaidi (2019)	Study (1a)	Pakistan, Muslims private university students	$N = 425$ $M_{age} = 24$  $N = 402$	Path analysis	Intentions (1)	(1) <b>RF</b> – Group-based anger ( $\beta = .42^{***}$ ) Muslim identification ( $\beta = .14^{**}$ )  (1b) <b>RF</b> – Group-based anger ( $\beta = .24^{**}$ )	Group Group

		Study (1b)	Pakistan, public universities	$M_{age} = 21$ $N = 366$			Perceived injustice ( $\beta = .40^{***}$ )	Group
		Study (1c)	Muslims living in Western countries	$M_{age} = 25$ $N = 127$			(1c) <b>RF</b> – Group-based anger ( $\beta = .30^{***}$ ) Perceived injustice ( $\beta = .26^{***}$ )	
		Study (2)	Afghanistan (Kabul), Muslims	$M_{age} = 28$			(2) <b>RF</b> – Group-based anger ( $\beta = .52^{***}$ ) Perceived injustice ( $\beta = .22^{***}$ )	
33	Pauwels & De Waele (2014)	Study (1)	Belgium, Flemish adolescents	$N = 2879$ $Age_{range} = 18-22$	Blockwise binominal logistic regression	Behaviour	<b>RF</b> – Impulsiveness ( $OR = 1.70^{***}$ ) Perceived group injustice ( $OR = 1.45^{**}$ ) Social vulnerability ( $OR = 1.36^{**}$ ) Support for RW extremism ( $OR = 1.31^{**}$ ) RWA ( $OR = 1.29^*$ ) Peer delinquency ( $OR = 1.25^{**}$ ) <b>PF</b> – Police legitimacy ( $OR = .78^*$ )	Individual Group Society Individual Individual Group Individual
34	Doosje (2012) (1) Pauwels & De Waele (2014) – Schils and Pauwels (2016)	Study (1)	Belgium, adolescents and young adults	$N = 6020$ $M_{age} = 20$	SEM (log-linear)	Attitudes	<b>RF</b> – Perceived alienation ( $log odds = .19$ ) Religious authoritarianism ( $log odds = .28$ ) Perceived injustice ( $log odds = .34$ ) <b>PF</b> – Social integration ( $log odds = -.14$ )	Individual Individual Individual Environment
						Behaviour	<b>RF</b> – Low self-control ( $log odds = .35$ ) Active exposure extremist settings ( $log odds = .25$ ) Violent extremist attitudes ( $log odds = .19$ ) Low police legitimacy ( $log odds = .14$ )	Individual Environment Individual Individual
35	Doosje (2012) (1) & Pauwels & De Waele (2014) – Pauwels and Heylen (2017)	Study (1)	Belgium, adolescents and young adults	$N = 723$ $Age_{range} = 18-25$	SEM	Attitudes	<b>RF</b> – Ethnocentrism ( $\beta = .26^{***}$ ) Thrill-seeking ( $\beta = .18^{***}$ ) Personal superiority ( $\beta = .15^{***}$ ) Exposure racist peers ( $\beta = .12^{**}$ )	Group Individual Individual Group
						Behaviour	<b>RF</b> – Violent extremist beliefs ( $\beta = .21^{***}$ )	Individual

36	Pauwels & De Waele (2014) – Pauwels & Svensson (2017)	Study (1)	Belgium, adolescents and young adults (1-3)	$N = 4337$ $Age_{range} = 16-24$ (1-3)	Generalised linear regression analysis	Behaviour	(1) <b>RF</b> – Nationalist extremist beliefs ( $\beta = .21^{***}$ ) <b>PF</b> – Self-control ( $\beta = -.33^{***}$ )	Individual Individual
		Study (2)				(2) <b>RF</b> – Left-wing extremist beliefs ( $\beta = .31^{***}$ ) <b>PF</b> – Self-control ( $\beta = -.33^{***}$ )	Individual	
		Study (3)				(3) <b>RF</b> – Religious extremist beliefs ( $\beta = .24^{***}$ ) <b>PF</b> – Self-control ( $\beta = -.32^{***}$ )	Individual	
37	Pauwels & Svensson (2017) - Pauwels and Hardyns (2018)	Study (1)	Belgium, students	$N = 6020$ $M_{age} = 20$	Generalised linear regression analysis	Attitudes	<b>RF</b> – Violent extremist attitudes ( $\beta = .67^{***}$ ) Thrill-seeking ( $\beta = .54^{***}$ )	Individual Individual
						NSE		
						RELEX		
						LWE	Violent extremist attitudes ( $\beta = .54^{***}$ )	
38	Fuchs (2003) - Right-wing extremism scale (1) & Affinity to violence scale (2)	Study (1)	Germany, students	$N = 4667$ $Age_{range} = 14-21$	Path analysis	Attitudes (1)	<b>RF</b> – Authoritarianism ( $\beta = .43^{***}$ ) Low law-related morality ( $\beta = .17^{***}$ ) Low sense of self-worth ( $\beta = .15^{***}$ ) Low significance ( $\beta = .15^{***}$ ) Anomia ( $\beta = .11^{***}$ ) <b>PF</b> – Intergroup contact ( $\beta = -.24^{***}$ ) subjective deprivation ( $\beta = -.08^{**}$ )	Individual Individual Individual Individual Group Individual
		Study (2)	Germany, students			Attitudes (1) & Behaviour (2)	<b>RF</b> – Low law-related morality ( $\beta = .43^{***}$ ) Authoritarianism ( $\beta = .25^{***}$ ) Sense of self-worth ( $\beta = .16^{***}$ ) Low significance ( $\beta = .13^{***}$ ) <b>PF</b> – Subjective deprivation ( $\beta = -.05^{***}$ )	

