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ABSTRACT

Women's radicalization is a pending issue in empirical research that is worthy of attention. It has been found that the role of women in international terrorism is much greater than previously thought, but we know almost nothing about the factors underlying the process that would lead them to perpetrate radicalized acts, as almost no empirical research has been carried out on the subject. In this work we aim to explore a model of radicalization of thought and action among young women. The hypothesized model included ten predictors: cultural identity, cultural discrimination, religious involvement, depressive symptoms, and schizotypal, borderline, and the Dark Tetrad traits of personality. Dogmatism was hypothesized as a mediator between these factors and the level of radicalized cognitions and behaviors. The sample comprises 643 college women (aged 18 to 29) from French universities. Our results suggest that women becoming involved in radicalization are more "dark" than "disturbed." Schizotypal, borderline, and depressive features, although being associated to radicalization, do not contribute to the model. Both the dark traits and socio-cultural factors are revealed as predictors of radicalization, while dogmatism is clearly shown as a mediator. Orientations in terms of prevention among young women are proposed.

Introduction

The issue of women and radicalization is of central concern on the European policy agenda, and further nuanced exploration and research is considered truly necessary.[1] Women are much more present in terrorism than it was thought, both in terms of proportion and in terms of the necessary role of their participation, inasmuch as the robustness and survival of the extremist organizations seem to depend to a large extent on women's work.[2] Nevertheless, very few works have approached the issue of radicalization of women,[3] and no empirical model of this process has been developed.

Religious radicalization of youth has become a subject of great interest in recent years, but, to date, little empirical research has been conducted on the individual psychological factors underlying this process. Understanding the factors that contribute to the fact that some people get to the point of committing radicalized acts is a critical issue both in preventive and deradicalization terms.[4] Radicalization is a complex multidimensional

process, and the factors that could influence it are not well known yet.[5] And we know even less about the factors influencing radicalization specifically among women. However, it must be emphasized that religious radicalization and engagement in terrorism may be influenced by different factors[6] as pointed out by Horgan:

> The factors that impinge upon the individual at each of these phases may not be necessarily related to each other and may not necessarily reflect upon each other. In other words, answering the call of one of these phases of the process may not reveal anything useful or insightful about the other.[7]

Some socio-cultural factors have been found to be related to radicalization. Cultural identity is thought to play an important role in explaining radicalization and involvement in terrorism. For example, it has been shown that individuals who rate their Muslim identity as being more important than their national or ethnic identity tend to have more positive attitudes toward jihad and martyrdom.[8] On the other hand, it has also been shown that perceived discrimination not only predicts normative beliefs about violence, but also serious physical violence perpetrated against others.[9] In accordance with this, perceived injustice and perceived group threat seem to be major determinants of radicalization of youth.[10] Religious involvement is another factor frequently evoked in religious radicalization processes, even though its actual role in this phenomenon still continues to be poorly defined.[11]

In addition to the aforementioned socio-cultural factors, and leaving aside the so-called trigger factors (such as exposure to propaganda) in order to focus on individual factors, it is considered that there would be some psychological issues (such as cognitive and psychopathological factors) contributing to radicalization.[12] It has been claimed that the radicalization of action—radicalized behaviors—would be preceded by the radicalization of thought—radicalized cognitions.[13] Moreover, it could be expected that these radicalized cognitions were facilitated by a dogmatic thinking style (characterized by closed-mindedness and intolerance). There is no empirical research on the contribution of dogmatism to radicalization, but it has been suggested on several occasions.[14] Dogmatism, which is linked to fanaticism and authoritarianism, has been found to be associated with hostility,[15] dehumanization, and increased aggression[16] toward people who hold different views and principles. Since dogmatic cognitions and attitudes have been found to be related to social identity,[17] cultural stress,[18] perceived social distance,[19] and religiosity,[20] it would be quite likely that dogmatism could mediate the effect of these socio-cultural factors on radicalized cognitions.

