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Threshold of Adversity: Resilience and the Prevention of Extremism Through Education

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ABSTRACT

This article introduces the concept of ‘threshold of adversity’ as an, at present, tentative means of understanding the turning points to radicalization and extremism within educational systems. The conceptual frame is, we argue, of pedagogical and policy relevance across and beyond Nordic countries. Across Nordic countries, the main objective for the prevention of radicalization and extremism through education (PVE-E) is to strengthen the students’ resilience against ideological influences. Given the specialist complexities of the interdisciplinary research literature on terrorism, from which much PVE-E derives, for teachers and policy-makers, understanding the theoretical contexts, which underlie such policy innovations and their pedagogical implementation, are, understandably, problematic. To discuss extremism and the possibilities of its prevention especially in the education sector, an understanding of what exactly is being prevented or fought against is needed. Our conceptual ‘threshold of adversity’ model offers at least a starting point for a more practicable pedagogical implementation.

Keywords: *threshold of adversity, resilience, prevention of radicalization and extremism through education (PVE-E), extremist mindset, metacognition*

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Introduction

This article introduces the concept of ‘threshold of adversity’ as an, at present, tentative means of understanding the turning points to radicalization and extremism within educational systems. The conceptual frame is, we argue, of pedagogical and policy relevance across and beyond the Nordic countries. Since, however, our funded empirical research is drawn from Finland, this conceptual advance is offered in the initial instance for consideration in the Nordic region as a basis for wider international consideration. Across the Nordic countries, the main objective for the prevention of radicalization and extremism through education (PVE-E) is to strengthen the students’ resilience against ideological influences (Finnish Ministry of the Interior, 2020, pp. 74–81, Skr 2015, pp. 22–30; Danish Govt., 2016, pp. 9–12; Norwegian Govt., 2016, pp. 17–24). However, as resilience is a widely used psychological concept, the way it relates to the prevention of radicalization may remain unclear. Given the specialist complexities of the interdisciplinary research literature on terrorism, from which much prevention of radicalization and extremism through education (PVE-E) derives (Gearon, 2019a, 2019b; Ghosh, 2017), for teachers and policy-makers, understanding the theoretical points which underlie such policy innovations and their pedagogical implementation, is, understandably, problematic. Given the prevalence of often deeply contested PVE-E initiatives, they are an integral, legislatively aspect of broader European and international public policy related to national and global security. In this article, we offer a simplification of a complex phenomenon, not to undermine the theoretical and methodological nuances of PVE-E initiatives, but in order to help non-specialist educationalists grasp both the import of these policy and pedagogical developments and the means of more practicable implementation. Our conceptual ‘threshold of adversity’ model offers a starting point to the examination of the notion of resilience in relation to education, in particular for the purpose of PVE-E. After some contextual framing on PVE-E policy and practice, and drawing on multidisciplinary research literature on radicalization and extremism, we present, for this particular context, a pedagogical and policy-applicable framework for understanding young people’s resilience at these problematic thresholds of adversity.

PVE-E Policy and Practice

Societal polarization, extremist movements and extremist attacks are on the rise and all have been motivational in the development of PVE-E policy and practice across and beyond educational institutions (Alava, Frau-Meigs & Hassan, 2017; Eurobarometer, 2018; Eger & Valdez, 2014). Furthermore, school attacks are still a relatively recent collective memory in Finland (Oksanen et al., 2013; YLE, 2019). Thereby, the prevention of radicalization and violent extremism through education (PVE-E) can also be understood as a natural part of the agenda of educational institutions. At the international level, different nation states have chosen different approaches and assigned dissimilar roles to the education sector (for all action plans, see European Commission, 2020).

Still, there are also many similarities between the national action plans of the Nordic countries concerning the role of education in the prevention of extremism among students. The Nordic action plans stress the importance of building students' resilience against radicalization through, for example, promotion of democratic values (*what* to think) and various skills related to critical thinking (*how* to think) (Finnish Ministry of the Interior, 2020, pp. 74–81; Skr, 2015, pp. 22–30; Danish Govt., 2016, pp. 9–12; Norwegian Govt., 2016, pp. 17–24). In the light of these documents, the notion of resilience seems to epitomize the cultural ethos of the Nordic welfare states with the objective to raise tolerant, educated and critical citizens committed to democratic values (e.g. Klette, 2018), while 'violent extremism' seems to represent the antithesis of all this.