							Intergroup contact ( $\beta = -.04^{**}$ )	
39	Hirsch-Hoefler et al. (2016)	Study (1)	Israel, Jewish settlers	$N = 517$ $M_{age} = 38$	Regression analysis	Behaviour	<b>RF</b> – Extremist organisational membership ( $b = .84^{***}$ )	Group
40	Jásko et al. (2020) – (1) Violent extremism scale with support for Tamil group	Study (1)	Sri Lanka, Community members (1) Liberation Tigers of Tamil Eelam members (2)	$N_1 = 157$ $N_2 = 178$ $M_{age} = 30$	Regression analysis	Attitudes	(1) <b>RF</b> – Extremist attitudes ( $\beta = .27^{***}$ (1); $\beta = .39^{***}$ (2)) Individual quest for significance ( $\beta = .34^{***}$ (1); $\beta = .36^{***}$ (2)) <b>PF</b> – Collective quest for significance ( $\beta = -.28^{**}$ (1))	Individual Individual Group
	(2) Violent extremism scale with support for Islam	Study (2)	Morocco, Muslims Casablanca (1) Tetouan (2)	$N_1 = 130$ $N_2 = 130$ $M_{age} = NA$			(2) <b>RF</b> – Extremist attitudes ( $\beta = .29^{***}$ (1); $\beta = .71^{***}$ (2)) Individual quest for significance ( $\beta = .12^*$ (1)) Collective quest for significance ( $\beta = .13^*$ (1); $.26^{***}$ (2))	
	(3) Support of Islamist violent extremism	Study (3)	Indonesia, members of moderate (1), Islamist (2) and Jihadist (3) organisations	$N = 379$ $M_{age} = 31$			(3) <b>RF</b> – Extremist attitudes ( $\beta = .61^{***}$ (1); $\beta = .67^{***}$ (2); $\beta = .61^{***}$ (3)) Collective quest for significance ( $\beta = .10^*$ (1); $\beta = .12^*$ (2); $\beta = .37^{***}$ (3)) <b>PF</b> - Individual quest for significance ( $\beta = -.12^*$ (3))	
41	MEMS (2010) – Trip et al. (2019)	Study (1)	Romania, adolescents	$N = 1188$ $M_{age} = NA$	SEM	Attitudes	<b>PF</b> – Personality (combined measure - high intelligence/ imagination, high extraversion and low agreeability) ( $\beta = -.24^{***}$ )	Individual

42	MEMS (2010) - Gøtzsche-Astrup (2020)	Study (1)	Denmark, adults	$N = 1188$ $M_{\text{age}} = \text{NA}$	Regression analysis (1) Experimental	Intentions	<b>RF</b> – Neuroticism ( $\beta = .12^{***}$ ) Extraversion ( $\beta = .08^{**}$ ) <b>PF</b> – Openness ( $\beta = -.07^*$ ) Agreeableness ( $\beta = -.13^{***}$ ) Conscientiousness ( $\beta = -.07^*$ )	Individual Individual Individual Individual
		Study (2)	US, adults	$N = 1300$ $M_{\text{age}} = \text{NA}$	Regression analysis (2) Experimental	Intentions	<b>RF</b> – Neuroticism ( $\beta = .13^{***}$ ) Extraversion ( $\beta = .18^{***}$ ) <b>PF</b> – Agreeableness ( $\beta = -.13^{***}$ ) Conscientiousness ( $\beta = -.18^{***}$ )	
43	MEMS (2010) – Stankov et al. (2020)	Study (1)	Serbia Dominant ethnic group (Serbs) & minorities (Bosniaks & Albanians)	$N = 600$ $M_{\text{age}} = 24$ $\text{Age}_{\text{range}} = 18-29$	SEM	Attitudes	<b>RF</b> – Frequency intergroup contact ( $b = .16^{***}$ ) <b>PF</b> – Positive outgroup contact ( $b = -.48^{***}$ )	Group Group
44	Muluk et al. (2013) – (1) Belief in violent jihad & (2) Sacred violence scale	Study (1)	Indonesia, Muslims	$N = 934$ $M_{\text{age}} = 40$	Path analysis	Attitudes (1)	<b>RF</b> – Support for Islamic law ( $\beta = .48$ ) Fundamentalism ( $\beta = .35$ ) <b>PF</b> – Intensive religious practise ( $\beta = -.14$ )	Individual Individual Individual
						Intentions (2)	<b>RF</b> – Belief in violent jihad ( $\beta = .39$ )	Individual
45	Pedahur et al. (2000) – Zaidise et al. (2007)	Study (1)	Israel, Muslims and Jews	$N = 1002$ $M_{\text{age}} = \text{NA}$	SEM	Attitudes	<b>RF</b> – Objective deprivation ( $b = .93^{***}$ ) Subjective deprivation ( $b = .13^*$ ) <b>PF</b> – Religiosity ( $b = -.25^{**}$ )	Individual Individual Individual
46	Pedersen et al. (2018)	Study (1)	Norway, adolescents	$N = 7398$ $M_{\text{age}} = 17$	Multilevel logistic regression analysis	Attitudes	<b>RF</b> – Conduct problems (rule-breaking, criminal and violent behaviour) ( $b = .55^{***}$ ) Exposure to violence ( $b = .47^{**}$ ) Political opinion expressed online ( $b = .32^{***}$ ) War between Islam & West ( $b = .62^*$ )	Individual Environment Environment

							PF – School performance ( $b = -.19^{**}$ )	Group School
47	PIARES (2018) – Ozer & Bertelsen (2019)	Study (1)	Denmark & U.S., students	$N = 686$ $M_{age} = 18$	Regression analysis	Attitudes	RF - Insecure life attachment ( $b = .25^{**}$ ) Deficient life skills ( $b = .27^{**}$ )	Society Individual
48	PIARES (2018) – Ozer (2020)	Study (1)	Denmark & India, students	$N = 477$ $Age_{range} = 18-29$	SEM	Attitudes	RF – Insecure life attachment ( $b = .53^{***}$ ) Ethnic protection ( $b = .19^{**}$ ) PF - Multicultural acquisition ( $b = -.17^{**}$ )	Society Group Group
49	PIARES (2018) – Ozer & Bertelsen (2020a)	Study (1) Study (2)	Denmark, students U.S., students	$N = 364$ $M_{age} = 18$ $N = 322$ $M_{age} = 19$	SEM	Attitudes	RF – Moral disengagement ( $b = .56^{**}$ ) RF – Moral disengagement ( $b = .70^{**}$ )	Individual Individual
50	PIARES (2018) – Ozer et al. (2020b)	Study (1) Study (2)	Denmark, students India, students	$N = 223$ $M_{age} = 23$ $N = 147$ $M_{age} = 26$	Regression analysis	Attitudes	(1) RF – Insecure life attachment ( $b = 0.51$ , 95% CI [0.40, 0.61]) Social identity ( $b = 0.09$ , 95% CI [0.02, 0.16]) (2) RF – Insecure life attachment ( $b = 0.36$ , CI [0.26, 0.42]) Social identity ( $b = 0.19$ , 95% CI [0.00, 0.38])	Individual Group Group Group
51	Rip et al. (2012) – Religious extremism scale (2)	Study (1)	Canada, Muslims	$N = 111$ $M_{age} = 35$	Regression analysis	Attitudes	RF – Outgroup hatred ( $\beta = .30^{**}$ ) PF – Peaceful religious activism ( $\beta = -.22^*$ )	Group Individual
52	Setiawan et al. (2019) - Setiawan et al. (2017)	Study (1)	Indonesia, Muslims and Christians	$N = 2026$ $M_{age} = NA$	SEM	Attitudes	RF – Religiocentrism ( $\beta = .33^{***}$ ) Rites of passage ( $\beta = .06^{**}$ ) Devotional practice (e.g., praying privately) ( $\beta = .06^*$ ) PF – Trans-situational importance of religious values (Religious salience) ( $\beta = -.13^{***}$ ) Fundamentalism ( $\beta = -.08^*$ )	Individual Individual Individual Individual Individual