Models combining the contributions of psychosocial factors and personality traits have been recently requested by Hiebert and Dawson.[21] Personality traits would act as vulnerabilities that could increase the exposure to radicalization;[22] in fact, they are considered among the main psychological factors promoting this process.[23] Although it is generally accepted that there is no "terrorist personality pattern,"[24] some traits have been commonly identified in case studies of terrorists or violent extremists: It seems that they show higher levels of psychopathic, schizotypal, and depressive tendencies than those who do not engage in terrorism,[25] as well as elevated narcissistic traits, novelty seeking, and cognitive inflexibility.[26] Recently, it has been shown that personality disorder characteristics (inter alia, narcissistic, sadistic, antisocial, schizotypal, borderline, and depressive traits) significantly contributed to an integrative model of radicalization.[27]

Since a history of criminal activity is a common predictor of aggressive religious radicalization,[28] it is thought that some personality traits linked to criminality could facilitate aggressive radicalization. The Dark Tetrad of personality[29] is a constellation of four aversive personality traits: a) Machiavellianism (coldness, duplicity, instrumentality, ability to detach oneself from conventional morality, and tendency to deceive and manipulate others), b) psychopathy (impaired empathy, lack of remorse, antisociality, high impulsivity, thrill-seeking, and anxiety), c) narcissism (grandiosity, entitlement, dominance, and superiority) and d) sadism (tendency to humiliate and hurt others for enjoyment or pleasure, feeling of power and dominance by inflicting suffering on others, and gratuitous cruel or demeaning behavior towards others). The Dark Tetrad has been associated with antisocial and disruptive behaviors[30] and with experiences of schadenfreude[31] (i.e., the pleasure derived from the suffering of others). It has been hypothesized that the Dark Tetrad traits could predispose individuals to radicalization[32] and some of them have been pointed out as facilitators of this process, but there is no empirical study on this specific matter yet. Dogmatism could be mediating the influence of these "dark traits" on radicalization, given that: a) dogmatic thinking style has been found to be related to Machiavellianism,[33] b) cognitive rigidity has been linked to psychopathy,[34] c) intolerance to criticism is a common feature of narcissism, and d) authoritarianism has traditionally been theoretically associated with sadism.

We propose that, in addition to the dark traits, some psychopathological tendencies (particularly borderline,[35] schizotypal,[36] and depressive[37] ones) would be more likely to contribute to radicalization. Some features of the borderline personality disorder such as dichotomous thinking (all-or-nothing/black-or-white thinking), identity struggle (and deficient sense of self), frequent social isolation, as well as affective, cognitive, and behavioral impulsivity, may contribute to the vulnerability to radicalization. Likewise, some schizotypal traits could expedite the radicalization process: On the one hand, social isolation, unusual perceptual experiences, odd beliefs, and magical thinking are prone to give rise to abnormal religious experiences such as out-of-body experiences and intense religious moments.[38] On the other hand, stereotyped thinking, suspiciousness, and especially paranoid ideations and conspiracy beliefs about a specific social or ethnic group[39] could lay the foundation for radicalization. Regarding depressive tendencies, it has been proposed that vulnerability to radicalization would be characterized by depression, inasmuch as those showing the most sympathy for violent protest and terrorism are more likely to report depression.[40] Besides, it seems that symptoms of depression could increase the vulnerability to martyrdom.[41] Moreover, depression seems to be common among Western young people who engage in religious radicalization.[42] Dogmatism could also be mediating the influence of these "disturbed traits" on radicalization given that: a) people diagnosed with depression show greater levels of cognitive rigidity than control groups,[43] b) schizotypal traits have been associated with cognitive rigidity and dogmatism,[44] and c) the dichotomous reasoning characteristic of the borderline personality may predispose one to extremist and dogmatic thinking.

