Cogent Psychology

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/oaps20

Relationships between basic psychological needs and violent extremist attitudes: The mediating role of actively open-minded thinking

Walid Briki

To cite this article: Walid Briki (2022) Relationships between basic psychological needs and violent extremist attitudes: The mediating role of actively open-minded thinking, Cogent Psychology, 9:1, 2047300, DOI: 10.1080/23311908.2022.2047300

To link to this article: https://doi.org/10.1080/23311908.2022.2047300

Published online: 10 Mar 2022.

Briki, *Cogent Psychology* (2022), 9: 2047300
https://doi.org/10.1080/23311908.2022.2047300

cogent psychology

SOCIAL PSYCHOLOGY | RESEARCH ARTICLE

Relationships between basic psychological needs and violent extremist attitudes: The mediating role of actively open-minded thinking

Walid Briki[1]*

Received: 28 September 2021
Accepted: 22 February 2022

*Correspondence author: Walid Briki, Qatar UniversityWalid Briki, College of Education, Doha, 2713 Qatar
Email:wbriki@qu.edu.qa

Reviewing editor:
Andrea Abele, Psychology, University of Erlangen-Nuernberg: Friedrich-Alexander-Universitat Erlangen-Nurnberg, Germany

Additional information is available at the end of the article

Abstract: Although violent extremist attitudes promote extremist violence, little is known about the process through which these attitudes develop. Therefore, the present study attempted to advance knowledge of their development by exploring the relationships between three basic psychological needs (competence, relatedness, and autonomy), four dimensions of actively open-minded thinking (dogmatism, fact resistance, liberalism, and belief personification), and violent extremist attitudes. This study also aimed at examining whether the dimensions of actively open-minded thinking could account for the relationships between psychological needs and violent extremist attitudes. Five hundred nine adult volunteers (254 females and 255 males, M_{age} = 33.20, SD_{age} = 12.31) answered online questionnaires that assessed psychological needs, actively open-minded thinking, and violent extremist attitudes. I built and analyzed two structural equation models, and the results revealed that relatedness satisfaction negatively predicted violent extremist attitudes through experiencing lower levels of belief personification (i.e., dichotomized mode of thinking opposing "me/us" to "them") (Model 1), while relatedness frustration positively predicted violent extremist attitudes through experiencing enhanced sense of belief personification (Model 2). Finally, this study

ABOUT THE AUTHOR

I am a French licensed psychologist and a university professor in psychology. I received my Ph.D. in 2012 and earned the "habilitation" to direct research in psychology in 2021. My scientific endeavors are rooted in the fields of social psychology, sport psychology, and motivation science. One of my interests concerns the development of social cognitions that promote task achievement, mental health, and social peace. The conception of this study emerged in response both to the recent deadly terrorist attacks perpetrated in Europe, notably in France (e.g., Paris, Nice), by young adults who were radicalized to religious fanaticism, and to the perpetration of racist attacks against citizens based on their religious belongingness (e.g., against Muslims or Jews). The goal of this study was to advance knowledge of the psychosocial processes that underly extremist violence in order to better combat it through the adoption of adapted psychological strategies.

PUBLIC INTEREST STATEMENT

In psychology, we know that extremist violence (e.g., racist or terrorist attacks) is promoted by violent extremist attitudes. However, little is known about how these attitudes develop. In this paper, I formulate the hypothesis that psychological distress, which can be caused by the frustration of basic psychological needs, harms the capability to think properly thereby leading to develop hostile attitudes toward others. The study supports this view by showing that the frustration of the fundamental need to belong and to be accepted by others, namely the "need for relatedness", facilitates the development of violent extremist attitudes, and that this effect can be accounted for by the development of a hostile reasoning consisting in categorizing people into two opposite sides ("*They're on my side*" *vs.* "*They're on the enemy's side*") based on their ideology. Finally, the study incites to conceive psychosocial and cognitive interventions as preventive strategies against radicalization to extremist violence.

highlighted the importance of satisfying people's need for relatedness and helping them counteract the development of binary attitudes toward others, as preventive strategies against radicalization to violence.

Subjects: Sociology & Social Policy; Psychological Science; Social Psychology; Cognitive Psychology

Keywords: need for relatedness; critical thinking; belief personification; violence

1. Introduction

Violent extremist attitudes, which can be defined as "beliefs that justify or endorse violence to achieve social, political, religious, or ideological goals" (Nivette et al., 2021, p. 2–3), contribute to the appearance of extremist violence (Wolfowicz et al., 2020). Such attitudes develop through a process, named "radicalization" by Nivette and colleagues (Nivette et al., 2021, 2017), that leads people to consider extremist violence (e.g., committing attacks, kidnapping people) as an effective means to eradicate an important threat (e.g., Agnew & Brezina, 2019). In the present study, I attempted to identify psychosocial factors of violent extremist attitudes through the scope of general strain theory (e.g., Agnew & Brezina, 2019) and self-determination theory (e.g., Ryan & Deci, 2019).

1.1. Psychological needs and violent extremist attitudes

According to general strain theory (e.g., Agnew, 2015; Agnew & Brezina, 2019), violent extremist attitudes reflect a cognitive and affective pattern that can emerge in response to strain, which refers to the experience of important losses or failures in situations of low personal control and/or injustice. In that regard, violent extremist attitudes can take the form of a corrective pattern thought to recover an equitable situation. Evidence of this theory can be provided by studies showing that self-uncertain people identified themselves more strongly with extremist groups and supported more strongly the perpetration of extremist violence (Hogg & Adelman, 2013; Hogg et al., 2013, 2010; see also, Hogg, 2021 for a review). In the same vein, authors revealed that psychological distress, caused by continuous exposure to daily political violence, led to undermine peaceful attitudes (Hirsch-Hoefler et al., 2016). In all, general strain theory and studies suggest that psychological distress, caused by the frustration of innate psychological needs (e.g., need for control, need for safety), could incite people to support the use of violence.

A largely evidenced framework that addresses the consequences of the satisfaction and dissatisfaction of psychological needs on human functioning is Deci and Ryan's self-determination theory (e.g., Deci & Ryan, 2008; Ryan & Deci, 2019). According to the theory, when people's needs for competence (i.e., need to reach outcomes and master one's activities), relatedness (i.e., need to belong and to be accepted by others), and autonomy (i.e., need to control one's behavior and to act in line with personal standards and values) are satisfied, people would be autonomously motivated and would display adaptive psychological responses, such as non-defensiveness, openness, flexibility, and well-integrated personal identities (Ryan & Deci, 2019; Weinstein et al., 2011). By contrast, the theory assumes that when people's needs are frustrated, people would be either control-motivated (i.e., they experience the feeling of being controlled by internal or external pressures) or impersonally motivated (i.e., they experience disinterest, detachment, and passivity), and would display signs of defensiveness, alienation, mental rigidity, and conflictual personal identities (Ryan & Deci, 2019; Weinstein et al., 2011). Combining general strain theory and self-determination theory, I assume that violent extremist attitudes would result from the experience of psychological distress caused by the dissatisfaction of one's basic psychological needs.