In a literature review of 73 papers on different approaches to PVE, Stephens, Sieckelinck and Boutellier (2019) conclude that the concept of resilience 'could provide the basis for a common framework for prevention' (p. 1), but suggest that its use 'in relation to violent extremism requires us to define who is being resilient to what and what exactly is considered to be a resilient, positive outcome' (p. 10). In other words, to carry out prevention work successfully, more understanding of the objectives – what exactly is to be prevented and promoted – is needed, as well as directions for developing pedagogical tools through which these aims can be supported.

Modes of Resilience and Threshold of Adversity

The notion of a 'threshold of adversity', used by child psychologist Ross Greene to depict the individual limits of coping, is a way of describing resilience in a more pedagogically tangible way in relation to negative developments, such as radicalization and extremism.

In many instances where kids have resorted to extreme violence, people were surprised that the kid went to such extremes. But we all have what might be called a 'threshold of adversity', and we all have different levels of skill in dealing with adversity. When a person's threshold of adversity exceeds their skills, the likelihood of violence is heightened. (Greene, 2009, 252)

Greene's pastorally-oriented conceptual framing has a broad focus. His important study *Lost at School* (Greene, 2009) is driven by notions of inclusion. This same conceptual framing, for which we give much credit, is naturally not as directly related to PVE-E initiatives as our own research. However, we suggest that Greene's conceptualization has much prospective application, not least because the philosophical and empirical literature of radicalization and extremism itself suggests that there is a tendency towards particular breaking points (thresholds), which generate mindsets characterized by hostility, attitudes of toxicity to societal norms, an us-versus-them mentality, attitudes, beliefs and values, which themselves take on the characteristics of inflexible dogmatism (Cassam, 2021; Berger, 2018; Borum, 2014).

The concept of a threshold of adversity is, however, particularly applicable to the present examination, where going ‘over the threshold’ may imply a notable process with serious implications to national security and societal cohesion. The mission of participating in the prevention of radicalization and extremism through the fostering of student resilience is thus a well-grounded addition to the agenda of educational institutions across the Nordic region (Sjøen & Jore, 2019; Davies, 2019; Ghosh, 2017).

Ghosh’s (2017, 2020) work has been critically important internationally for its demonstration of a critical engagement with PVE-E initiatives globally. While her work has focused on violent ‘religious’ extremism, its relevance extends to any form of extremism. As governments prepare their counter-terrorism policies, many focus solely on reactive measures such as military action and surveillance measures – *hard power* – that are responsive to individuals who are already radicalized. She argues, as we do, ‘that education should be incorporated into such policies as a *preventive* measure that not only makes students resilient citizens but can also address the psychological, emotional and intellectual appeal of narratives – *soft power* – that terrorists purport’ (Ghosh, 2020). By so doing, Ghosh argues – and provides a substantial review of the international research literature to support her case – that ‘states can counter soft power with the use of soft power in a concerted effort among government departments, social institutions and communities’ (Ghosh, 2020).

The notion of the ‘radical’ and the ‘extreme’ are themselves, however, contentious. In all global policy literature, the definition invariably relates to more than a deviation from societal norms and values, but rather extends to incursions of the law and, critically, leads to personal and or societal harm. We must at this point note, however, that the idea of harm is itself contested, and contestable. There are notable and prominent minority voices, which suggest that it is the majority – through the unjust use of political power and economic advantage – who are the source of harm to minority and less powerful interests, the marginalized and the poor. We need here only to look at the now well-established literature on critical pedagogy (Darder, Baltodano & Torres, 2017).