Extremist groups make great use of the Internet to recruit young people, especially using social media.[45] Therefore, nowadays, the influences for radicalization are spreading throughout the world, being able to reach young people regardless of where they live. Women tend to use online social networks more than men, so they might be more exposed to online radicalization.[46] Otherwise, radicalization is considered a growing problem in universities.[47] College students could have some vulnerabilities (such as
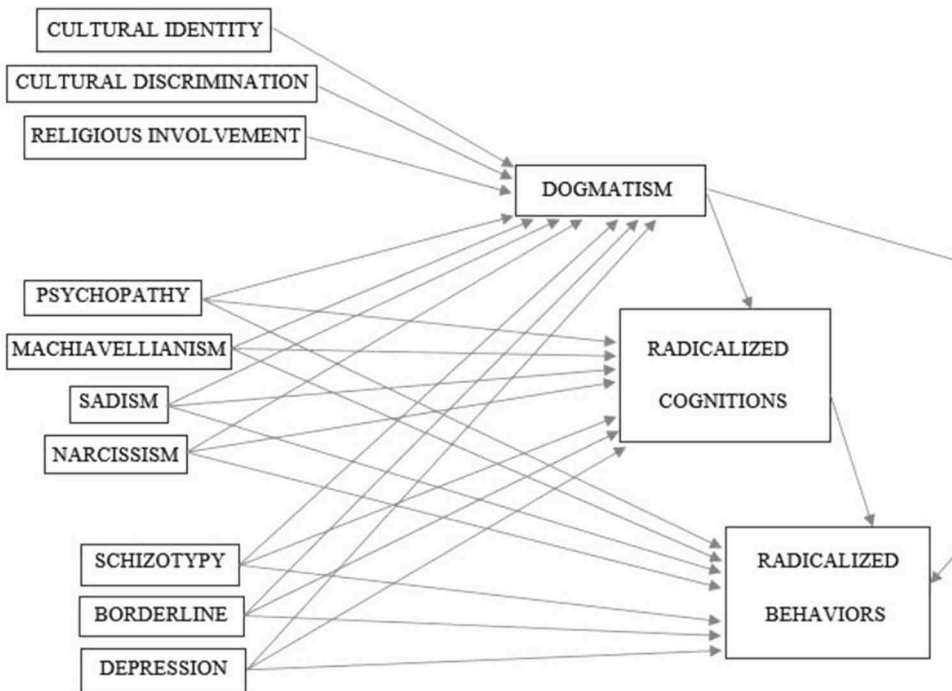
Figure 1. Hypothesized model (all drawn paths hypothesized as positive relations).

identity crises, uncertain futures, or the search for approval) which would make them more susceptible to radicalization.[48] A prevalence of high education among violent extremists and terrorists has been reported[49] and it is thought that university could be a potential site (either as a meeting point or as a birthplace) of radicalization.[50]

Our aim in the present study was to test a predictive model of radicalization of young college women, in which socio-cultural factors (cultural identity, cultural discrimination, and religious involvement) and some traits of personality (Dark Tetrad, borderline, and schizotypal), as well as depressive symptoms, would lead to radicalization through dogmatism (see Figure 1). Specifically, we hypothesized that these socio-cultural and psychopathological predictors would increase the level of dogmatism, which in turn would promote radicalized cognitions (acceptability of aggressive behavior toward individuals of other religions) and radicalized behaviors (aggressions toward individuals of other religions). As can be seen in Figure 1, we also hypothesized that the studied psychological factors would directly contribute to both types of radicalization, and that radicalized cognitions would be conductive to radicalized behaviors.

Method

Participants and procedure

An online community sample of young women was recruited by contacting the official websites of French universities. Informed consent was obtained from all participants and they were informed that answers to the questionnaires would remain confidential. No

compensation was offered to participate in the study. The participants were provided with the possibility of contacting one of the authors (PR) via email for further information or to receive a referral. The study followed the guidelines of the Helsinki declaration and ethical issues of the current research were explored at a research meeting. Personal information (e.g., age, gender) was gathered (ethnic origin and religion were not measured because French law forbids it) and participants were asked to complete self-report questionnaires online. The data provided by online methods are of at least as good quality as those provided by traditional paper-and-pencil methods, since it has been shown that Internet data collection methods (using online completion of self-report questionnaires from self-selected samples) are consistent with findings from traditional methods; and that Internet samples are as representative of the general population as traditional samples in psychology.[51]

The sample included 643 women aged between 18 and 29 (M = 20.38; SD = 1.95). The data regarding the other sociodemographic characteristics studied are listed below.