1.2. Mediating role of actively open-minded thinking

Based on self-determination theory, research found that autonomously motivated people exerted more cognitive efforts and displayed higher flexibility, thus leading to deeper processing and

conceptual elaborations (Jang et al., 2012; Jang, Kim et al., 2016; Jang, Reeve et al., 2016). Such cognitive benefits would be due to the capability of autonomous functioning to promote self-regulatory processes (e.g., Grolnick & Ryan, 1987; Legault & Inzlicht, 2013). Grolnick and Ryan (1987) observed that autonomously motivated people showed enhanced cognitive processing, conceptual understanding, and mental flexibility, as compared to control-motivated people. Additionally, Legault and Inzlicht (2013) reported that trait autonomy and state-induced autonomy were associated with a lower number of mistakes, which appeared to be accounted for by a higher responsiveness to mistakes, suggesting that the satisfaction of needs would enhance cognitive performance *via* experiencing higher responsiveness to negative performance feedbacks. In other words, the satisfaction of needs would promote cognitive flexibility and active open-mindedness. In the same vein, compensatory control theory (e.g., Kay et al., 2008) posits that people tend to adopt rigid mental functioning and simplistic reasoning when they experience control reduction in order to restore a sense of perceived control over themselves and their environment. Empirical studies supported this prediction by showing that people low in personal control reported higher preferences for ideological and conspiracy theories than did people high in personal control (e.g., Goode et al., 2017; Rutjens et al., 2010).

Dual-process theories of reasoning (Evans, 2008, 2011; Evans & Stanovich, 2013a, 2013b) presume that reasoning encompasses two sorts of processing, namely Type 1 (producing fast, intuitive, associative, and automatic thinking) and Type 2 (producing slow, deliberative, and reflective thinking). Actively open-minded thinking is thought to belong to Type 2 processing, and thus to promote cognitive performance by reducing biased judgments and mistakes in decision-making (Baron & Sullivan, 2018; Evans & Stanovich, 2013a, 2013b). Actively open-minded thinking is defined as "the tendency to evaluate arguments and evidence without undue bias from one's own prior beliefs" (Mellers et al., 2015, p. 3). Thus, it refers to the disposition to think reflectively and involves the capability to override "myside" bias (i.e., tendency to generate arguments supporting one's own opinions and beliefs). Therefore, people high in actively open-minded thinking would be motivated to put effort into their thinking ("active" mindset) by seeking alternatives that challenge their own views ("open-minded" mindset), whereas people low in actively open-minded thinking would tend to defend their own views and to exert less effort to examine evidence. Actively open-minded thinking is characterized by two knowledge-related dimensions, such as dogmatism (i.e., propensity to stick to one's beliefs and to adopt no opposition willingly) and fact resistance (i.e., propensity to resist to evidence-based information), and two people-related dimensions, such as liberalism (i.e., propensity to adopt tolerant attitudes toward others) and belief personification (i.e., propensity to judge and categorize people based on their opinions; e.g, Svedholm-Hakkinen & Lindeman, 2018).

1.3. Research overview

This study aimed at exploring the relationships between three basic psychological needs (competence, relatedness, and autonomy), four dimensions of actively open-minded thinking (dogmatism, fact resistance, liberalism, and belief personification), and violent extremist attitudes. This study also aimed at examining whether the dimensions of actively open-minded thinking could account for the relationships between the psychological needs and violent extremist attitudes. Based on the above-mentioned rationale, I assume that the satisfaction (or frustration) of psychological needs can increase (or decrease) self-determined perceptions (e.g., personal control) and motivation toward deliberative and reflective thinking (e.g., actively open-minded thinking). Therefore, I suggest that the satisfaction (or frustration) of psychological needs might decrease (or increase) violent extremist attitudes through enhancing (or reducing) actively open-minded thinking.

To examine this general hypothesis, I built and analyzed two structural equation models, with Model 1 and Model 2 involving constructs related to need satisfaction and need frustration, respectively, as independent variables. I separated both sorts of variables to avoid any multicollinearity problem when putting all constructs within in a same model (see, Chen et al., 2015). Based on the general hypothesis, I formulated the following expectations:

Relationships between variables: Any need satisfaction (or need frustration) construct should be negatively (or positively) related to dogmatism, fact resistance, belief personification, and violent extremist attitudes, and positively (or negatively) related to liberalism. Furthermore, because violent extremist attitudes inherently refer to attitudes toward others, I expect such attitudes to be related to people-related dimensions of actively open-minded thinking – i.e., negatively related to liberalism and positively related to belief personification. I remained exploratory on the relationships between the knowledge-related dimensions of actively open-minded thinking (i.e., dogmatism and fact resistance) and violent extremist attitudes.

Mediating effects: Liberalism and belief personification should account for the negative (or positive) relationship between need satisfaction (or need frustration) and violent extremist attitudes. No expectations regarding the mediating effect of dogmatism and fact resistance were formulated.

2. Method

2.1. Participants

Five hundred nine individuals, recruited from the United States (254 females, 49.9%, and 255 males, 50.1%; M_{age} = 33.20, SD_{age} = 12.31, from 18 to 78 years old), voluntarily participated in the study. To take part in the study, they had to be equal to or above 18 years old. They were recruited from a crowdsourcing online platform (ClickWorker), and they reported to be African American (*n* = 67, 13.2%), Asian American (*n* = 40, 7.9%), Caucasian American (*n* = 329, 64.6%), Hispanic/Latino American (*n* = 42, 8.3%), or other (*n* = 31, 6.1%).

2.2. Study design and procedure

I conducted this study in accordance with the Declaration of Helsinki. Before making the decision to take part in the study, participants read information about the study. Firstly, they read that the goal of the study was to explore the relationships between feelings and attitudes, and that their participation would consist in answering several questions. Secondly, they read that participants' data would remain anonymous and confidential, and that they would be securely stored. Thirdly, they read that every participant would receive a compensation of 0.30 USD after taking part in the study—importantly, they were asked not to take part in the study if they felt uncomfortable with this compensation. When they accepted to partake in the study, they had to provide their online informed consent. Lastly, when they agreed to respond to the questions, they were reminded that their responses would be completely anonymous and confidential, and thus they were encouraged to answer the questions honestly and spontaneously. The volunteers started answering the questionnaires in the following order: (a) demographics, (b) psychological needs, (c) actively open-minded thinking, and (d) violent extremist attitudes. After completing the survey, they were thanked for their contribution to the study.