These powerful critiques cannot be set aside. Indeed, the plethora of initiatives which aim at strengthening young people’s resilience to extremism might seem to be a demonstrable case in point; still, teachers and policy-makers are themselves necessarily at the behest of a legislatively enforced decree to further these central objectives for the prevention of violent extremism and radicalization (PVE) (European Commission, 2020). The notion of resilience is also broadly present in the national action plans of the Nordic countries (Skr, 2015; Danish Govt., 2016; Finnish Ministry of the Interior, 2020). The general aim of these plans is to reinforce the populations’ resilience against violent extremism and radicalization at societal, community and individual levels by various measures, in order to ‘focus on the process of harnessing key resources to build and sustain the factors associated with positive psychosocial development and community cohesion’ (Grossman et al., 2020, p. 2). Educational institutions are distinctly mentioned in the Nordic action plans as key platforms for PVE, with Finland dedicating

a separate chapter for the education sector (Finnish Ministry of the Interior 2020, pp. 74–81). Schools are seen as particularly compelling platforms for the deployment of resilience-focused prevention programs, as they are central, long-term growing-up contexts for children and youth providing resources, structures, practices and values conducive to positive development (e.g., Niemi, Benjamin, Kuusisto & Gearon, 2018). Consequently, along with the police and other authorities, the policy level discourse has made educators agents in the battle against violent extremism and terrorism among youth in the Nordic and many other countries.

However, numerous studies highlight teachers' puzzlement about these suggested duties or responsibilities regarding the prevention of radicalization (Parker, Lindekilde & Gøtzsche-Astrup, 2020; Mattsson & Johansson, 2020; Ragazzi, 2017; van San, Sieckelinck & de Winter, 2013). Many questions remain open especially regarding the objectives and pedagogical implementation of such responsibilities, which, together with the vague definitions of the key concepts, make tackling this mission challenging (Sjøen & Mattsson, 2020; Mattsson & Säljö, 2017; Ragazzi, 2017; Grossman et al., 2017; Christodoulou, 2020). As resilience is a key notion here, and one which is perhaps loosely defined and vague in content, we begin with some contextual and definitional clarity on the origins of the term.

Resilience has been widely used in psychology for decades to refer to the flexibility of the mind and the capacity of returning to normal functioning after a period of adversity (Southwick et al., 2014; Reivich & Schatté, 2002). While resilience to violent extremism should also be tackled at the societal and community levels, for teachers and educators the most appropriate and natural angle of entry into the national prevention framework is the work they carry out with individuals and groups of children or young people. Due to the focus on the individual level, the important social, community, national and global level themes related to, for example, societal and structural inequalities, national and international tensions, conflicts and polarization are not covered in this paper. This aside, compared with people with low resilience, resilient individuals typically have access to resources that maintain or restore their wellbeing in difficult situations (Reivich & Schatté, 2002). These resources strengthen one's resilience, the capacity to deal and cope with difficulties tested especially in surprising and difficult situations – like a pandemic or war – that challenge people's familiar patterns of action and thoughts and that require flexible adjustment to the new demands of the situation. The breadth of the threshold of adversity is related to the level of resources and skills available for the individual (Greene, 2009).

The resources associated with resilience consist of internal and external factors (Southwick et al., 2014; Fergus & Zimmerman, 2005). *Internal factors* refer to biological predispositions that provide the basis for developing resilience, e.g. one's temperament, the way the body reacts to stress, and the multiple psychological abilities related to the self – self-awareness, self-efficacy, self-regulation and mental agility, for example (Wu et al., 2013; Fergus & Zimmerman, 2005; Richardson, 2002). *External factors* refer, first and foremost, refer to an individual's relationship with others and to

the support system and the environment around them (Fergus & Zimmerman, 2005; Richardson, 2002). If in situations of distress individuals have someone or something to turn to for support and meaning, the likelihood of them overcoming the adversity increases (Reivich & Schatté, 2002). Safe, supportive relationships to caregivers, family and peers play a key role in fulfilling the basic psychological needs for safety and relatedness and are central in the formation of identity (Seligman, 2002; Peterson, 2006). Positive connections to peer groups are increasingly essential in adolescence, as they help young people achieve growing independence from parents, practice a range of socio-emotional skills, construct their own identities and learn about aspects related to social norms, status and acceptance (Brown & Larson, 2009; Fergus & Zimmerman, 2005). Relatedness also refers to a feeling of belonging to something larger than oneself, such as a group of people, nature, a faith, or a mission or purpose that one values as important and worthy (Kuusisto, 2011; Benjamin, 2017).