Nationality

The majority of the sample was of French nationality (94.6%) while 3.6% of the participants were of European non-French nationalities, 1% was of African nationality, 0.3% was of Middle-East nationalities, and another 0.3% was of American nationalities.

City of residence

Toulouse: 30.9%; Paris: 19.6%; Lyon: 9.8%; Marseille: 6.2%; Nancy: 5.4%; Nantes: 4.2%; Strasbourg: 3.9%; Amiens: 3.5%; Bordeaux: 3%; Reims: 2.6%; Rennes: 2%; Caen: 1.6%; Dijon 1.3%; Rouen: 1.1%. Less than 1% was living in each of the following cities: Nice, Tours, Grenoble, Montpellier, Poitiers, Clermont-Ferrand, and Lille.

Marital status

A little more than half of the sample was single (54%), while 45.5% were in a couple (but not married), and only 0.5% of the participants were married.

Study field

Human sciences (psychology, sociology, ethnology): 32.3%; laws: 14.6%; literature, foreign languages: 12.8%; scientific fields, engineering: 12.3%; economy and trade, business and communication: 9%; history, geography, political science: 8.6%; arts: 4.8%; education, pedagogy: 3.4%; architecture: 1.1%; and philosophy: 1.1%.

University status

First year of bachelor: 26.5%; second year of bachelor: 26.7%; third year of bachelor: 23.4%; first year of master: 16.5%; second year of master: 6.7%; and doctorate: 2%.

Grades of the last semester

Fail (<10/20): 7%; Pass (≥10/20 and <12/20): 25.4%; Good (≥12/20 and <14/20): 35.8%; Very good (≥14/20 and <16/20): 24.4%; and Excellent (≥16/20): 7.4%.

Measures

For all scales used in this study, high scores indicate a high level of the variable. Scale ranges and Cronbach's alpha for each measure are displayed in Table 1.

Cultural identity was measured using the French version[52] of the Multigroup Ethnic Identity Measure[53] which assesses the developmental, cognitive, and emotional components of cultural identity through 12 items (e.g., "I am very proud of my cultural background") rated on a 5-point Likert scale.

Cultural discrimination was assessed using the French version[54] of the Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale.[55] This instrument measures perceived cultural discrimination among people whether they are immigrant or host culture members. The scale comprises 10 items (e.g., "I feel uncomfortable when others make jokes about my heritage culture") rated on a 5-point Likert scale.

Religious involvement was measured using the Religiosity and Spirituality Scale for Youth,[56] a 37-item questionnaire with two factors, faith-based coping (e.g., "Praying gives me strength when I'm upset") and religious social support/activities (e.g., "I spend time with persons who share my religious beliefs"). Items were rated on a 4-point Likert scale.

Machiavellian traits were assessed using the French version[57] of the self-report Machiavellianism Inventory,[58] composed of 20 items (e.g., "It is safest to assume that all people have a vicious streak and it will come out when they are given a choice") rated on a 7-point Likert scale.

Psychopathic traits were measured using the French version[59] of the Youth Psychopathic traits Inventory,[60] which is composed of three subscales measuring affective (callous-unemotional), narcissistic, and impulsive dimensions of psychopathy. We used only the 15-item affective subscale measuring callousness, unemotionality, and remorselessness traits which are the core features of psychopathic traits[61] (e.g., "I have the ability not to feel guilt and regret about things that I think other people would feel guilty about"). Moreover, narcissism and impulsivity were assessed by scales measuring narcissistic and borderline traits. Items were rated on a 4-point Likert scale.