53	Setiawan et al. (2019) - Setiawan et al. (2020)	Study (1) Study (2)	Indonesia, Muslims Indonesia, Christians	$N = 1432$ $M_{age} = NA$ $N = 563$ $M_{age} = NA$	SEM	Attitudes	<b>RF</b> – Perceived injustice ( $b = .20, p < .05$ ) Collective efficacy ( $b = .28, p < .05$ ) <b>RF</b> – Collective efficacy ( $b = .15, p < .05$ )	Individual Group
54	SVIC (2016) – Gerber et al. (2018)	Study (1) Study (2)	Chile, Mapuche minority Mapuche minority	$N = 198$ $M_{age} = 39$ $N = 76$ $M_{age} = 36$	Path analysis	Attitudes	<b>PF</b> – Perceived police legitimacy ( $\beta = -.33^{**}$ ) <b>PF</b> – Perceived police legitimacy ( $\beta = -.26^*$ )	Individual
55	SyfoR (2014) – Bhui et al. (2014)	Study (1)	U.K. Pakistani and Bangladeshi Muslims	$N = 608$ $Age_{range} = 18-45$	Multinomial logistic regression	Attitudes	<b>RF</b> – Depression ( $RR = 5.43^{**}$ ) Importance religion ( $RR = .08^{**}$ ) <b>PF</b> – More social contact/ social networks ( $RR = 1.52^{***}$ ) Less social capital ( $RR = .63^{**}$ )	Individual Individual Group Group
56	SyfoR (2014) – Bhui et al. (2016)	Study (1)	U.K. Pakistani and Bangladeshi Muslims	$N = 608$ $Age_{range} = 18-45$	Logistic regression	Attitudes	<b>PF</b> – Death of a close person ( $OR = .29^*$ ) Normative political action ( $OR = .46^{**}$ ) Donating money to charity ( $OR = .52^*$ ) Voluntary work ( $OR = .31^{**}$ )	Individual Individual Individual Individual
57	SyfoR (2014) – Bhui et al. (2019)	Study (1)	U.K., White British and Pakistani people	$N = 608$ $Age_{range} = 18-45$	Logistic regression	Attitudes	<b>RF</b> – Symptoms of anxiety ( $RR = 1.09^{**}$ ) Post-traumatic stress disorder ( $RR = 1.03^{**}$ ) Criminal conviction ( $RR = 2.23^*$ )	Individual Individual Individual
58	SVR (2018) – Rousseau et al. (2019)	Study (1)	Canada, college students	$N = 1190$ $Age_{range} = 16-25$	Regression analysis	Attitudes	<b>RF</b> – Depression ( $b = .53^{***}$ ) <i>Experience of violence</i> ( $b = 1.91^{***}$ )	Individual Environment
59	SVR (2018) – Miconi et al. (2019)	Study (1)	Canada, college students	$N = 1680$ $Age_{range} = 16-25$	Linear mixed-effects	Attitudes	<b>RF</b> – Exposure to violence ( $\beta = .17, CI [.07, .26]$ ) <i>Severe depression</i> ( $\beta = .19, CI [.04, .34]$ ) <b>PF</b> – Positive future orientation ( $\beta = -.08, CI [-.13, -.04]$ )	Environment Individual Individual

							<i>Religiosity</i> ( $\beta = -.22$ , CI [-.32, -.12])	Individual
60	SVR (2018) – Rousseau et al. (2020)	Study (1) Study (2)	Canada, students	(1) $N_{T1} = 854$ $M_{ageT1} = NA$ (2) $N_{T2} = 702$ $M_{ageT2} = NA$	Repeated cross-sectional linear mixed-effects models	Attitudes	<i>RF</i> – Depression and anxiety ( $\beta = .12^{**}$ ) Importance of identity ( $\beta = .09^{**}$ )	Individual Group
61	Tausch et al. (2011)	Study (1) Study (2) Study (3)	Germany, students India, Muslim students U.K. Muslims	(1) $N = 332$ $M_{age} = 23$ (2) $N = 169$ $M_{age} = 22$ (3) $N = 466$ $M_{age} = 27$	Regression analysis	Intentions Attitudes Attitudes	(1) <b>RF</b> – Contempt outgroup ( $\beta = .19^*$ ) <b>PF</b> – Group efficacy ( $\beta = -.14^*$ ) (2) <b>RF</b> – Contempt outgroup ( $\beta = .29^*$ ) Relative group deprivation ( $\beta = .17^*$ ) (3) <b>RF</b> – Contempt outgroup ( $\beta = .13^*$ )	Group Group Group
62	Tausch et al. (2011) – Issa (2019)	Study (1)	Lebanon, Algeria, Tunisia	$N = 174$ $M_{age} = 25$	Regression analysis	Attitudes	<b>RF</b> – Collective narcissism ( $\beta = .26^{***}$ )	Group
63	Tausch et al. (2011) (adapted) – Selvanathan & Leidner (2020)	Study (1) Study (2) Study (3)	Arab Israelis Jewish Israelis Jewish Israelis	$N = 165$ $M_{age} = 31$ $N = 291$ $M_{age} = 38$ $N = 546$ $M_{age} = 44$	Path analysis (1) - (3) Experiment (1) Restorative group	Attitudes	(1) <b>RF</b> – Retributive justice ( $b = .25^{**}$ ) Ingroup superiority ( $b = .24^{**}$ ) <b>PF</b> – Restorative justice ( $b = -.32^{***}$ ) (2) <b>RF</b> – Retributive justice ( $b = .42^{***}$ ) <b>PF</b> – Restorative justice ( $b = -.12^*$ ) (3) <b>RF</b> – Ingroup superiority ( $b = .61^{***}$ ) <b>PF</b> – Ingroup attachment ( $b = -.25^{**}$ )	Individual Group Individual Group