Besides the above-mentioned social aspects, external factors also include environmental factors, like institutions and communities wherein the individual operates and interacts on a regular basis. These institutions, such as schools and families, can help the above-mentioned internal and external factors grow and thus strengthen the individual's resilience, provided that these factors are valued within these institutions. Societal factors also play an important role in enabling or hindering an individual's wellbeing. Societies may lack protective core structures (equal opportunities for welfare, culture, education and work) or maintain forms of institutionalized discrimination that put young individuals from diverse social groups in unequal positions in society (e.g. Hayes, 2017). In the Nordic countries, the complementary role of societal education is key in mediating the divergent resources between children and youth throughout their educational trajectories, especially for the most vulnerable individuals (Benjamin, Koirikivi & Kuusisto, 2020; Blossing, Imsen & Moos, 2014). Educational inclusivity, institutional support and positive relationships have also been highlighted in recent studies on PVE-E as important protective factors (Sjøen & Jore, 2019), also when studied from the students' own perspectives (Benjamin et al., 2020, 2021).

According to theories on human needs and motivations (e.g., Maslow, 1943; Deci & Ryan, 2008; Kruglanski, Bélanger & Gunaratna, 2019), the satisfaction of the psychological needs for safety, relatedness, autonomy, and significance are prerequisites for growth and wellbeing. The positive presence of the resilience resources described above typically enables the satisfaction of these needs, especially during childhood and youth. The satisfaction of basic psychological needs is relevant in the framework of PVE-E, as these needs are inversely related to processes of radicalization, as we will discuss next.

Radicalization and the Extremist Mindset

There is no definitive answer as to why people radicalize, but it is possible to look for common patterns with a special regard to individual life trajectories and individual cognitive responses to these (Cassam in Sardoč, 2020). While radicalization

is a complex and non-straightforward process by which people develop extremist ideologies and beliefs (Borum, 2014; Neumann, 2013; Berger, 2018) typically within extremism-enabling environments (Bouhana, 2019), the common factors behind the individual processes of radicalization habitually point to various life situations in which the individual's psychological needs have been compromised, which have then activated a quest to restore this lost significance (Kruglanski, Bélanger & Gunaratna, 2019). Building on such research findings, Kruglanski, Bélanger and Gunaratna have conceptualized the '3Ns of radicalization' to explain the typical psychological processes behind radicalization.

The first N refers to the basic psychological *needs* for safety, autonomy, competence and relatedness, which need to be satisfied to maintain a personal sense of significance (Kruglanski et al., 2019; Deci & Ryan, 2008; Maslow, 1943). If for some reason the individuals' resilience resources, described in the previous section, are weak and/or incompatible with the demands of the environment and these basic psychological needs are not satisfied, the personal sense of significance, control and agency may be weakened. This intensifies feelings of uncertainty, grievance or injustice, which, in turn, may activate the individual to search for alternative solutions to rectify the situation to satisfy their psychological needs (Hogg, 2019).

The second N refers to the ideological *narratives*. These narratives (e.g., political ideologies or religious or cultural scripts) provide a sense of purpose and solutions to resolve an unsatisfactory situation. Extremist organizations typically convey comprehensible narratives explaining the current situation, its history and a future scenario, often through a portrayal of a pure and authentic in-group and the impure out-group whose existence poses a threat to the in-group's wellbeing and future (Berger, 2018). By aligning one's thinking and worldviews with a narrative shared by many others, one may be able to restore feelings of safety and purpose, and most importantly, gain a sense of significance and belonging (Kruglanski et al., 2019).

The third N stands for social *networks*. Feelings of uncertainty or grievance foster the adoption of a group-centric orientation (Kruglanski et al., 2019). In situations of confusion or distress, it is natural to seek guidance and comfort from a group, find a 'niche' in a family, peer group or a close community, which is viewed as capable of providing identity markers, security and certainty (Hermans & Dimaggio, 2007). Identification with a strong and enduring entity and its shared values and beliefs gives individuals a sense of significance and empowerment, because the groups' existence transcends the lives of the individual members (Kruglanski et al., 2019). Feelings of uncertainty can be lessened by transferring the responsibility of one's own meaning-making to an authority or a strong leader in a hierarchical organization, in other words, to conform to a powerful external position to which one's own position is subordinated (Hermans & Dimaggio, 2007).

