



Submitted : 04 December, 2025

Accepted : 17 December, 2025

Published : 18 December, 2025

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Keywords: Extremism; Neuropsychology;
Radicalization; Irrational beliefs; Emotional regulation

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Review Article

A Neuropsychological Perspective of the Extremist Mind

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Abstract

Extremism remains a persistent challenge for contemporary societies, with existing prevention and deradicalisation efforts often failing to fully address the psychological mechanisms underlying radical belief formation. This theoretical review examines extremism through an integrative psychological framework informed by, but not reducible to, neuropsychological research. It proposes that the adoption of an extremist mindset can be understood as the interaction of psychological vulnerabilities, irrational evaluative beliefs, socio-political conditions, and identity-based reinforcement processes.

Drawing on Cassam's concept of "mindset extremism," Rational Emotive Behaviour Therapy (REBT), and contemporary cognitive research, the paper explores how heightened threat sensitivity, emotional dysregulation, and cognitive rigidity may contribute to dichotomous thinking and moral disengagement. Neurobiological findings are discussed cautiously and framed as correlational and theoretically suggestive rather than deterministic. By integrating psychological, social, and contextual levels of analysis, this work offers a non-reductionist model of extremist mindset formation and outlines implications for research and multi-level intervention strategies.

Introduction

This work argues that while neuropsychological factors create a vulnerability, it is the interplay with specific irrational beliefs (as per REBT) and social triggers that most accurately predict the adoption of an extremist mindset. To lay the foundation for this argument, the following sections will first define extremism and review current understandings, followed by an exploration of mindset formation and the psychological pathways involved [1].

Extremism represents a significant and widely debated challenge in contemporary global society. Although various deradicalisation and prevention programs have been implemented globally, the persistence and complexity of the issue remain insufficiently addressed [2].

The truth is that recent developments in established democracies suggest that citizens' commitment to liberal democratic principles is weakening. Although cross-national surveys report a general preference for democracy, a significant

proportion of respondents also express approval for non-democratic alternatives [3-5].

According to the author Cassam [2,6], there are three forms of extremism: ideological, methodological, and psychological. The last form, designated as 'mindset extremism,' refers to the psychological conditions that predispose individuals toward adopting extreme methods. As stated, this theoretical perspective suggests that effective interventions should focus on preempting the development of extremist mindsets as a means of mitigating extremist behaviors [7]. Comprehending mindset extremism collectively provides a more precise analytical lens through which it is easier to examine events [2,6,7].

The psychological pathway involves the adoption of an extremist mindset, which serves as an enabling condition that facilitates the use of extreme methods. Specifically, this mindset is characterised by a preoccupation with perceived victimhood and a disregard for the consequences of violence. Subsequently, a triggering event, such as the perception of a

grievance, may prompt individuals with this mindset to engage in violent behaviour [2,6,7].

Some researchers describe an archetypal extremist mindset as having four main psychological traits [2,6,8]. These include a strong focus on purity, virtue, humiliation, and victimhood; intense emotions like anger, humiliation, resentment, and self-pity; rigid attitudes such as refusing to compromise, being indifferent, intolerant, or opposed to pluralism; and a tendency to think in conspiratorial, apocalyptic, or catastrophic ways [2,6,8].

The psychological architecture of extremism

Radicalization typically begins with a “cognitive opening, a period during which an individual becomes receptive to new worldviews, often triggered by perceived injustice, discrimination, or existential crisis. During this moment, previously stable belief systems are questioned, creating a psychological vacuum that extremist ideologies can fill by offering meaning, belonging, and certainty [5].

This process is mediated by cognitive evaluation biases, tendencies to interpret ambiguous social information in ways that confirm perceived threats to one's group. Moghaddam's [9] “staircase to terrorism” model illustrates how perceptions of unfairness and moral outrage, coupled with rigid thinking, progressively narrow the individual's behavioral options until violence is perceived as justified [10].

According to the REBT – Rational Emotive Behaviour Therapy, a form of cognitive-behavioural therapy (CBT), dysfunctional emotions and maladaptive behaviours arise from irrational evaluative beliefs, often expressed as rigid “musts,” “shoulds,” and “oughts.” Trip, et al. [10] identified absolutistic demands for fairness and certainty as core irrational beliefs linked to extremism [10,11].