2.3. Measures

2.3.1. Basic psychological needs

I used the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS; Chen et al., 2015) to assess participants' psychological needs. The questionnaire was composed of six subscales (i.e., autonomy satisfaction, relatedness satisfaction, competence satisfaction, autonomy frustration, relatedness frustration, and competence frustration), which included four items each. One item example for autonomy satisfaction was "*I feel a sense of choice and freedom in the things I undertake*" (α = .78). One item example for relatedness satisfaction was "*I feel that the people I care about also care about me*" (α = .88). One item example for competence satisfaction was "*I feel capable at what I do*" (α = .90). One item example for autonomy frustration was "*I feel forced to do many things I wouldn't choose to do*" (α = .81). One item example for relatedness frustration was "*I feel excluded from the group I want to belong to*" (α = .86). One item example for competence

frustration was "*I feel insecure about my abilities*" (α = .87). The items were assessed on a 5-point Likert-type scale ranging from "1" ("*completely untrue*") to "5" ("*completely true*").

2.3.2. Actively open-minded thinking

I used Svedholm-Hakkinen and Lindeman's (2018) multidimensional scale (AOT17) to assess actively open-minded thinking, which represents a shortened version of the AOT41 (Stanovich & West, 1997). The AOT17 is composed of the 5-item dogmatism subscale ("*I believe that loyalty to one's ideals and principles is more important than 'open-mindedness'*", α = .78), the 3-item fact resistance subscale ("*One should disregard evidence that conflicts with your established beliefs*", α = .80), the 3-item liberalism subscale ("*A person should always consider new possibilities*", α = .72), and the 3-item belief personification subscale ("*I tend to classify people as either for me or against me*", α = .68). Initially, AOT17 was composed of 17 items, but the psychometric analyses conducted by the authors led to shorten the questionnaire to 14 items. Participants rated the items on a 6-point Likert-type scale ranging from "1" ("*strongly disagree*") to "6" ("*strongly agree*").

2.3.3. Violent extremist attitudes

Violent extremist attitudes were assessed *via* the 4-item Violent Extremist Attitudes Scale (Nivette et al., 2017; e.g., "*It's sometimes necessary to use violence, commit attacks, or kidnap people to fight for a better world*", α = .86). Participants answered the items on a 4-point Likert-type scale ranging from "1" ("*fully untrue*") to "4" ("*fully true*").

3. Results

3.1. Relationships between variables

To examine the relationships between all the variables under study, I performed Pearson's *r* correlation analyses (IBM SPSS 26 software) (small effect: r = .10 to .29, moderate effect: r = .30 to .49, large effect: r = .50 to 1; see, Cohen, 1992). Descriptive statistics and bivariate correlation results are reported in Table 1. Firstly, the correlation analyses showed that: (a) all need satisfaction variables were positively related to liberalism (r = .16 to .21, p < .001) and negatively related to violent extremist attitudes (r = −.10 to −.13, p < .05); (b) relatedness satisfaction was negatively related to belief personification (r = −.17, p < .001); and (c) autonomy satisfaction was positively related to dogmatism and fact resistance (r = .16, p < .001; see, Table 1). Secondly, the analyses revealed that: (a) all need frustration variables were positively related to dogmatism (r = .12 to .23, p < .01), belief personification (r = .30 to .45, p < .001), and violent extremist attitudes (r = .20 to .31, p < .001); and (b) relatedness frustration was positively related to fact resistance (r = .11, p < .05). Thirdly, the analyses revealed that dogmatism and belief personification were positively related to violent extremist attitudes (r = .13 to .29, p < .001).

3.2. Structural equation models

I computed analyses of structural equation model using IBM SPSS AMOS 26 software (covariance-based structural equation model, CB-SEM) to evaluate path and mediation analyses (bootstrap samples = 5,000; bias-corrected confidence intervals = 95). Although CB-SEM is best suited for confirmatory study (theory confirmation; e.g., Barroso et al., 2010), I employed it to explore relationships between several variables (theory building). To assess the structural equation models, I used the following fit indices: The chi-square (χ^2), root mean square error of approximation (RMSEA), goodness of fit index (GFI), comparative fit index (CFI), and normed fit index (NFI). While CFI and NFI represent relative fit indices, χ^2, RMSEA, and GFI are absolute fit indices that assess the degree of overall fit of a model. The GFI, CFI and NFI should be 0.95 or higher, while the RMSEA should be 0.06 or lower for acceptable model fit (e.g., Hu & Bentler, 1999; Tabachnick & Fidell, 2007). The path values presented in the results are standardized coefficients (see, Tables 2–5, and Figures 1 and 2).

Table 1. Descriptive statistics and Pearson's *r* correlations for all variables

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10
1. Autonomy satisfaction	3.81 (0.74)	–									
2. Competence satisfaction	4.03 (0.83)	0.55***	–								
3. Relatedness satisfaction	4.13 (0.83)	0.44***	0.44***	–							
4. Autonomy frustration	2.99 (0.92)	−0.42***	−0.33***	−0.16***	–						
5. Competence frustration	2.44 (1.05)	−0.36***	−0.58***	−0.34***	0.49***	–					
6. Relatedness frustration	2.02 (0.97)	−0.26***	−0.29***	−0.51***	0.42***	0.54***	–				
7. Dogmatism	2.93 (1.10)	0.16***	0.05	0.02	0.12**	0.12**	0.23***	–			
8. Fact resistance	2.74 (1.31)	0.16***	0.08	0.07	0.04	0.05	0.11*	0.61***	–		
9. Liberalism	4.75 (0.96)	0.16***	0.21***	0.16***	−0.01	−0.06	−0.07	−0.36***	−0.28***	–	
10. Belief personification	3.02 (1.23)	−0.05	−0.08	−0.17***	0.30***	0.34***	0.45***	0.19***	0.08	0.02	–
11. Violent extremist attitudes	1.89 (0.79)	−0.13**	−0.11*	−0.10*	0.20***	0.24***	0.31***	0.13***	0.08	−0.08	0.29***

Note. The significance thresholds for two tailed tests are: *** means $p < .001$, ** means $p < .01$, and * means $p < .05$.

cogent psychology

3.2.1. Model 1

The investigated model yielded the following fit indices: χ^2 (6, N = 509) = 353.02, p < .001; RMSEA = .34 [.31, .37], p < .001; GFI = .86; CFI = .56; NFI = .56. Autonomy satisfaction positively predicted dogmatism (β = .29, p < .001) and fact resistance (β = .28, p = .003), but negatively predicted violent extremist attitudes (β = −.11, p = .047; see, Tables 2 and 3, and Figure 1). Competence satisfaction positively predicted liberalism (β = .17, p = .006), while relatedness satisfaction negatively predicted belief personification (β = −.27, p < .001; see, Tables 2 and 3, and Figure 1). Belief personification positively predicted violent extremist attitudes (β = .17, p < .001; see, Tables 2 and 3, and Figure 1). Additional analyses revealed a full mediating effect of belief personification in the relationship between relatedness satisfaction and violent extremist attitudes (direct effect, p > .05; indirect effect, p < .001; see, Table 3).