When escalated, radicalization may lead to violent extremism. Education is misused to prevent violent extremism (e.g., Niemi et al., 2018), although extremism is difficult to define with precision. Currently, definitions of extremism differ depending

on the source (Sedgwick, 2010). For example, the Counter-Extremism Strategy in the UK offers a detailed description of extremism as ‘the vocal or active opposition to our fundamental values, including democracy, the rule of law, individual liberty, and respect for and tolerance of different faiths and beliefs.’ (Gov.UK, 2019). To compare, the Finnish Ministry of the Interior (2020, p. 20) refers to violent extremism as ‘using, threatening with, instigating, encouraging or justifying violence on ideological grounds’. According to Berger (2018), extremism at its core stems from the human tendency to categorize people into social groups. The act of categorization is about identifying oneself as being part of an in-group and determining who belongs to the in-group and consequently to the out-group. Categorization impacts how people view themselves and other groups: the act of identification makes people more susceptible to biases in favor of their in-group and against the out-group. Triggered by (one of) the three Ns (Kruglanski et al., 2019) and/or a radicalizing environment (Bouhana, 2019), the negative views about the out-group may escalate to an extent that one starts believing that an in-group’s wellbeing or survival necessitates hostile actions against the out-group. These actions can vary from verbal and physical harassment to systematic discrimination, violence or even genocide. (Berger, 2018).

The characteristics of an extremist can be portrayed in diverse ways. For example, the Oxford Dictionary online defines an extremist as a person who holds extreme political or religious views, especially one who advocates illegal, violent, or other extreme action. Whereas, the Cambridge Dictionary online depicts an extremist as someone who has beliefs that most people think are unreasonable and unacceptable. As demonstrated by these examples, the notion of extremism can be viewed as an ideological stance, which means taking a position at the extreme ends of an ideological continuum, such as conservative or liberal political orientation (Cassam, 2020). Extremism may also be tackled as an issue of methods, where being an extremist is a matter of willingness to use or accept the use of extreme methods that are against the norms or the law, such as sabotage or ethnic agitation (Neumann, 2013; Cassam, 2020). Violence is typically associated with extremism and often seen as the key characteristics of an extremist (Sedgwick, 2010). However, it is possible to be pro-violence without being an extremist, for example, in military settings (for ‘militant extremism’, see Saucier et al., 2009). Likewise, extremism doesn’t need to be violent or pro-violence, although in many cases extremism is both things (Berger, 2018).

Extremism can also be observed in psychological terms (Cassam, 2021), which will be the focus in this paper. In the psychological sense, extremism can be best understood as a mindset. Extremism researchers (Borum, 2014; Berger, 2018; Cassam, 2021; Kruglanski et al., 2019; Zmigrod et al., 2021) have concluded that the individuals or groups that can be identified as extremist have similar psychological characteristics regardless of the ideology supported. Berger (2018) argues that with a closer look, the views can be ‘diametrically opposed with respect to the content of their beliefs, yet they are remarkably similar with respect to the structure of what they believe and how they justify their views’ (Berger, 2018, Kindle location 729). The ‘extremist mindset’,

a term coined by philosopher Quassim Cassam (2021) to depict extremism in psychological terms, provides a compressed synthesis of the elements inherent in extremism. According to the synthesis, being an extremist is to have a certain mindset, to hold a particular mental outlook or way of seeing the world. More complex than beliefs or mere concepts, Cassam believes mindsets are closer to the idea of worldviews through which the world is viewed, perceived, and interpreted (2021).

In Cassam's depiction (2021), an extremist mindset typically involves a (1) pre-occupational component, which refers to beliefs that one or one's group is threatened or somehow in danger. Extremists are usually preoccupied, to varying degrees, with the idea of persecution. The extremist mindset is built upon the idea that the individual or group is victimized or oppressed by some other group or ideology or more generally by society (e.g. Nazis-Jews, Breivik-Islam, Myanmar government-Rohingya Buddhists). Extremist groups typically create narratives about certain groups of people as threats and thus justify the use of violence against them as self-defense. From the extremist point of view, this provides legitimacy to resort to violent methods to defend themselves (Berger, 2018; Maynard, 2014). Closely affiliated to this is a preoccupation with purity, whether it be rooted in racial, ethnic, religious or ideological authenticity (Cassam 2021; Maynard, 2014). The idea of purity provides people holding an extremist mindset with a justification to pursue, defend and promote a form of what they believe is truth in its purest and unadulterated form. At worst, these measures may take the form of (ethnic, religious, ideological) purging or cleansing.