					(2) Retributive group		<b>RF</b> – Ingroup superiority ( $b = .58^{***}$ )	
					(3) Control		<b>RF</b> – Ingroup superiority ( $b = .65^{***}$ )	
64	Tausch et al. (2011) – Travaglino & Moon (2020)	Study (1) Study (2)	South Korea, adults U.S., adults	$N = 601$ $M_{age} = 39$ $N = 613$ $M_{age} = 33$	SEM	Intentions	<b>RF</b> – Contempt towards political system ( $\beta = .30^{***}$ ) Power Distance ( $\beta = .26^{***}$ ) <b>RF</b> – Contempt towards political system ( $\beta = .28^{***}$ ) Power Distance ( $\beta = .31^{***}$ )	Individual Individual
65	Webber et al. (2018) – Islamic extremism scale	Study (1) Study (2)	Philippines, extremists imprisoned Sri Lanka, former extremists	$N = 65$ $M_{age} = 34$ $N = 237$ $M_{age} = 33$	Regression analysis	Attitudes	<b>RF</b> – Need for closure ( $\beta = .36^{***}$ )  <b>RF</b> – Loss of significance ( $\beta = .27^{***}$ ) Need for closure ( $\beta = .06^*$ )	Individual Individual
66	Storm et al. (2020)	Study (1)	Norway, adolescents and young adults	$N = 2415$ $M_{age} = NA$	Regression analysis	Attitudes	<b>RF</b> – Experienced harassment or violence ( $\beta = .11^*$ ) War between Islam & West ( $\beta = .04^*$ ) Family financial issues ( $\beta = .07^*$ )	Environment Group Family
67	Yustisia et al. (2020)	Study (1)	Indonesia, terrorism detainees	$N = 66$ $M_{age} = 35$	Path analysis	Attitudes	<b>RF</b> – Social identity ( $b = .41^{**}$ ) Perceived injustice ( $b = .41^{**}$ )	Group Individual
68	z-Proso – Nivette et al. (2017)	Study (1)	Switzerland, adolescents	$N = 1214$ $M_{age} = 17$	Regression analysis	Attitudes	<b>RF</b> – Personal strain ( $\beta = .13^{***}$ ) Collective strain ( $\beta = .12^{***}$ ) Moral neutralisation ( $\beta = .36^{***}$ ) Legal cynicism ( $\beta = .09^{***}$ ) <b>PF</b> – Coping skills ( $\beta = -.09^{**}$ )	Individual Group Individual Individual Individual

69	RIS (1) z-proso (2) Doosje et al. (2012) (3) - Jahnke et al. (2020)	Study (1)	Germany, politically active individuals	$N = 303$ $M_{\text{age}} = 24$	Hierarchical regression	Intentions (1)	<b>RF</b> – Observer justice sensitivity ( $\beta = .37^{***}$ ) <b>PF</b> – Victim justice sensitivity ( $\beta = -.13^*$ )	Individual Individual
		Study (2)	Germany, School students	$N = 6715$ $M_{\text{range}} = 14-15$		Attitudes (2)	<b>RF</b> – Victim justice sensitivity ( $\beta = .16^{***}$ ) <b>PF</b> – Observer justice sensitivity ( $\beta = -.12^{***}$ )	
		Study (3)	Germany, School students, without migration background	$N = 3715$ $M_{\text{range}} = 14-15$		Attitudes (3)	<b>RF</b> – Victim justice sensitivity ( $\beta = .14^{***}$ ) <b>PF</b> – Observer justice sensitivity ( $\beta = -.20^{***}$ )	
70	Zick et al. (2019) – Right- wing extremist attitudes scale	Study (1)	Germany, Nationally representative sample	$N = 1890$ $M_{\text{age}} = 51$	Regression analysis	Attitudes	<b>RF</b> – Relative deprivation ( $\beta = .12^{***}$ ) Fears about globalisation ( $\beta = .08^{**}$ ) National identity ( $\beta = .11^{***}$ ) Intergroup contact ( $\beta = .06^*$ ) Political alienation ( $\beta = .24^{***}$ ) Social Darwinism ( $\beta = .14^{***}$ ) Anomia ( $\beta = .35^{***}$ ) <b>PF</b> – Perceived personal justice ( $\beta = -.12^{***}$ )	Individual Society Group Group Individual Individual Individual Individual

*Note.* Environment: these types of risk or protective factors relate to environmental exposure, such as factors related to family, peers or other environments. SEM (structural equation modeling); RW (right-wing); LW (left-wing); NSE (endorsement for nationalist-separatist extremism), RELEX (endorsement for religious extremism), LWE (endorsement for left-wing extremism); RWA (right-wing authoritarianism).

**Table S.2.3.** Psychometric tools developed to identify individuals who hold violent extremist attitudes and intentions and who have engaged in extremist behaviour (self-reported).