3.2.2. Model 2

This model had the following fit indices: χ^2 (6, N = 509) = 318.57, p < .001; RMSEA = .32 [.29, .35], p < .001; GFI = .87; CFI = .64; NFI = .64. Autonomy frustration (β = .14, p = .026), competence frustration (β = .12, p = .045) and relatedness frustration (β = .45, p < .001) positively predicted belief personification (see, Tables 4 and 5, and Figure 2). In addition, relatedness frustration positively predicted dogmatism (β = .27, p < .001), fact resistance (β = .15, p = .044), and violent extremist attitudes (β = .14, p = .002; see, Tables 4 and 5, and Figure 2). Belief personification positively predicted violent extremist attitudes (β = .11, p < .001; see, Tables 4 and 5, and Figure 2). The analyses also revealed a partial mediating effect of belief personification in the relationship between relatedness frustration and violent extremist attitudes (direct effect, p < .01; indirect effect, p < .001; see, Table 5).

4. Discussion

The aim of the present study was to explore the relationships between three psychological needs, four dimensions of actively open-minded thinking, and violent extremist attitudes, and to examine whether the dimensions of actively open-minded thinking could account for the relationships between the basic psychological needs and violent extremist attitudes.

4.1. Relatedness frustration and hostile thinking

Regarding the first purpose of the study, and as predicted, the correlation analyses revealed that autonomy satisfaction, competence satisfaction, and relatedness satisfaction were positively related to liberalism, and negatively related to violent extremist attitudes (see, Table 1). The paths analysis revealed more conservative findings: Liberalism was positively predicted by competence satisfaction only (see, Table 2 and Figure 1). Moreover, the correlation and paths analyses consistently revealed a negative link of relatedness satisfaction with belief personification (see, Tables 1 and 2, and Figure 1). Taken together, these results display consistent interrelationships between relatedness satisfaction, belief personification, and violent extremist attitudes, thus supporting the view that people are likely to develop negative attitudes toward others and to react aggressively when they repeatedly fail to satisfy their need to belong (Twenge et al., 2007, 2001; Williams, 2009).

Furthermore, and surprisingly, the correlation and paths analyses revealed that autonomy satisfaction was positively related to the two variables of knowledge-oriented critical thinking (dogmatism and fact resistance; see, Tables 1 and 2, and Figure 1). This suggests that the experience of autonomy, characterized by the feeling of freedom (e.g., Ryan & Deci, 2019), may induce a sense of cognitive comfort that would lead to inhibit the costly mental activity of knowledge-related critical thinking, thus inciting to give priority to one's own beliefs over the rigorous analysis of facts. This echoes Ford and Feinberg's (2020) view that "feeling better about politics—whether by reducing negative emotion or by increasing positive emotion—would reduce people's motivation to take action to challenge the status quo" (p. 126). Using a self-regulatory approach, Carver (2003) called "coasting" this sort of relaxing effect caused by the experience of positive

Table 2. Standardized path estimates of Model 1

Type of path	Path	*β*	SE	C.R.	*p*
Independent variable → Mediator	Autonomy satisfaction → Dogmatism	0.29	0.08	3.65	0.000
	Autonomy satisfaction → Fact resistance	0.28	0.10	2.98	0.003
	Autonomy satisfaction → Liberalism	0.06	0.07	0.93	0.353
	Autonomy satisfaction → Belief personification	0.07	0.09	0.82	0.410
	Competence satisfaction → Dogmatism	−0.05	0.07	−0.67	0.501
	Competence satisfaction → Fact resistance	−0.03	0.09	−0.30	0.764
	Competence satisfaction → Liberalism	0.17	0.06	2.73	0.006
	Competence satisfaction → Belief personification	−0.04	0.08	−0.44	0.662
	Relatedness satisfaction → Dogmatism	−0.06	0.07	−0.93	0.351
	Relatedness satisfaction → Fact resistance	0.01	0.08	0.18	0.857
	Relatedness satisfaction → Liberalism	0.09	0.06	1.51	0.130
	Relatedness satisfaction → Belief personification	−0.27	0.08	−3.68	0.000
Independent variable → Dependent variable	Autonomy satisfaction → Violent extremist attitudes	−0.11	0.06	−1.99	0.047
	Competence satisfaction → Violent extremist attitudes	−0.04	0.05	−0.69	0.493
	Relatedness satisfaction → Violent extremist attitudes	0.00	0.05	0.00	0.999

(*Continued*)

Type of path	Path	*β*	SE	C.R.	*p*
Mediator → Dependent variable	Dogmatism → Violent extremist attitudes	0.06	0.03	1.82	0.069
	Fact resistance → Violent extremist attitudes	0.02	0.03	0.63	0.526
	Liberalism → Violent extremist attitudes	−0.02	0.04	−0.52	0.600
	Belief personification → Violent extremist attitudes	0.17	0.03	6.20	0.000

emotion, signing that everything is going smooth for the individual and resulting in saving physical energy while conserving a satisfactory position or standing.

By contrast, the correlation analysis showed that autonomy frustration, competence frustration, and relatedness frustration were positively associated with dogmatism, belief personification, and violent extremist attitudes (see, Table 1). However, the paths analysis revealed that belief personification was positively predicted by autonomy frustration, competence frustration, and relatedness frustration, whereas dogmatism and violent extremist attitudes were positively predicted by relatedness frustration only (see, Table 4 and Figure 2). In all, these findings reveal links between relatedness frustration, dogmatism, belief personification, and violent extremist attitudes, thus supporting research showing that the repeated dissatisfaction of the need for relatedness could entail hostile attitudes and behaviors toward others (e.g., Twenge et al., 2007, 2001).

Furthermore, the correlation analyses revealed that the strength of the relationships of the need frustration constructs with actively open-minded thinking and violent extremist attitudes was globally stronger than that of the relationships of the need satisfaction constructs with actively open-minded thinking and violent extremist attitudes (small to moderate effects *vs*. small effects; see, Table 1). This indicates the existence of asymmetrical socio-cognitive effects in the sense that the dissatisfaction of needs appeared to be more impactful in terms of content and intensity of negative cognitions than did the satisfaction of needs in terms of content and intensity of positive cognitions. More generally, this asymmetry is consistent with the general principle that negative events have more pervasive effects than equivalent positive events (e.g., Baumeister et al., 2001). In addition, while the constructs of need satisfaction were related to mixed cognitive contents (flexible and rigid thinking), the constructs of need frustration were associated with hostile and rigid reasoning only, suggesting that the presence of need frustration would be perceived by the self as more threatening than the absence of need satisfaction. Therefore, beyond supporting the view that the fulfillment of psychological needs induces adaptive consequences in terms of mental flexibility (e.g., Legault & Inzlicht, 2013), the findings support the differentiation between need satisfaction and need frustration (Chen et al., 2015).