The second element that constitutes an extremist mindset according to Cassam (2021) is the (2) attitudinal component. The most central attitude in the extremist mindset is hostility to compromise, which stems from the previously described idea about purity. Certitude about the correctness of doctrines is often sustained by dogmatism (for dogmatism, see e.g. Battaly, 2018). Any information and knowledge that is not aligned with one's own beliefs is to be rejected, as compromise is incompatible with purity and could be seen as a form of betrayal (Cassam in Sardoč, 2020). Consequently, beliefs about the intentions and attributes of the out-group become increasingly negative, to the extent that the members of the out-group are dehumanized. Through the de-humanization of others, people are able to obscure the personal agency of the victims and treat them with indifference or even target actions that cause enormous harm and suffering for them (Aly, Taylor & Karnovsky, 2014; Maynard, 2014).

The third element constitutive of the extremist mindset in Cassam's depiction (2021) is the (3) emotional component. Extremist groups typically regard their own group as superior and more human or worthy than others (Cassam, 2021; Maynard, 2014; see also Womick et al., 2019). Preoccupations about persecution evoke strong emotions, such as self-pity, uncertainty, fear and hate towards the out-group and consequently attitudes toward the out-group become increasingly toxic.

The fourth component of the extremist mindset relates to certain (4) ways of thinking. In contrast to openness and flexibility, the extremist mindset is characterized by closed-mindedness and dogmatism (Cassam, 2020, 2021). The ways of accessing and

interpreting knowledge are typically distorted and make the mind hostile towards compromise and any alternative views (Cassam, 2020, 2021). Espousal of various conspiracy theories where, for example, one's in-group is under threat because the out-groups are engaged in secret actions against one's in-group is also a typical feature of the extremist mindset. Especially for people experiencing heightened feelings of uncertainty, conspiracy theories may provide simple explanations and answers for their questions and unsolved problems (Poon, Chen & Wong, 2020; Kruglanski et al., 2019; Hogg, 2019; Berger, 2018).

Resilience at the Threshold of Adversity

If the rationalized motivations for radicalization are multiple, they are variously associated with a quest to restore significance (Kruglanski et al., 2019) or perceived grievances or other uncertainty triggering elements on societal, community or individual levels (Hafez & Mullins, 2015; Vergani, Iqbal, Ilbahar & Barton, 2018; Hogg, 2019) Most of these elements, however, are shared by millions of other people, who, despite them, do not radicalize. This is because individuals respond to adversity and challenging situations differently, not only depending on the resilience resources available to them, as discussed in the previous section (Greene, 2009), but also depending on their cognitive processes and skills. According to Albert Ellis (1991), experiences of adversity do not cause emotional responses in individuals *per se*, but instead it is their beliefs that produce the reaction. In other words, one's emotional response depends on the meaning one puts on the event. Depending on one's cognitive processes, beliefs may be irrational and illogical, and cause unhealthy emotional and behavioral consequences. Behind irrational thinking are cognitive distortions, which refer to the natural tendencies of the brain to make mental shortcuts and save time and energy in the bustle of the everyday life. In this sense they may be helpful, but when overridingly powerful, cognitive distortions make people prone to errors in judgment (Petty & Cacioppo, 1996). Cognitive distortions obstruct the accuracy of perception and interpretation of events and thus impact the quality and contents of one's beliefs (Maynes, 2015; Beck, 1963; Barriga, Hawkins & Camelia, 2008; Ellis, 1991). Cognitive distortions are of relevance in the context of PVE-E, as they may lead to dogmatic, black-and-white thinking and non-resilient emotional and behavioral responses (Ellis, 1991; Greene, 2009).