Narcissistic traits were measured using a French version[62] of the 16-item self-report Narcissistic Personality Inventory[63] designed to measure narcissism in nonclinical populations. Each item consists of two conflicting proposals between which the participant must choose (e.g., "I like to be the center of the attention" vs. "I prefer to blend in with the crowd").

Sadistic traits were assessed using the French version[64] of the Short Sadistic Impulse Scale,[65] a self-report inventory relating to harming behaviors or attitudes. It comprises 11 items (e.g., "I enjoy seeing people hurt") rated on a 4-point Likert scale.

Borderline traits were assessed using the French version[66] of the Borderline Personality Disorder (BPD) scale of the Personality Diagnostic Questionnaire, 4th edition.[67] This scale includes nine items corresponding to the DSM-IV diagnostic criteria (e.g., "I often wonder who I really am"), which are scored on a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies very well*).

Schizotypal traits were assessed using the 22-item Schizotypal Personality Questionnaire-Brief,[68] in its French version.[69] Each item (e.g., "People sometimes find me aloof and distant") was scored 0/1 (*no/yes*).

Table 1. Cronbach's alpha, scale ranges, descriptive statistics, and bivariate correlations.

	α	Range	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12
1. Cultural Identity	.88	12–60	39.70 (8.91)	–											
2. Cultural Discrimination	.80	10–50	17.82 (6.61)	.28***	–										
3. Religious Involvement	.98	37–148	54.03 (23.81)	.37***	.34***	–									
4. Machiavellianism	.73	20–140	71.39 (12.60)	-.10**	.15***	-.11**	–								
5. Psychopathy	.75	15–60	25.94 (6.14)	.00	.15***	-.04	.45***	–							
6. Narcissism	.64	0–16	3.63 (2.58)	.10*	.11**	-.01	.32***	.26***	–						
7. Sadism	.70	11–44	16.12 (4.13)	-.05	.18***	-.05	.46***	.35***	.23***	–					
8. Borderline	.80	9–63	33.76 (11.29)	-.02	.21***	-.02	.31***	.09*	.14***	.37***	–				
9. Schizotypy	.81	0–22	8.83 (4.64)	-.00	.28***	.11**	.34***	.29***	.02	.33***	.55***	–			
10. Depression	.84	0–27	9.90 (5.50)	-.09*	.20***	.04	.30***	.11**	.02	.25***	.60***	.47***	–		
11. Dogmatism	.82	36–180	78.98 (14.00)	.19***	.28***	.33***	.24***	.19***	.09*	.13**	.08*	.16***	.15***	–	
12. Radicalized Cognitions	.83	0–44	12.02 (3.62)	-.01	.19***	.04	.29***	.22***	.20***	.26***	.11**	.11**	.11**	.32***	–
13. Radicalized Behaviors	.81	0–55	3.31 (5.76)	.06	.13**	.03	.24***	.13**	.21***	.20***	.15***	.12**	.11**	.27***	.46***

Note. *p < .05; **p < .01; ***p <.001.

Depressive symptoms were measured using the French version[70] of the Patient Health Questionnaire,[71] which includes 9 items (e.g. "Over the last 2 weeks, how often have you been bothered by feeling down, depressed, or hopeless?") rated from 0 (*never*) to 3 (*almost every day*).

Dogmatism was measured using the Balanced Dogmatism Scale,[72] which is composed of 36 items (e.g., "There are two kinds of people in this world: those who are for the truth and those who are against the truth), 18 of them inversely scored, rated on a 5-point Likert scale.

Radicalized cognitions were measured using the self-report Questionnaire of Acceptability of Religiously Radicalized Behaviors.[73] It is composed of 11 items (e.g., "What do you think about cursing in prayers people of another religion than yours and praying for God's wrath against them?") rated on a 5-point Likert scale (0 = *absolutely the wrong thing to do*, 1 = *somewhat wrong*, 2 = *I am not sure*, 3 = *somewhat right*, 4 = *absolutely right*).