Table 3. Standardized direct and indirect effects of the mediation analyses for Model 1

		Autonomy satisfaction	Competence satisfaction	Relatedness satisfaction	Dogmatism	Liberalism	Fact resistance	Belief personification
Dogmatism	Direct	0.29***	−0.05	−0.06	–	–	–	–
	Indirect	–	–	–	–	–	–	–
Fact resistance	Direct	0.28**	−0.03	0.01	–	–	–	–
	Indirect	–	–	–	–	–	–	–
Liberalism	Direct	0.06	0.17**	0.09	–	–	–	–
	Indirect	–	–	–	–	–	–	–
Belief personification	Direct	0.07	−0.04	−0.27***	–	–	–	–
	Indirect	–	–	–	–	–	–	–
VEA	Direct	−0.11*	−0.04	0.00	0.06	−0.02	0.02	0.17***
	Indirect	0.03	−0.01	−0.06***	–	–	–	–

Note. VEA = violent extremist attitudes. * $p < .05$, ** $p < .01$, and *** $p < .001$ for a two-tailed test.

Table 4. Standardized path estimates of Model 2

Type of path	Path	*β*	SE	C.R.	p
Independent variable → Mediator	Autonomy frustration → Dogmatism	0.03	0.06	0.54	0.590
	Autonomy frustration → Fact resistance	−0.00	0.07	−0.05	0.961
	Autonomy frustration → Liberalism	0.04	0.05	0.72	0.472
	Autonomy frustration → Belief personification	0.14	0.06	2.23	0.026
	Competence frustration → Dogmatism	−0.02	0.06	−0.41	0.679
	Competence frustration → Fact resistance	−0.00	0.07	−0.04	0.967
	Competence frustration → Liberalism	−0.04	0.05	−0.74	0.461
	Competence frustration → Belief personification	0.12	0.06	2.00	0.045
	Relatedness frustration → Dogmatism	0.27	0.06	4.48	0.000
	Relatedness frustration → Fact resistance	0.15	0.07	2.01	0.044
	Relatedness frustration → Liberalism	−0.07	0.05	−1.22	0.222
	Relatedness frustration → Belief personification	0.45	0.06	7.36	0.000
Independent variable → Dependent variable	Autonomy frustration → Violent extremist attitudes	0.04	0.04	0.88	0.379
	Competence frustration → Violent extremist attitudes	0.05	0.04	1.18	0.238
	Relatedness frustration → Violent extremist attitudes	0.14	0.04	3.08	0.002

(*Continued*)

Table 4. (*Continued*)

Type of path	Path	*β*	SE	C.R.	p
Mediator → Dependent variable	Dogmatism → Violent extremist attitudes	0.01	0.03	0.42	0.672
	Fact resistance → Violent extremist attitudes	0.01	0.03	0.48	0.632
	Liberalism → Violent extremist attitudes	−0.04	0.03	−1.29	0.198
	Belief personification → Violent extremist attitudes	0.11	0.03	3.79	0.000

4.2. The critical mechanism of belief personification

Regarding the second purpose of the study, which consisted in examining the mediating effect of actively open-minded thinking, I built two structural equation models that focused on either need satisfaction (Model 1) or need frustration (Model 2). Interestingly, both models revealed a consistent finding: Belief personification accounted for the relationship between need for relatedness and violent extremist attitudes. Specifically, Model 1 revealed that relatedness satisfaction decreased violent extremist attitudes through experiencing less belief personification, while Model 2 revealed that relatedness frustration increased violent extremist attitudes through experiencing more belief personification. These findings suggest the view that the satisfaction (or frustration) of people's need for relatedness would prevent (or encourage) the development of extremist attitudes through the adoption of more inclusive (or exclusive) conceptions of the social world.

Belief personification refers to a dichotomized way of thinking that consists in categorizing others into two opposite sides: "With me/us" or "against me/us". This resembles the view proposed by Schwartz et al. (2009) positing that two sorts of personality outcomes would have relevance for the development of extremist identity: "Authoritarian foreclosure" and "aimless diffusion". Authoritarian foreclosed people are thought to develop rigid personal identities based on the identification with exclusionary models, while aimless-diffused people are viewed to possess little purpose in life, to show little engagement in the development of their personal identities, and to be inclined to adhere to purposeful radicalized groups. According to Schwartz et al. (2009), both personality outcomes are likely to develop psychological rigidity, which is thought to produce a dichotomized mode of thinking. Following that perspective, the results suggest that anybody who is (unfairly) prevented from satisfying his or her need for relatedness is put at risk of developing personal identity deficits, thereby fostering dichotomized ways of thinking and binary attitudes toward others.

Interestingly, the profiles of authoritarian foreclosure and aimless diffusion resemble the controlled and impersonal motivation, respectively, as conceived by self-determination theory (e.g., Deci & Ryan, 2008; Weinstein et al., 2011). According to the theory, both motivations are associated with maladaptive responses, such as defensiveness, mental rigidity, passivity, and helplessness, which are thought to appear when the social environment dissatisfies people's basic psychological needs. The construct of belief personification can also be thought from the scope of social identity theory (Tajfel & Turner, 2004), which argues that people tend to develop favorable or unfavorable judgments toward the "in-

Table 5. Standardized direct and indirect effects of the mediation analyses for Model 2

		Autonomy frustration	Competence frustration	Relatedness frustration	Dogmatism	Liberalism	Fact resistance	Belief personification
Dogmatism	Direct	0.03	−0.02	0.27***	–	–	–	–
	Indirect	–	–	–	–	–	–	–
Fact resistance	Direct	−0.00	−0.00	0.15*	–	–	–	–
	Indirect	–	–	–	–	–	–	–
Liberalism	Direct	0.04	−0.04	−0.07	–	–	–	–
	Indirect	–	–	–	–	–	–	–
Belief personification	Direct	0.14*	0.12*	0.45***	–	–	–	–
	Indirect	–	–	–	–	–	–	–
VEA	Direct	0.04	0.05	0.14**	0.01	0.02	−0.04	0.11***
	Indirect	0.02	0.02	0.07***	–	–	–	–

Note. VEA = violent extremist attitudes. * $p < .05$, ** $p < .01$, and *** $p < .001$ for a two-tailed test.

cogent psychology

group" or "out-group" social category, respectively. Such social categorizations are reputed to entail hostile attitudes toward the out-group for the benefits of the in-group (e.g., Dorrough et al., 2015; Giannakakis & Fritsche, 2011). In that regard, belief personification can be viewed as the mechanism through which people engage themselves with others who share similar views, and dehumanize or persecute those who hold divergent beliefs and conceptions of the world (Giannakakis & Fritsche, 2011; Schwartz et al., 2009). The strength of this phenomenon would be amplified by uncertainty feelings about oneself and one's personal identities (Hogg, 2015a, 2015b). Therefore, belief personification might be conceived as a coping strategy that can precipitate the appearance of social and interpersonal conflicts (Agnew, 2013, 2015).