Scale No.	Acronyms/ abbreviations or author and year	Scale title	Measure of outcome	Type of ideology	Scale description – number of items, description of scale items, answer categories	Author(s)	Construct validity	Author(s) Background	Journal of publication/ research institute
1	RIS (2009)	Radicalism Intention Scale	Willingness to engage in violent extremism <sup>i</sup>	Mixed	6 (intentions to engage in radicalism); 4-point Likert scale	Moskalenko, S. & McCauley, C.	EFA	Social psychology	Terrorism and Political Violence
2	Amjad & Wood (2009)	Acceptability of aggression against Jews scale	Support for violent extremism <sup>a</sup>	Religious/ ethnic	6 (anti-Semitic aggression and violence); 5-point Likert scale (absolutely the right thing to do, somewhat right, I am not sure, somewhat wrong, completely wrong)	Amjad, N. & Wood, A.M.		Applied psychology	Aggressive Behaviour
3	Baier et al. (2009)	Right-wing extremist attitudes and behaviour scale	Attitudes toward/ self-reported right-wing extremism <sup>a,b</sup>	Right-wing	13 (9 attitudes towards Jews, Muslims & foreigners; 4 extremist behaviour); 7-point Likert scale	Baier, D., Manzoni, P. & M.C. Bergman		Criminology	Monatsschrift für Kriminologie und Strafrechtsreform Unpublished manuscript
4	Bélanger et al. (2017)	Support for Political Violence Scale	Support for violent extremism <sup>a</sup>	Mixed	21 (justification for different violent political actions); 6-point Likert scale	Bélanger, J.J., Richardson, L., Lafrenière, M.-A.K., McCaffery, P. & Framand, K.		Psychology	

5	Bélanger et al. (2019)	Political Violence Scale	Support for violent extremism <sup>a</sup>	Mixed	6 (support for political violence); 6-point Likert scale	Bélanger et al.	EFA, CFA	Psychology	Frontiers in Psychiatry
6	Besta et al. (2015)	Acceptance of violent change of social system scale	Support for violent extremism <sup>a</sup>	Mixed	3 (violent action to achieve system change); 7-point Likert scale	Besta, T., Szulc, M., & Jaśkiewicz, M.		Psychology	Revista de Psicología Social
7	Boehnke et al. (1998)	Right-wing extremism Scale	Support for violent extremism <sup>a</sup>	Religious/ethnic	10 (6 xenophobia; 4 rightist attitudes); 4-point Likert scale	Boehnke, K., Hagan, J., & Merkens, H.		Social sciences	Applied Psychology: An International Review
8	Brettfeld & Wetzels (2007)	Attitudes towards politically-, and religious-motivated violence scale	Support for violent extremism/terrorism <sup>a</sup>	Religious/ethnic	4 (legitimacy of suicide/terrorist attacks); 5-point Likert scale	Brettfeld, K. & Wetzels, P.		Law	Bundesministerium des Innern
9-11	Doosje et al. (2012)	(1) Attitude toward Right-wing Violence by Others	Support for violent extremism <sup>a</sup>	Right-wing	(1) 4 (attitudes towards Right-wing violence by others);	Doosje, B., van den Bos, K., Loseman, A., Feddes, A.R., & Mann, L. (2012)		Social Psychology	Negotiation and Conflict Management Research
		(2) Own violent extremist intentions	Willingness to engage in violent extremism <sup>i</sup>	Mixed	(2) 3 (own violent extremist intentions); 5-point Likert scale				

12-13	Doosje et al. (2013)	(1) Attitudes towards Muslim violence by others	Support for violent extremism <sup>a</sup>	Religious/ethnic	(1) 4 (attitudes towards Muslim violence by others);  (2) 3 (own violent extremist intentions);  5-point Likert scale	B. Doosje, A. Loseman, & K. van den Bos		Social Psychology	Social Issues
14-15	Fuchs (2003)	Right-wing extremism scale  (1) Right-wing extremist attitudes  (2) Affinity to violence	(1) & (2) Support for violent extremism <sup>a,b</sup>	Both Right-wing	(1) 44 (6 anti-Semitism, 5 attitudes towards national socialism, 7 hostility towards outgroups, 6 ethno-centrism, 7 xenophobia, 5 emotional reactions towards foreigners, 8 sexism)  (2) 13 (7 previous violent behaviour, 6 acceptance of violence)  5-point Likert scale	Fuchs, M.		Social sciences	Kölner Zeitschrift für Soziologie und Sozialpsychologie
16	Hirsch-Hoefler et al. (2016)	Radical Action Scale	Self-reported violent extremism <sup>b</sup>	Religious/ethnic	5 (3 non-violent radical actions, 2 violent radical actions); Yes/No answer categories	Hirsch-Hoefler, S., Canetti, D., & Eiran, E.	EFA	Terrorism research	Studies in Conflict & Terrorism
17	Putra & Sukabdi (2014)	Support for acts of terrorism	Support for terrorism <sup>a</sup>	Religious/ethnic	3 (non-normative (i.e., bombing & conducting physical Jihad) activities	Putra, I.E. & Sukabdi, Z.A		Psychology	Peace and Conflict: Journal of

					linked to acts of terrorism); 6-point Likert scale				Peace Psychology
18-21	Jásko et al. (2020)	(1) Violent extremism scale with support for Tamil group  (2) Violent extremism scale with support for Islam  (3) Support of Islamist violent extremism	(1) – (3) Support for violent extremism <sup>a</sup>	All Religious/ethnic	(1) 3 (support for violence by Tamil people, support for suicide bombing)  (2) 3 (support for ideological violence in service of Islam)  (3) 11 (support of Islamist violent extremism)  7-point Likert scale	Jásko et al.		Social Psychology	Journal of Personality and Social Psychology
22	MEMS (2010)	Militant Extremist Mind-Set	Attitudes towards/support for violent extremism <sup>a</sup>	Religious/ethnic	24 (10 proviolence, 6 vile world, 8 divine power) 5-point Likert scale	Stankov, L., Saucier, G., & Knezevic, G. (2010)	EFA, CFA	Psychology	Psychological Assessment
23-24	Muluk et al. (2013)	(1) Belief in violent jihad scale  (2) Sacred violence scale	(1) Support for violent extremism/terrorism <sup>a</sup>  (2) Willingness	Religious/ethnic	(1) 4 (Agreement to violent jihad); 5-point Likert scale	Muluk, H., Sumaktoyo, N. G., & Ruth, D. M. (2013)	CFA	Political psychology	Asian Journal of Social Psychology