Radicalized behaviors were measured using an adapted scale from the Questionnaire of Acceptability of Radicalized Religious Behaviors,[74] which contains 11 items, each corresponding to a radicalized behavior (e.g., "Damaging the belongings of people of another religion than yours"). Participants were asked to report how often in the past year they had each behavior. Responses were rated as follows: 0 = *never*, 1 = *once*, 2 = *twice*, 3 = *three times*, 4 = *four times*, 5 = *at least 5 times*.

Statistical analysis

To assess the exploratory model, path analysis was conducted in AMOS 24[75] using maximum likelihood parameter estimation procedure. To determine model fit, several goodness-of-fit indexes were taken into account, as recommended.[76] The χ^2 statistic, the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) were used. Models are considered to have very good fit when the χ^2 statistic is non-significant, the GFI, AGFI and CFI are greater than .95, and the RMSEA is below .06.[77] To test for the statistical significance for the hypothesized mediations in the model, bias-corrected confidence intervals (95%) were calculated through the bootstrapping procedure (1,000 samples).

Results

Mean scores, standard deviations, and zero-order correlations for all exogenous and endogenous variables in the model are displayed in Table 1. Results show the expected relationships. Dogmatism, radicalized cognitions, and radicalized behaviors were moderately correlated. All variables, especially religious involvement, were significantly associated to dogmatism; while all psychological factors, especially the Dark Tetrad, were significantly associated to radicalized cognitions and behaviors.

Path analysis

Our hypothesized theoretical model (Figure 1) was tested, and although all of the indexes show that this model fits the data fairly well (see Full model in Table 2), some pathways were not significant: Psychopathological features (schizotypal traits, borderline traits, and depressive symptoms) were revealed as non-significant predictors of any endogenous

Table 2. Goodness-of-fit indexes for the full and the trimmed model.

Model	χ^2	df	p	GFI	AGFI	CFI	RMSEA
Full model	10.748	6	.096	.997	.961	.998	.035
Trimmed model	17.848	12	.120	.994	.975	.995	.028

Note. GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, CFI = comparative fit index, RMSEA = root mean square error of approximation.

variable. For this reason, a model in which these factors were removed was also tested. We can see in Table 2 that, as expected, the trimmed model fits the data better than the full hypothesized model. Standardized regression coefficients for this trimmed model are shown in Figure 2. We can see that religious involvement and Machiavellianism are the best predictors of dogmatism. Regarding the direct contribution of the Dark Tetrad to radicalization, sadism seems to be influencing radicalized cognitions in the highest extent, while narcissism seems to be the only direct predictor of radicalized behaviors. We also can see in Figure 2 that a reasonable amount of variance of radicalized behaviors is explained by the model. The unstandardized parameter estimates and standard errors for the final trimmed model are displayed in Table 3.