5. Conclusions and perspectives

To conclude, the present study allowed to advance knowledge of the development of violent extremist attitudes by identifying a process arranged from the need for relatedness to belief personification to violent extremist attitudes. However, this study contains limitations. Chief among them is its correlational nature, thus inciting to use longitudinal designs to examine the relationships between psychological needs, actively open-minded thinking, and violent extremist attitudes across a period of time. Other studies may also attempt to qualitatively examine how dichotomized views of others develop over time. Indeed, resituating the analysis of the relationships between the need for relatedness, belief personification, and violent extremist attitudes in a temporal dimension may help understand why the non-satisfaction or frustration of the need for relatedness can spark a negative dynamic of thinking characterized by hostile attitudes toward others. Temporal need-threat model (Williams, 2009) posits that the dissatisfaction of the need for relatedness (e.g., social rejection) does not systematically entail hostile responses toward others, but rather can generate aggressive responses when multiple attempts of relatedness restoration (*via* the application of social adjustment strategies) meet no success. Another limitation concerns the relatively poor model fit indices that characterized Model 1 and Model 2. However, instead of attempting to confirm an established theory, this study aimed at identifying a psychosocial process among a diversity of variables and relationships, thus leading to determine a preliminary model. This research process, characterized by the

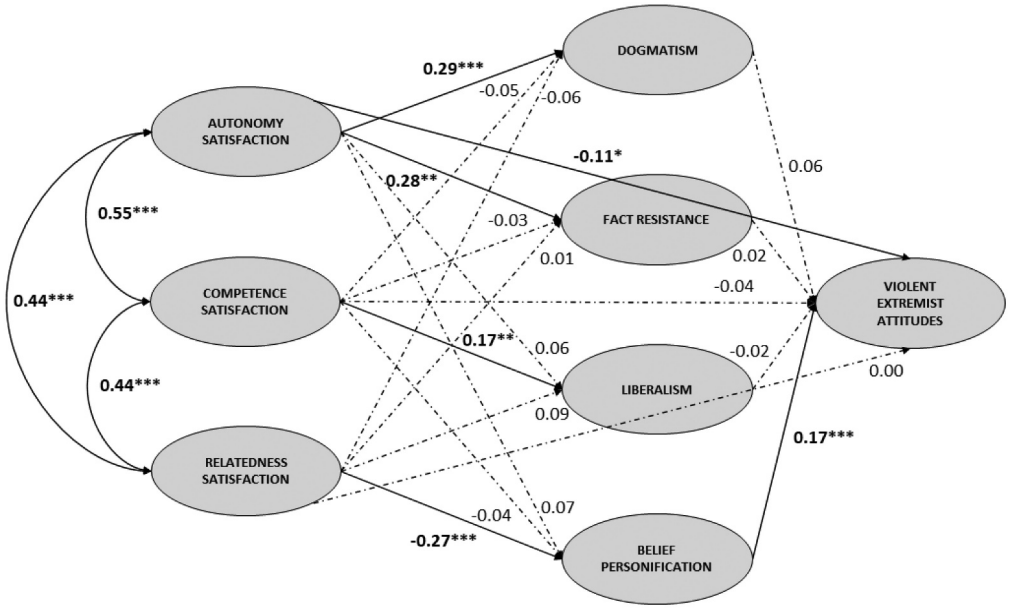

Figure 1. Structural equation model of the relationships among need satisfaction constructs, actively open-minded thinking dimensions (as mediators), and violent extremist attitudes (Model 1). All coefficients are standardized, and the solid lines indicate statistical significance. The significance thresholds for a two-tailed test are: * $p < .05$, ** $p < .01$, and *** $p < .001$.

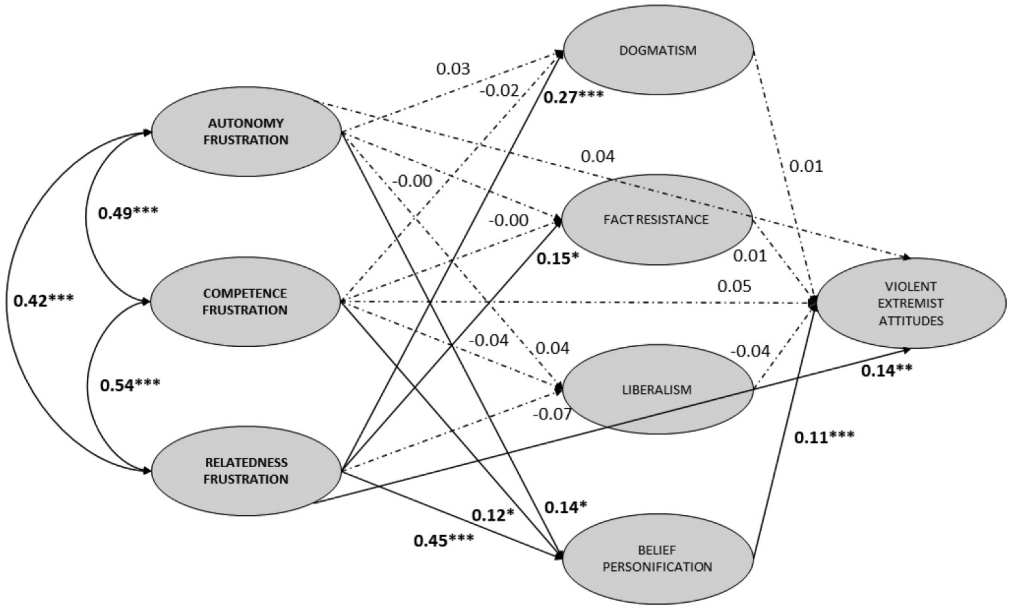

Figure 2. Structural equation model of the relationships among need frustration constructs, actively open-minded thinking dimensions (as mediators), and violent extremist attitudes (Model 2). All coefficients are standardized, and the solid lines indicate statistical significance. The significance thresholds for a two-tailed test are: * $p < .05$, ** $p < .01$, and *** $p < .001$.

identification of relevant (and less relevant) paths and relationships, accounts for the appearance of poor model fit indices (Montoya & Edwards, 2021).

This study also identified a positive relationship of autonomy satisfaction with dogmatism and fact resistance, running counter the evidenced view that the experience of personal control promotes mental flexibility and open-mindedness (e.g., Legault & Inzlicht, 2013). This also contrasts with the finding showing a positive relationship between autonomy frustration and dogmatism. Thus, the need for autonomy appeared to be positively linked to dogmatism, regardless of its satisfied or dissatisfied status. I suggest, however, that the meaning of this relationship may differ according to whether the need is satisfied or not: Once satisfied, the experience of freedom may limit the desire to critically think due to the feeling of well-being that characterizes that experience (coasting effect), while once dissatisfied it may limit critical thinking by activating a reactive restoration attempt in response to the perception of discomfort (reactive effect). Research revealed the specificity of the need for autonomy: Either it leads to its disaffection in favor of other psychological needs after being continuously dissatisfied (need abandonment effect; Sheldon & Krieger, 2007), or it leads to a reactive and defensive response consisting in acting against the autonomy of the individual immediately after its dissatisfaction (reactive autonomy effect; Koestner et al., 1999; Wilbur et al., 2021). Deriving from psychological reactance theory (Brehm, 1966) positing that people desire to free themselves from the control of others, reactive autonomy refers to a "non-reflective resistance to external control ('You can't make me!') [that occurs] in the absence of positive feelings of choice and self-determination." (Wilbur et al., 2021, p. 3). Radel et al. (2011) provided a relevant illustration of this paradoxical reactive phenomenon: "For example, if students intend to drink more because they were told not to, they are not exerting true, or reflective, autonomy. In one sense, they are deceiving themselves about their desires because they have been pressured and so they are defiant but not free." (p. 922) Reactive autonomy may explain why the frustration of the need for autonomy can foster rigid knowledge-related reasoning. However, further studies are needed to better understand the relationship between the need for autonomy (reflective *vs*. reactive autonomy) and critical thinking, and to shed the light on the potential complex role of the need for autonomy in the process of reasoning.