From the Rational Emotive Behaviour Therapy (REBT) perspective, low frustration tolerance and intolerance of uncertainty are irrational beliefs that magnify emotional distress in ambiguous situations. The promise of absolute truth and stability within radical groups becomes psychologically comforting, even at the cost of moral flexibility [11].

When reality contradicts these kinds of beliefs, frustration and anger emerge, which can escalate into hostility and moral disengagement toward perceived out-groups. These dogmatic cognitive patterns lead to black-and-white thinking, in which people and ideas are globally evaluated as either entirely “good” or “evil.” Such global evaluations of human worth underpin the “us vs. them” dichotomy central to extremist ideology [10,11].

Emotional dysregulation thus becomes a powerful catalyst for extremist behaviour, reinforced by group narratives that glorify moral purity and sacrifice.

Moghaddam [9] explained terrorism using the image of a staircase that narrows as it rises, with the terrorist act at the top. As people move up each floor, their choices depend on which doors they believe are open to them. What matters

most is not just the building's structure, but how people see it and the options they think they have. As they go higher, their choices become more limited until they feel the only option left is to harm others, themselves, or both. This way of thinking about behaviour, known as a 'decision tree,' has become a valuable tool in psychology [12].

Research within the uncertainty-identity theory demonstrates that individuals experiencing chronic self-uncertainty are drawn to groups that provide clear norms and rigid ideologies. Extremist organisations often exploit this need by offering a coherent worldview and strict behavioural rules, reducing existential anxiety [11].

Neuropsychological foundations

At the neuronal level, extremism-related cognition engages circuits involved in threat detection and emotional salience, particularly the amygdala. The amygdala's hyperactivity to perceived threats, especially social threats, can enhance fear conditioning and bias individuals toward interpreting out-group members as dangerous or morally corrupt [13].

Studies in psychology have shown that individuals with higher authoritarian or extremist tendencies display increased amygdala reactivity to ambiguous facial expressions or threatening stimuli, reflecting an exaggerated vigilance system that favours defensive aggression [13].

Cognitive flexibility and inhibitory control, functions mediated by the prefrontal cortex (PFC), are essential for evaluating evidence, managing emotions, and revising beliefs. Dysfunction or underactivation in regions such as the dorsolateral PFC and anterior cingulate cortex (ACC) can impair the ability to tolerate ambiguity, suppress impulsive reactions, and engage in complex moral reasoning.

Neuroimaging studies suggest that reduced prefrontal regulation of limbic activity contributes to the persistence of dogmatic or rigid beliefs. When prefrontal control is compromised, due to stress, chronic anger, or social isolation, amygdala-driven emotional responses dominate decision-making, reinforcing extremist cognition.

The Ventromedial Prefrontal Cortex (vmPFC) has a vital role in moral evaluation, empathy, and decision-making based on values. Damage or reduced activity in this region has been linked to moral inflexibility and a decreased ability to feel empathy.

Extremist ideologies often involve moral disengagement, where harmful actions are justified as serving a higher good. This moral reframing may reflect altered vmPFC functioning, allowing violent behaviour to coexist with a preserved sense of moral righteousness.

Participation in extremist groups can also activate reward circuits, such as the ventral striatum and nucleus accumbens, through social reinforcement. Group membership provides psychological rewards, status, belonging, and purpose that strengthen ideological commitment. Over time, these neural reward pathways consolidate the link between identity

affirmation and extremist behaviour, making deradicalisation particularly challenging [14,15].

An integrative neuro-psychological model

This theoretical review argues that the adoption of an extremist mindset is best predicted by the interaction of neuropsychological vulnerabilities, specific irrational beliefs, and social triggers [14,15]. Evidence demonstrates that extremist ideology is grounded in identifiable psychological and neurobiological mechanisms. These analytical levels are interdependent and form a feedback loop. Psychological dispositions are reinforced by their neural substrates, while neural processes are shaped by psychological factors.

This reciprocal relationship generates a self-perpetuating cycle of radicalisation. The review's primary contribution is the integration of the psychological profile of the extremist mindset with its potential neurobiological correlates. Cassam's model, characterised by preoccupations with purity and victimhood, disproportionate emotional responses, and conspiratorial thinking, is plausibly rooted in the brain's threat and reward systems [2,6].