			to engage in violent extremism/terrorism <sup>i</sup>		(2) 4 (willingness in committing sacred violence); yes/ no answer option			
25	MYPLACE 2012/13 (2015)	Support for political violence	Support for violent extremism <sup>a</sup>	Mixed	8 (legitimacy of the use of violence based on 8 different scenarios); 5-point Likert scale	MYPLACE		Political science/ Sociology Published by CORDIS (European Commission)
26-28	Obaidi et al. (2018)	(1) Violent behavioural intentions among Muslims  (2) Willingness to support Muslim persecution  (3) Support for anti-Western violence	(1) & (2) Willingness to engage in violent extremism/terrorism <sup>i</sup>  (3) Support for violent extremism/terrorism <sup>a</sup>	Religious/ ethnic	(1) 7 (willingness to engage in violent extremism);  (2) 6 (willingness to engage in attacks on Muslims)  (3) 5 (justification for terrorists acts in Europe); 7-point Likert scale	Obaidi, M., Kunst, J.R., Kteily, N., Thomsen, L., & Sidanius, J.	(2) EFA, CFA  (3) EFA, CFA	Social psychology European Journal of Social Psychology
29	Pauwels & De Waele (2014)	Self-reported politically or religiously motivated violence	Self-reported violent extremism <sup>b</sup>	Right-wing	4 (previous engagement in violence because of political or religious beliefs); Yes/ No answer categories	Pauwels, L. & De Waele, M.S.		Criminology International Journal of Conflict and Violence

30-32	Pauwels & Svensson (2017)	(1) Endorsement of religious extremism  (2) Endorsement of left-wing extremism  (3) Endorsement of nationalist - separatist extremism	(1) – (3) Support for violent extremism <sup>a</sup>	Religious/ ethnic  Left-wing  Nationalist/ Separatist	(1) 3 items (attitudes favourable to the use of force to in order to achieve Islamic (political) goals)  (2) 3 items (attitudes favourable to the use of force to in order to achieve left-wing (political) goals)  (3) 3 items (attitudes favourable to the use of force to in order to achieve separatist (political) goals)  5-point Likert scale	Pauwels, L. & Hardyns, W. (2018)		Criminology	International Journal of Developmental Science
33	Pedahzur et al. (2000)	Support for political violence	Support for violent extremism <sup>a</sup>	Mixed	3 (acceptance of political violence against politicians and the government); 6-point Likert scale	Pedahzur, A., Hasisi, B., & Brichta, A.		Political science	World Affairs
34	Pedersen et al. (2018)	Support for political violence	Support for violent extremism <sup>a</sup>	Mixed	3 (support for political violence), 5-point Likert scale	Pedersen, W., Vestel, V. & Bakken, A.		Sociology	Cooperation and Conflict
35	PIARES (2018)	Pro-Violence and Illegal Acts in Relation to Extremism Scale	Support for violent extremism <sup>a</sup>	Mixed	6 (acceptance of violence and acceptance of using illegal means); 7-point Likert scale	S. Ozer, S. & Bertelsen, P.	EFA, CFA	Psychology	Scandinavian Journal of Psychology



36-37	Rip et al. (2012)	(1) Radical political activism  (2) Religious extremism	(1) & (2) Support for violent extremism <sup>a</sup>	Nationalist/ Separatist  Religious/ ethnic	(1) 7 (legitimacy of radical and violent political activism)  (2) 6 (support for religiously motivated violence);  7-point Likert scale	Rip, B., Vallerand, R.J., & Lafrenière, M.A.K.		Social psychology	Journal of Personality
38	Setiawan et al. (2019)	Support for violent protest	Support for violent extremism <sup>a</sup>	Religious/ ethnic	6 (support for violent protests against the religious outgroup); 5-point Likert scale	Setiawan, T., De Jong, E. B., Scheepers, P. L., & Sterkens, C. J.	CFA	Social psychology	Archive for the Psychology of Religion
39	Simon et al. (2013)	Sympathy for and willing to engage in radicalism	Support for/willingness to engage in violent extremism <sup>a,i</sup>	Mixed	8 (sympathy for radical (illegal, violent) action); 7-point Likert scale	Simon, B., Reichert, F., & O. Grabow	CFA	Psychology	Psychological Science
40	SVIC (2016)	Support for Violence in an Intergroup Conflict scale	Support for violent extremism <sup>a</sup>	Nationalist/ separatist	8 (4 violence carried out by radical Mapuche activists, 4 violence carried out by the police); 5-point Likert scale	Gerber, M.M., Carvacho, H., & González, R.	CFA	Political psychology	International Journal of Intercultural Relations
41	SyfoR (2014)	Sympathies for Radicalisation	Support for violent extremism and terrorism <sup>a</sup>	Mixed	16 (4 factors: radicalisation, defensive violence, British citizens fighting UK, foreign policy; support for/condemnation of, acts of protest characterised by	Bhui, K., Warfs, N., & Jones, E.	EFA	Clinical psychiatry	Plus One

					differing levels of violence and extremist behaviour); 7-point Likert scale				
42	SVPT (2019)	Sympathies for Violent Protest and Terrorism	Support for violent extremism and terrorism <sup>a</sup>	Mixed	7 (sympathising with: committing minor crime; committing violence in political protests; organising radical terrorist groups; threatening to commit terrorist actions; committing terrorist actions as a form of political protest; using bombs; using suicide bombs to fight against injustices)	Bhui et al. (2019)	CFA	Clinical psychiatry	British Journal of Psychiatry
					7-point Likert scale				
43	SVR (2018)	Sympathy for Violent Radicalization scale	Support for violent extremism and terrorism <sup>a</sup>	Mixed	9 (modified version of SyfoR (Bhui et al., 2014); sympathy or condemnation of nine acts of protest ranging from nonviolent to progressively more extreme/terrorist acts); 7-point Likert scale	Rousseau et al. (2018)	CFA	Clinical psychiatry	Archives of Public Health
44-46	Tausch et al. (2011)	(1) Radical group behavior	(1) Willingness to engage in	(1) Mixed	(1) 5 (non-normative, violent political action); 7-point Likert scale	Tausch et al. (2011)	(1) EFA	Social psychology	Journal of Personality and Social Psychology

			violent extremism <sup>i</sup>					
		(2) Support for violence conducted by Muslims	(2) Support for violent extremism <sup>a</sup>	(2) Religious/ethnic	(2) 3 (support for violence); 5-point Likert scale			
		(3) Support for violence against military forces and civilians	(3) Support for terrorism <sup>a</sup>	(3) Religious/ethnic	(3) 7 (support for attacks against military forces in Muslim countries and attacks against civilians in Western countries); 10-point Likert scale		(2) EFA	
47	Troian et al. (2019)	Support for political violence scale	Support for violent extremism <sup>a</sup>	Mixed	4 (support for political violence to achieve aims) 7-point Likert scale	Troian et al. (2019)	Social Psychology	Aggressive Behavior
48	Webber et al. (2018)	Islamic Extremism Scale	Support for violent extremism and terrorism <sup>a</sup>	Religious/ethnic	11 (support for Islamic (violent) extremism and terrorism); 7-point Likert scale	Webber et al. (2018)	Social psychology	Journal of Personality and Social Psychology
49	Young in Oslo (2015)	Justification of political violence	Support for violent extremism <sup>a</sup>	Mixed	3 (justification of violence to achieve political aims); 5-point Likert scale	Andersen, P.L. & Bakken, A.	Sociology, Anthropology	NOVA Rapport 8/15