From an applied perspective, this study has relevance for combatting radicalization to extremist violence. It shows the importance of supporting, and especially of not frustrating, people's need for relatedness in order to prevent the development of belief personification and violent extremist

attitudes. In so doing, policymakers should build social plans considering the importance of inclusive measures to generate the perceptions that everybody is valuable and belongs to the community. For youth, they may also create inclusive spaces valuing culture, sciences, and arts where they would be incited to share their opinions and debate with eloquence under the supervision of experts in social and human sciences (e.g., psychologists, sociologists) trained in the field of (de)radicalization.

Funding
The author received no direct funding for this research.

Author details
Walid Briki[1]
E-mail: wbriki@qu.edu.qa
Andrea Abele Reviewing editor
[1] College of Education, Qatar University, Doha, Qatar.

Disclosure statement
No potential conflict of interest was reported by the author.

Data availability statement
All data, analysis code, and research materials can be shared upon request. No data were missed, and no data were excluded from the analyses.

Correction
This article has been corrected with minor changes. These changes do not impact the academic content of the article.

Citation information
Cite this article as: Relationships between basic psychological needs and violent extremist attitudes: The mediating role of actively open-minded thinking, Walid Briki, *Cogent Psychology* (2022), 9: 2047300.

References

Agnew, R. (2013). When criminal coping is likely: An extension of general strain theory. *Deviant Behavior*, *34*(8), 653–670. https://doi.org/10.1080/01639625.2013.766529

Agnew, R. (2015). Using general strain theory to explain crime in Asian societies. *Asian Journal of Criminology*, *10*(2), 131–147. https://doi.org/10.1007/s11417-014-9198-2

Agnew, R., & Brezina, T. (2019). General strain theory. In M. Krohn, N. Hendrix, G. Penly Hall, & A. Lizotte (Eds.), *Handbook on crime and deviance. Handbooks of sociology and social research*. Springer (pp. 145-160). https://doi.org/10.1007/978-3-030-20779-3_8

Baron, E., & Sullivan, J. (2018). Judging mechanistic neuroscience: A preliminary conceptual-analytic framework for evaluating scientific evidence in the courtroom. *Psychology Crime & Law*, *24*(3), 334–351. https://doi.org/10.1080/1068316x.2018.1428056

Barroso, C., Carrión, G. C., & Roldán, J. L. (2010). Applying maximum likelihood and PLS on different sample sizes: Studies on SERVQUAL model and employee behavior model. In V. Esposito Vinzi, W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares. Springer handbooks of computational statistics*. Springer. (pp. 427-447) https://doi.org/10.1007/978-3-540-32827-8_20

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, *5*(4), 323–370. https://doi.org/10.1037/1089-2680.5.4.323

Carver, C. S. (2003). Pleasure as a sign you can attend to something else: Placing positive feelings within a general model of affect. *Cognition & Emotion*, *17*(2), 241–261. https://doi.org/10.1080/02699930302294

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-deeder, J., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., Van Petegem, S., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, *39*(2), 216–236. https://doi.org/10.1007/s11031-014-9450-1

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology-Psychologie Canadienne*, *49*(3), 182–185. https://doi.org/10.1037/a0012801

Dorrough, A. R., Glockner, A., Hellmann, D. M., & Ebert, I. (2015). The development of ingroup favoritism in repeated social dilemmas. Front Psychol*Frontiers in Psychology*, *6*, 476. https://doi.org/10.3389/fpsyg.2015.00476

Evans, J. S. B. T. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology*, *59*(1), 255–278. https://doi.org/10.1146/annurev.psych.59.103006.093629

Evans, J. S. B. T. (2011). Dual-process theories of reasoning: Contemporary issues and developmental applications. *Developmental Review*, *31*(2–3), 86–102. https://doi.org/10.1016/j.dr.2011.07.007

Evans, J. S. T., & Stanovich, K. E. (2013a). Dual-process theories of higher cognition: Advancing the debate. *Perspectives on Psychological Science*, *8*(3), 223–241. https://doi.org/10.1177/1745691612460685

Evans, J. S. T., & Stanovich, K. E. (2013b). Theory and metatheory in the study of dual processing: Reply to comments. *Perspectives on Psychological Science*, *8*(3), 263–271. https://doi.org/10.1177/1745691613483774

Giannakakis, A. E., & Fritsche, I. (2011). Social identities, group norms, and threat: On the malleability of ingroup bias. *Personality & Social Psychology Bulletin*, *37*(1), 82–93. https://doi.org/10.1177/0146167210386120

Goode, C., Keefer, L. A., Branscombe, N. R., & Molina, L. E. (2017). Group identity as a source of threat and means of compensation: Establishing personal control through group identification and ideology. *European Journal of Social Psychology*, *47*(3), 259–272. https://doi.org/10.1002/ejsp.2259

Grolnick, W. S., & Ryan, R. M. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology*, *52*(5), 890–898. https://doi.org/10.1037/0022-3514.52.5.890

Hirsch-Hoefler, S., Canetti, D., Rapaport, C., & Hobfoll, S. E. (2016). Conflict will harden your heart: Exposure to violence, psychological distress, and peace barriers in Israel and Palestine. *British Journal of Political Science*, *46*(4), 845–859. https://doi.org/10.1017/S0007123414000374

Hogg, M. A. (2015a). Social instability and identity-uncertainty: Fertile ground for political extremism. In J. P., Forgas, K., Fiedler, and W. D., Crano (Eds.) In *Social psychology and politics*. (New York: Psychology Press) (pp. 307–320).