For instance, hyperactivity in the amygdala provides a neurobiological explanation for persistent perceptions of threat and victimhood, predisposing individuals to interpret ambiguous social cues as dangerous. This heightened vigilance reinforces the 'us versus them' dichotomy and the emotional dysregulation, such as anger and resentment, described in the psychological profile. When the prefrontal cortex (PFC) function is compromised, limbic-driven distress is insufficiently regulated. The dorsolateral PFC is critical for cognitive flexibility, while the ventromedial PFC (vmPFC) is essential for moral reasoning and empathy [13].

Dysfunction in this prefrontal regulatory system can result in rigid, dichotomous thinking, intolerance of ambiguity, and moral disengagement, which are defining features of the extremist mindset [16]. This neuropsychological connection accounts for both the emotional reactivity and cognitive inflexibility observed in individuals with this profile, including resistance to revising beliefs despite contradictory evidence [17].

The Rational Emotive Behaviour Therapy (REBT) framework provides an explanatory link, as the irrational beliefs identified by Trip, et al. [10], such as absolutistic demands for fairness and certainty, and low frustration tolerance, can be conceptualised as cognitive-emotional processes [1].

These irrational beliefs can be understood as the cognitive-emotional manifestation of limbic-prefrontal dysregulation. Psychological distress caused by an unpredictable world, processed by a reactive amygdala and an under-modulating PFC, creates an intense craving for the absolute certainty and simple moral universes offered by extremist ideologies [18].

The group provides ideological solace and activates the brain's reward circuits, reinforcing identity and commitment each time the ideology is affirmed. This process closes the loop

and makes disengagement neurologically and psychologically difficult [2,6,8].

Testable hypotheses

H1: Irrational beliefs characterised by absolutistic demands for certainty and fairness will be positively associated with susceptibility to extremist narratives under conditions of perceived injustice.

H2: Emotional dysregulation and low frustration tolerance will mediate the relationship between perceived grievance and endorsement of extremist attitudes.

H3: Cognitive rigidity will predict resistance to counter-extremist information independently of ideological content.

H4: Social identity reinforcement will moderate the relationship between psychological vulnerability and behavioural radicalisation.

Implications for intervention

Conceptualising extremism as a dysfunction involving cognitive, emotional, and neurobiological processes supports a multi-level intervention strategy. Deradicalisation programs that address only ideological narratives are likely inadequate unless they also target psychological and neurological mechanisms [19].

The synthesis of current research suggests that effective strategies should be implemented simultaneously in the following areas:

*Address cognitive rigidity using Rational Emotive Behaviour Therapy (REBT) and Cognitive Behavioural Therapy (CBT) techniques, which challenge inflexible, absolutist beliefs and impatience underlying extremist ideologies;

*Enhance emotional regulation through mindfulness-based interventions, which have demonstrated efficacy in reducing stress responses and mitigating rapid fear reactions. This approach increases resilience to uncertainty and reduces perceived threats.

*Provide constructive alternatives by facilitating social reintegration and fostering adaptive group identities that counteract the appeal of extremist organisations.

This integrative, three-component framework addresses neurobiological, psychological, and social domains, offering a comprehensive and sustainable strategy for the prevention and reversal of radicalisation [19-22].

Epistemological considerations and limitations

This analysis is situated within a predominantly secular and liberal-humanist epistemological framework characteristic of contemporary psychology. As such, classifications of irrationality, extremism, and violence are informed by normative commitments to harm reduction, pluralism, and democratic coexistence. Acknowledging this stance is essential to avoid treating psychological constructs as value-neutral or universally applicable.

Limitations include the largely correlational nature of existing psychological and neurocognitive evidence and the ethical constraints surrounding direct empirical research with extremist populations.

Conclusion

Extremist mindsets emerge from a dynamic interaction between psychological processes, socio-political contexts, and identity-based reinforcement mechanisms. Neuropsychological factors may contribute to vulnerability, but they do not determine ideological outcomes. A psychologically grounded, context-sensitive approach offers a balanced framework for understanding and addressing extremism.

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