Mediations

To test for the statistical significance of the mediating role of dogmatism on the effect of predictors on radicalized cognitions, a direct path was added for each indirect association in the trimmed model—note that the direct path from Machiavellianism to radicalized
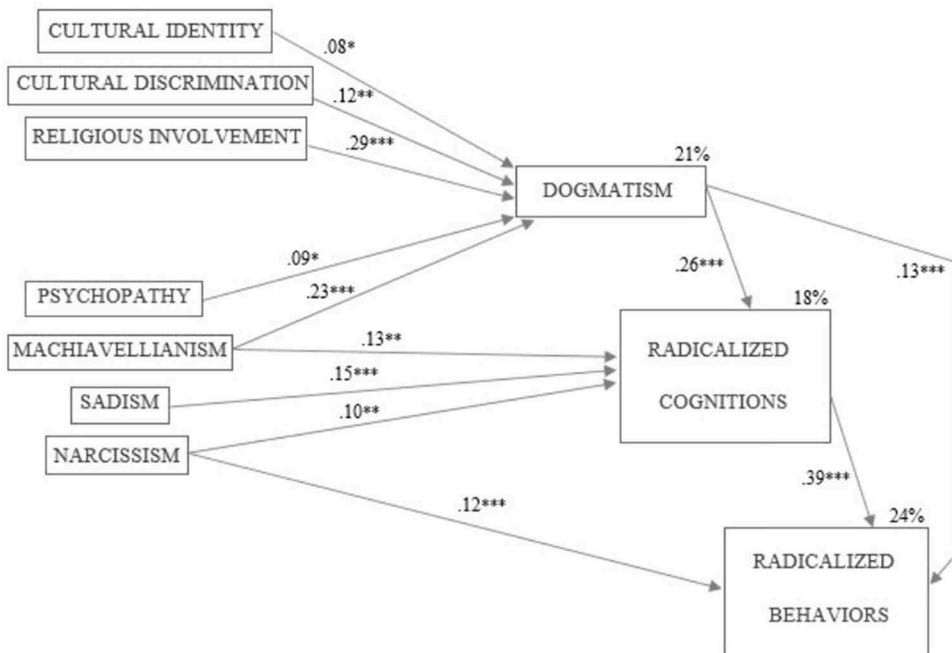

Figure 2. Results for the trimmed model: standardized regression coefficients and percentage of variance explained for the outcomes. *p < .05; **p < .01; ***p < .001.

Table 3. Unstandardized path coefficients, standard errors, and critical ratios for the trimmed model.

Path	Estimate	SE	Z	p
Cultural identity to Dogmatism	.121	.06	2.01	.045
Cultural discrimination to Dogmatism	.246	.08	3.00	.003
Religious involvement to Dogmatism	.168	.02	7.28	<.001
Machiavellianism to Dogmatism	.250	.04	5.64	<.001
Psychopathy to Dogmatism	.195	.09	2.18	.029
Dogmatism to Radicalized Cognitions	.067	.01	7.00	<.001
Machiavellianism to Radicalized Cognitions	.037	.01	3.08	.002
Narcissism to Radicalized Cognitions	.140	.05	2.63	.009
Sadism to Radicalized Cognitions	.129	.04	3.65	<.001
Dogmatism to Radicalized Behaviors	.054	.02	3.60	<.001
Radicalized Cognitions to Radicalized Behaviors	.626	.06	10.68	<.001
Narcissism to Radicalized Behaviors	.269	.08	3.42	<.001

cognitions was already present. This model revealed good fit (χ^2 (8) = 8.72, p = .367; GFI, AGFI and CFI > .98; RMSEA = .01). The bias-corrected confidence intervals (95% confidence level) were calculated through a bootstrapping procedure on 1,000 samples.[78] Standardized direct, indirect, and total effects are shown in Table 4, where we can see that all the indirect effects via dogmatism are statistically significant except in the case of cultural identity. On the other hand, all the direct effects are nonsignificant except in the case of Machiavellianism—as we already knew. Since the significance of the total effect ceased to be considered a requirement for mediation (it can sometimes be undetected),[79] these results suggest that dogmatism is mediating the effects of cultural discrimination, religious involvement, and psychopathy on radicalized cognitions.

Likewise, in order to test the mediating role of radicalized cognitions, a direct path was included for each indirect relation in the trimmed model—note that the direct path from narcissism to radicalized behaviors was already present. This model also revealed good fit (χ^2 (6) = 9.52, p = .146; GFI, AGFI and CFI > .97; RMSEA = .03). We followed the same bootstrapping procedure, results of which are displayed in Table 5. Although once again all the indirect effects are significant except that of cultural identity, in this case it must be noted that some of them are not only mediated by radicalized cognitions, but also by dogmatism. Among these cases, when we compare their indirect effects on radicalized cognitions (Table 4) with those on radicalized behaviors (Table 5), we notice that the value for Machiavellianism is the only one that changes. Thus, in order to isolate the mediating effect of radicalized cognitions, we removed the path from Machiavellianism to dogmatism, finding then an indirect effect value of .05 (confidence interval [.02, .10]; p = .003) and a direct effect value of .06 (confidence interval [-.00, .13]; p = .066). According to these results, it seems that radicalized cognitions are mediating the effect of Machiavellianism,

Table 4. Test of the mediating role of dogmatism: Direct, indirect and total effects, and associated bootstrapping bias-corrected 95% confidence intervals (CI).