50	Yustisia et al. (2020)	Support for Violent Jihad	Support for terrorism <sup>a</sup>	Religious/ethnic	3 (support for Islamist terrorism); 4-point Likert scale	Yustisia, W., Shadiqi, M.A., Mill, M.N., & Muluk, H.	Psychology	Asian Journal of Social Psychology
51	z-Proso (2017)	Violent extremist attitudes scale	Support for violent extremism <sup>a</sup>	Mixed	4 (support for violent extremism); 4-point Likert scale	Nivette, A., Eisner, M., & Ribeaud, D.	Criminology	Journal of Research in Crime and Delinquency
52	Zick et al. (2019)	Right-wing extremist attitudes scale	Attitudes towards right-wing extremism <sup>a</sup>	Right-wing	18 (endorsement of right-wing orientated/ anti-democratic government, attitudes towards National Socialism, social darwinism, chauvinism, xenophobia, anti-Semitism) 5-point Likert scale	Zick, A., Küpper, B., & Berghan, W.	Social Psychology	Friedrich-Ebert-Stiftung

## Supplementary Materials 5.1

Figure S.5.1.

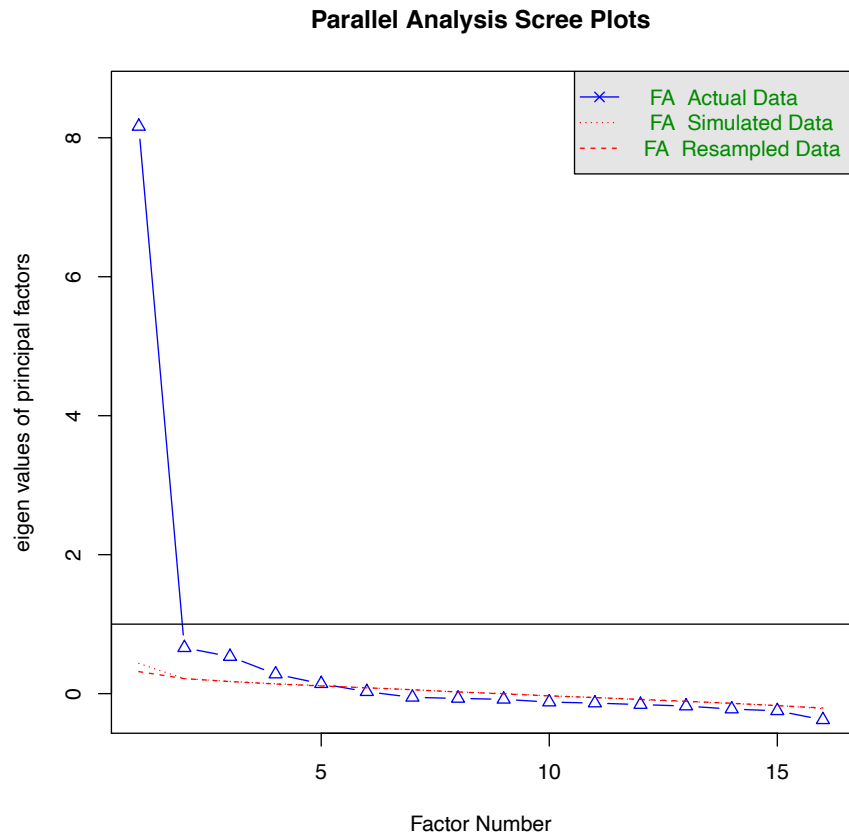
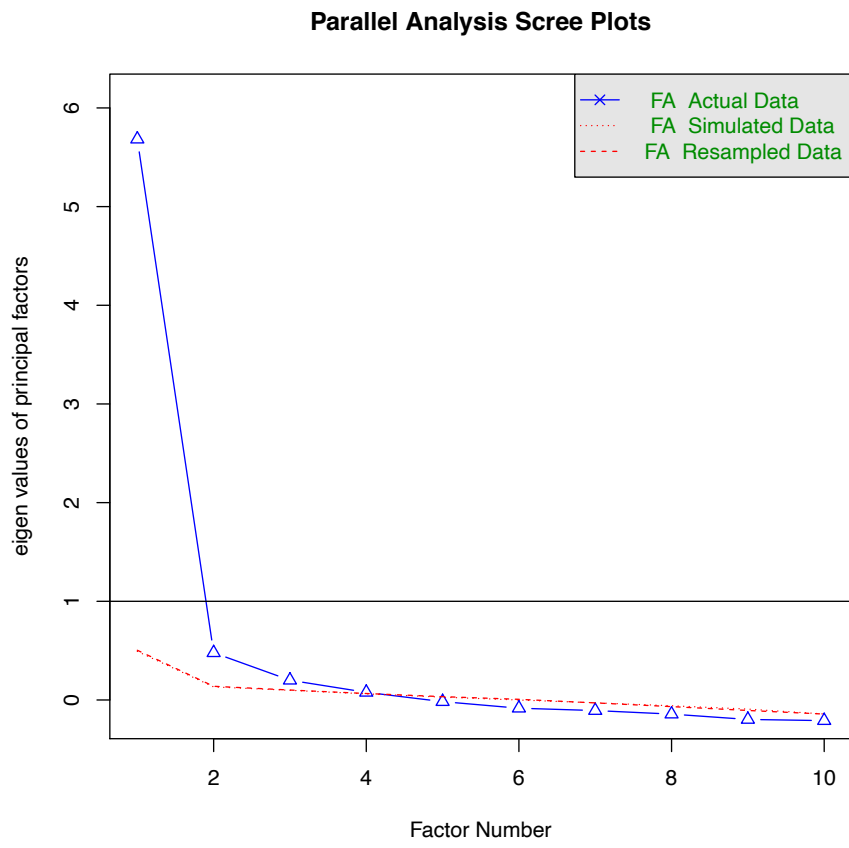


Figure S.5.2.