Hogg, M. A. (2015b). To belong or not to belong: Some self-conceptual and behavioural consequences of identity uncertainty. *Revista De Psicologia Social*, *30*(3), 586–613. https://doi.org/10.1080/02134748.2015.1065090

Hogg, M. A. (2021). Uncertain self in a changing world: A foundation for radicalisation, populism, and autocratic leadership. *European Review of Social Psychology*, *32*(2), 235–268. https://doi.org/10.1080/10463283.2020.1827628

Hogg, M. A., & Adelman, J. (2013). Uncertainty-identity theory: Extreme groups, radical behavior, and authoritarian leadership. *Journal of Social Issues*, *69*(3), 436–454. https://doi.org/10.1111/josi.12023

Hogg, M. A., Kruglanski, A., & van den Bos, K. (2013). Uncertainty and the roots of extremism. *Journal of Social Issues*, *69*(3), 407–418. https://doi.org/10.1111/josi.12021

Hogg, M. A., Meehan, C., & Farquharson, J. (2010). The solace of radicalism: Self-uncertainty and group identification in the face of threat. *Journal of Experimental Social Psychology*, *46*(6), 1061–1066. https://doi.org/10.1016/j.jesp.2010.05.005

Jang, H., Kim, E. J., & Reeve, J. (2012). Longitudinal test of self-determination theory's motivation mediation model in a naturally occurring classroom context. *Journal of Educational Psychology*, *104*(4), 1175–1188. https://doi.org/10.1037/a0028089

Jang, H., Kim, E. J., & Reeve, J. (2016). Why students become more engaged or more disengaged during the semester: A self-determination theory dual-process model. *Learning and Instruction*, *43*, 27–38. https://doi.org/10.1016/j.learninstruc.2016.01.002

Jang, H., Reeve, J., & Halusic, M. (2016). A new autonomy-supportive way of teaching that increases conceptual learning: Teaching in students' preferred ways. *Journal of Experimental Education*, *84*(4), 686–701. https://doi.org/10.1080/00220973.2015.1083522

Kay, A. C., Gaucher, D., Napier, J. L., Callan, M. J., & Laurin, K. (2008). God and the government: Testing a compensatory control mechanism for the support of external systems. *Journal of Personality and Social Psychology*, *95*(1), 18–35. https://doi.org/10.1037/0022-3514.95.1.18

Koestner, R., Gingras, I., Abutaa, R., Losier, G. F., Didio, L., & Gagné, M. (1999). To follow expert advice when making a decision: An examination of reactive versus reflective autonomy. *Journal of Personality*, *67*(5), 851–872851–872. https://doi.org/10.1111/1467-6494.00075

Legault, L., & Inzlicht, M. (2013). Self-determination, self-regulation, and the brain: Autonomy improves performance by enhancing neuroaffective responsiveness to self-regulation failure. *Journal of Personality and Social Psychology*, *105*(1), 123–138. https://doi.org/10.1037/a0030426

Mellers, B., Stone, E., Atanasov, P., Rohrbaugh, N., Metz, S. E., Ungar, L., Bishop, M. M., Horowitz, M., Merkle, E., & Tetlock, P. (2015). The psychology of intelligence analysis: Drivers of prediction accuracy in world politics. *Journal of Experimental Psychology. Applied*, *21*(1), 1–14. https://doi.org/10.1037/xap0000040

Montoya, A. K., & Edwards, M. C. (2021). The poor fit of model fit for selecting number of factors in exploratory factor analysis for scale evaluation. *Educational and Psychological Measurement*, *81*(3), 413–440. https://doi.org/10.1177/0013164420942899

Nivette, A., Echelmeyer, L., Weerman, F., Eisner, M., & Ribeaud, D. (2021). Understanding changes in violent extremist attitudes during the transition to early adulthood. *Journal of Quantitative Criminology*. https://doi.org/10.1007/s10940-021-09522-9

Nivette, A., Eisner, M., & Ribeaud, D. (2017). Developmental predictors of violent extremist attitudes: A test of general strain theory. *Journal of Research in Crime and Delinquency*, *54*(6), 755–790. https://doi.org/10.1177/0022427817699035

Radel, R., Pelletier, L. G., Sarrazin, P., & Milyavskaya, M. (2011). Restoration process of the need for autonomy: The early alarm stage. *Journal of Personality and Social Psychology*, *101*(5), 919–934. https://doi.org/10.1037/a0025196

Rutjens, B. T., van Harreveld, F., & van der Pligt, J. (2010). Yes we can: Belief in progress as compensatory control. *Social Psychological and Personality Science*, *1*(3), 246–252. https://doi.org/10.1177/1948550610361782

Ryan, R. M., & Deci, E. L. (2019). Brick by brick: The origins, development, and future of self-determination theory. In A. J. Elliot (Ed.), *Advances in motivation science* (Vol. 6, pp. 111–156). Elsevier Inc. https://doi.org/10.1016/bs.adms.2019.01.001

Schwartz, S. J., Dunkel, C. S., & Waterman, A. S. (2009). Terrorism: An identity theory perspective. *Studies in Conflict & Terrorism*, *32*(6), 537–559. https://doi.org/10.1080/10576100902888453

Sheldon, K. M., & Krieger, L. S. (2007). Understanding the negative effects of legal education on law students: A longitudinal test of self-determination theory. *Personality & Social Psychology Bulletin*, *33*(6), 883–897. https://doi.org/10.1177/0146167207301014

Stanovich, K. E., & West, R. F. (1997). Reasoning independently of prior belief and individual differences in actively open-minded thinking. *Journal of Educational Psychology*, *89*(2), 342–357. https://doi.org/10.1037/0022-0663.89.2.342

Svedholm-Hakkinen, A. M., & Lindeman, M. (2018). Actively open-minded thinking: Development of a shortened scale and disentangling attitudes towards knowledge and people. *Thinking & Reasoning*, *24*(1), 21–40. https://doi.org/10.1080/13546783.2017.1378723

Tajfel, H., & Turner, J. C. (2004). The social identity theory of intergroup behavior. In J. T. Jost & J. Sidanius (Eds.), *Political psychology: Key readings* (pp. 276–293). Psychology Press. https://doi.org/10.4324/9780203505984-16

Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology*, *92*(1), 56–66. https://doi.org/10.1037/0022-3514.92.1.56

Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. *Journal of Personality and Social Psychology*, *81*(6), 1058–1069. https://doi.org/10.1037/0022-3514.81.6.1058

Weinstein, N., Deci, E. L., & Ryan, R. M. (2011). Motivational determinants of integrating positive and negative past identities. J Pers Soc Psychol*Journal of Personality and Social Psychology*, *100*(3), 527–544. https://doi.org/10.1037/a0022150

Wilbur, D., Sheldon, K. M., & Cameron, G. (2021). Autonomy supportive and reactance supportive inoculations both boost resistance to propaganda, as mediated by state autonomy but not state reactance. *Social Influence*, *16*(1), 1–11. https://doi.org/10.1080/15534510.2021.1908910

Williams, K. D. (2009). Ostracism: A temporal need-threat model. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 41, pp. 275–314). Elsevier

Academic Press. https://doi.org/10.1016/S0065-2601(08)00406-1

Wolfowicz, M., Litmanovitz, Y., Weisburd, D., & Hasisi, B. (2020). A field-wide systematic review and meta-analysis of putative risk and protective factors for radicalization outcomes. *Journal of Quantitative Criminology*, *36*(3), 407–447. https://doi.org/10.1007/s10940-019-09439-4

***Cogent Psychology* (ISSN: 2331-1908) is published by Cogent OA, part of Taylor & Francis Group.**