Examples of typical cognitive distortions related to radicalization processes are, for example, *negativity bias*, i.e. the propensity to attend to, learn from, and use negative information far more than positive information (Vaish, Grossman & Woodward, 2008). Negativity bias explains why people are more likely to notice threats than possibilities in different situations. It accounts for prejudices about out-groups, as attention is easily drawn to negative aspects and the cons related to their presence. *Mental filtering* and *confirmation bias* refer to the tendency to find complementary arguments in favor of one's own conclusions. It makes people focus on experiences or information that support and confirm their existing beliefs and disregard all alternative and contradictory information. Another cognitive distortion that may intensify radicalization

is *catastrophizing*, i.e., the tendency to ruminate on worst-case scenarios. Catastrophizing prevents individuals from making accurate evaluations of the situation, makes them underestimate their own capacities to cope, and enhances perceived threats. This may make people more prone to seek support from like-minded people and guidance from strong leaders. Finally, the *false consensus bias* accentuates the tendency to believe that one's beliefs are widely shared by others, and thus strengthens the conviction that they are accurate and legitimate. The false consensus bias is typically exploited in the rhetoric of extremist propaganda and recruiters who want to give the impression that they speak and act on behalf of a large population (e.g., Mercier & Sperber, 2011; Burns, 1989).

In short, distortions in cognitive processes interfere with rational thinking, obstructing the ways knowledge is accessed, assessed and applied. They may partly account for, for example, intergroup conflict by the way they bias information seeking, which leads to skewed information and consequently, motivates interpretations about in-groups and out-groups (Derreumaux, Bergh, & Hughes, 2020). Cognitive distortions may also increase dogmatism by the way they hinder one's willingness to engage seriously with alternatives to beliefs one already holds (Battaly, 2018; Maynes, 2015; Beck, 1963; Barriga, Hawkins & Camelia, 2008; Ellis, 1991). A recent study (Zmigrod et al., 2021) evaluated the relationship between individuals' cognition and their ideological inclinations and found similarities between individuals' cognitive dispositions and their political and social attitudes. The findings revealed that people with extremist attitudes were prone to dogmatism and tended to think about the world in black-and-white terms (Zmigrod et al., 2021). Another study on dogmatic believers and dogmatic atheists found that regardless of the person's religiosity or atheism, the stronger dogmatic beliefs people hold, the more prejudices they have towards people or groups who violate their important values or beliefs and thus pose a threat to their worldviews. Dogmatic beliefs thus seem to serve as a cognitive response to uncertainty and the need for coherence and clear-cut answers. (Kossowska, Czernatowicz-Kukuczka & Sekerdej, 2017).

In the psychological sense, radicalization would thus refer to a process whereby – in quest of satisfying a psychological need – one's thoughts and feelings focus intensively around one identity, narrative and/or social network and whereby one's mindset becomes characterized by inflexibility and dogmatism. This type of development would describe a problematic adjustment (at least from society's point of view) to the demands of the situation and a breaking point, in which one's capacity to cope with adversity – the threshold of adversity – exceeds one's skills (Greene, 2009), thereby heightening the risk of radicalization and violence.

Discussion: Pedagogical considerations

The psychology and epistemology of individuals with extremist mindsets – characterized by dogmatism, closed-mindedness and distorted interpretations of reality – could be thought of as epitomizing the antithesis of PVE-E. It could, then, be argued

that resilience against radicalization and violent extremism manifests in an ability to keep the mind open, reflexive and flexible. In order to develop these qualities, an important step to be taken first, for educators and students alike, is to become aware of one's own epistemic foundation, in other words, engage in a metacognitive practice. Metacognition refers to 'thinking about thinking' (Maynes, 2015; Ellis, 1991) and could be thought of as 'learning to communicate with oneself the way one communicates with others' (Thomas, 2021).

Ellis' postulations about rational thinking suggest that instead of believing what one sees, actually 'what one believes is what s/he sees' (Ellis 1991). Similarly, Anaïs Nin (1961) states 'We don't see things as they are, we see them as we are.' In terms of PVE-E, it is thus essential to orient students toward a deeper level thinking that allows them to access the collective referents that shape the way their thoughts and actions are formed in relation to their personal histories and through social interaction with others. This type of metacognitive introspection comes close to what de Oliveira Andreotti (2014) calls self-reflexivity. Self-reflexivity refers to the abilities to recognize, analyze, justify, and adjust – if needed – one's own values, prejudices and beliefs that shape the way the world is perceived (de Oliveira Andreotti, 2014). The notion 'reflexive' refers to introspection and self-awareness. It denotes an understanding of the role of the self or one's in-group in the creation of 'truth' and the recognition of how one's personal beliefs, experiences and cognitive distortions shape one's worldview and the ways one perceives and interprets others and surrounding phenomena (Berger, 2015). Self-reflexivity is an educational pre-requisite for fostering open-mindedness and cognitive flexibility, as it makes students more aware of their unconscious preoccupations, emotions, attitudes, and thinking styles.