**Table S.5.1.** Inter-item correlations of all manifest items and factors of the misogyny scale after EFA (Study 1).

Item	1	2	3	4	5	6	7	8	9	10	F1	F2	F3
1	-												
2	.63	-											
3	.67	.74	-										
4	.71	.70	.76	-									
5	.58	.46	.59	.59	-								
6	.62	.52	.62	.65	.76	-							
7	.64	.58	.66	.67	.69	.75	-						
8	.48	.37	.48	.46	.50	.53	.54	-					
9	.36	.32	.43	.41	.46	.47	.46	.57	-				
10	.43	.34	.43	.43	.48	.50	.47	.46	.53	-			
F1	.85	.87	.91	.91	.63	.68	.72	.51	.43	.46	-		
F2	.68	.58	.69	.70	.89	.93	.90	.58	.51	.53	-	-	
F3	.51	.42	.55	.53	.59	.61	.59	.84	.85	.78	-	-	-

**Table S.5.2.** Correlations and covariances between all manifest items and factors and latent correlations between all factors of the finalised misogyny scale after CFA (Study 2).

Item	1	2	3	4	5	6	7	8	9	10	F1	F2	F3
1	2.80	1.67	1.84	1.99	1.28	1.41	1.58	.98	.81	.73	-	-	-
2	.62	2.99	1.91	2.07	1.33	1.47	1.63	1.02	.84	.76	-	-	-
3	.63	.70	2.72	2.28	1.46	1.61	1.79	1.12	.93	.84	-	-	-
4	.69	.68	.76	2.92	1.58	1.75	1.93	1.21	1.00	.90			
5	.60	.51	.61	.67	2.08	1.43	1.58	1.04	.86	.74	-	-	-
6	.59	.56	.65	.70	.70	2.10	1.74	1.15	.95	.81	-	-	-
7	.62	.58	.66	.73	.65	.76	2.53	1.28	1.05	.89	-	-	-
8	.52	.47	.51	.53	.53	.56	.57	1.96	.89	.85	-	-	-
9	.40	.33	.46	.48	.49	.51	.50	.57	1.47	.71	-	-	-
10	.39	.37	.42	.43	.48	.44	.48	.47	.55	1.39	-	-	-
F1	.84	.86	.90	.91	.68	.71	.74	.58	.47	.46	1.60	1.29	1.00
F2	.67	.62	.72	.77	.87	.91	.91	.62	.55	.52	.89	1.31	1.02
F3	.53	.48	.56	.58	.60	.61	.62	.87	.85	.80	.73	.82	1.17

**Table S.5.3.** Standardised factor loadings and fit indices of models for each group.

	Standardised factor loadings										Fit indices of models					
	1	2	3	4	5	6	7	8	9	10	$\chi^2/df$	<i>df</i>	CFI	TLI	RMSEA	SRMR
<b>Gender</b>																
Female ( <i>N</i> = 385)	.72	.75	.89	.92	.75	.87	.85	.79	.84	.68	2.29	32	.979	.971	.057	.036
Male ( <i>N</i> = 365)	.78	.75	.87	.92	.82	.86	.88	.77	.70	.63	2.22	32	.977	.967	.058	.034
<b>Age groups</b>																
Age group 1 ( <i>N</i> = 157)	.76	.77	.85	.89	.84	.91	.79	.74	.66	.60	1.45	32	.984	.978	.053	.034
Age group 2 ( <i>N</i> = 279)	.77	.77	.89	.93	.76	.89	.88	.77	.71	.64	1.97	32	.974	.968	.059	.039
Age group 3 ( <i>N</i> = 314)	.75	.75	.89	.92	.78	.84	.89	.83	.82	.73	1.51	32	.990	.986	.040	.031



**Table S.5.4.** Measurement invariance (configural, metric, and scalar).

Model	Comparison	$\chi^2$ (df)	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$ ( $\Delta$ df)	$\Delta$ CFI	$\Delta$ TLI	$\Delta$ RMSEA	$\Delta$ SRMR	MI
Gender												
Model 1: CI		142.36 (64)	.978	.969	.057	.032						
Model 2: Metric	Model 1	167.03 (71)	.974	.967	.060	.050	24.67 (17)***	-.004	-.002	-.003	-.018	Met
Model 3: Scalar	Model 2	207.12 (78)	.971	.963	.063	.053	40.09 (7)***	-.003	-.004	-.003	-.003	Met
Model 4: Eqmeans	Model 3	229.78 (81)					22.66 (3)***					
Age groups												
Model 1: CI		158.20 (96)	.983	.977	.051	.037						
Model 2: Metric	Model 1	188.07 (110)	.979	.975	.053	.053	29.87 (14)	-.004	-.002	-.002	-.016	Met
Model 3: Scalar	Model 2	234.91 (124)	.975	.972	.057	.057	46.84 (14)***	-.004	-.003	-.004	-.004	Met
Model 4: Eqmeans	Model 3	267.62 (130)					32.71 (6)***					

*Note.* Statistically significant  $\Delta\chi^2$  were marked with ‘\*’. The Satorra-Bentler scaled chi-square difference test is reported. CI = configural invariance; Metric = Metric invariance; Scalar = Scalar invariance; Eqmeans = Equal group means. MI = measurement invariance.

**Table S.5.5.** Latent Mean Differences.

Model	Factor	$M_{Diff}$	Cohen's $d$
Gender, Male = 0			
	F1	-.482***	.38
	F2	-.324***	.27
	F3	-.197***	.19
Age Groups			
Age group 1-2	F1	.187***	.14
	F2	-.019	.02
	F3	-.048	.05
Age group 1-3	F1	.333***	.28
	F2	-.055	.05
	F3	-.159***	.17
Age group 2-3	F1	.166***	.13
	F2	-.038	.03
	F3	-.159***	.14