Open-mindedness, as a pedagogical objective in PVE-E, does not simply refer to the acceptance of the other, but to a state of mind that is conducive to the gaining and applying of knowledge (Rousseau & Foxen, 2010). According to Dewey (1933), open-mindedness may be defined as a 'freedom from prejudice, partisanship, and other such habits as close the mind and make it unwilling to consider new problems and entertain new ideas' (p. 30). Baron (2008) refers to it as 'consideration of new possibilities, new goals, and evidence against possibilities that already seem strong' (p. 200). Cognitive flexibility here refers to perspective taking, problem solving and critical thinking, i.e. to the ability to look at things from multiple vantage points, identify and challenge the perhaps irrational beliefs one has about the situation or the people involved and try different strategies to overcome the challenging situation in order to meet the demands it is imposing (Ellis, 1991). The development of metacognitive skills instills debiasing habits in students' thinking and helps them become aware of the unique way they perceive and interpret their surroundings, obtain and evaluate knowledge, form their beliefs and react to these emotionally and behaviorally (Maynes, 2015; Battaly, 2018; Weil et al., 2013; Baron, 2008).

In terms of countering the extremist mindset, which is often emotionally charged (Cassam, 2019), it is important to take feelings into account, as well. Emotions,

triggered by (ir)rational beliefs, are powerful drivers of decision-making and behavior (Ellis, 1991). Emotions may get in the way of rational thinking (Greene, 2009; Ellis, 1991), and can thus be used as a radicalizing tool by various extremists actors, for example in online contexts (Waldek, Droogan & Lumby, 2021). Therefore, we would like to add to the description of metacognition as ‘thinking about thinking’ a reference to ‘thinking about feeling’. Children and youth, who can recognize and manage their emotions in situations of adversity, tend to respond to problems with more thought and less emotion, which increases the likelihood of more resilient and peaceful outcomes (Greene, 2009; Weil et al., 2013).

For successful prevention work, however, it is necessary for educators to undergo thorough self-reflection too and to become aware of their own values, worldviews and attitudes that act as filters and lenses for how they interpret the phenomena related to diversities within society and the student body (Feucht, Lunn-Brownlee & Schraw, 2017; Benjamin et al., 2021). Otherwise, these implicit biases can lead to errors in perception and interpretation of their students’ actions and utterances (De Souza, 2016; Feucht, Lunn-Brownlee & Schraw, 2017). In order to prevent the development of extremist mindsets in students, educators need to become aware of their own epistemic foundations first – not to overcome them, but at least to find ways to reduce their harmful effects (Cassam, 2019).

Open Conclusions

The aim of this article has been to discuss the notion of resilience in the context of prevention of radicalization and violent extremism through education (PVE-E). Framing the *extremist mindset* as an avoidable outcome, we suggest that resilience against radicalization and violent extremism becomes manifest in mindsets that are characterized by self-reflexivity, open-mindedness and cognitive flexibility. The concept of the extremist mindset helps us understand the psychology and epistemology of radicalized individuals and this understanding may facilitate the development of pedagogical tools through which PVE-E strategies and objectives can be supported. Taking into account the psychological needs, motivations and social aspects that are central in the radicalization processes, our conceptual ‘threshold of adversity’ model offers a starting point to the examination of the notion of resilience in the particular context of PVE-E.

To foster this type of resilience in education, the development of metacognitive skills needs to be a central pedagogical objective. The ability to analyze one’s own thinking and feelings enables educators and students to become aware of their own epistemic foundations and the person-specific ways knowledge is obtained, evaluated and internalized. Metacognitive practice helps them understand the way this impacts their own beliefs, emotions and behaviors, and those of others. Metacognitive skills, along with educational inclusivity and support (Benjamin et al., 2020, 2021; Sjøen & Jore, 2019), are relevant in PVE-E, as they increase the individual’s resilience – the capacity to cope with challenges and difficulty in a more flexible way lessening the risk of tipping over the threshold (Greene, 2009).

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