	Outcome: Radicalized Cognitions		
Predictor	Direct effect [CI]	Indirect effect [CI]	Total effect [CI]
Cultural Identity	−.06 [-.16, .03]	.02 [-.00, .04]	−.04 [-.14, .05]
Cultural Discrimination	.10 [-.01, .20]	.03 [.01, .06]**	.13 [.02, .23]*
Religious Involvement	−.04 [-.13, .06]	.07 [.05, .12]**	.03 [-.05, .13]
Machiavellianism	.10 [.01, .18]*	.06 [.03, .10]**	.16 [.08, .23]**
Psychopathy	.05 [-.04, .12]	.02 [.00, .04]*	.07 [-.01, .15]

Note. All the reported estimates are standardized. *p < .05; **p < .01.

Table 5. Test of the mediating role of radicalized cognitions: direct, indirect and total effects, and associated bootstrapping bias-corrected 95% confidence intervals (CI).

	Outcome: Radicalized Behaviors		
Predictor	Direct effect [CI]	Indirect effect [CI]	Total effect [CI]
Cultural Identity	.05 [-.02, .13]	.02 [.00, .04]†	.06 [-.01, .15]
Cultural Discrimination	.00 [-.07, .09]	.03 [.01, .05]** †	.03 [-.05, .12]
Religious Involvement	−.04 [-.13, .04]	.07 [.04, .10]** †	.03 [-.05, .11]
Machiavellianism	.07 [-.01, .14]	.10 [.06, .16]** †	.17 [.08, .26]**
Psychopathy	−.06 [-.14, .01]	.02 [.00, .04]* †	−.04 [-.12, .03]
Narcissism	.10 [.03, .17]**	.04 [.01, .07]*	.14 [.06, .21]**
Sadism	.06 [-.03, .14]	.06 [.02, .10]**	.11 [.02, .21]*
Dogmatism	.13 [.05, .22]	.10 [.06, .16]**	.23 [.14, .32]**

Note. All the reported estimates are standardized. †Dogmatism is also mediating. *p < .05; **p < .01.

narcissism, sadism, and dogmatism. These results could also be suggesting that dogmatism would mediate the effects of cultural discrimination, religious involvement, and psychopathy on radicalized behaviors.

Discussion

It is has been shown that radicalization is often not related to mental disorders,[80] but some studies have shown that some psychopathological features are common between radicalized individuals.[81] The present study sheds some light on this issue. We have tested a model for radicalization—that included both sociocultural and psychological factors—among young college women, results of which seem to open the way to a greater understanding of this phenomenon.

Religious radicalization of young women in the West is a subject of growing attention that requires being approached by scientific research,[82] but there is almost no empirical work on this matter.[83] While the West has experienced radicalization of young women, media have reported that women in Muslim-majority countries are increasingly involved in jihadist activities.[84] Understanding features related to radicalization could contribute to developing policies that effectively prevent and disrupt violent extremism. Our aim was to explore the influence of some sociocultural, personality, and cognitive factors on feminine radicalization. Since lately radicalization has become a growing problem in universities,[85] we decided to study a French college sample. Hiebert and Dawson[86] have advocated the development of radicalization models that include contributions both of psychosocial variables and personality traits, and this has been our goal.

This research suggests that the so-called *dark* personality traits (Machiavellianism, narcissism, sadism, and psychopathy) facilitate both cognitive and behavioral religious radicalization among women, while psychopathological features (borderline and schizotypal traits and depressive symptoms) do not contribute to the radicalization process. In conclusion, our results suggest that women engaging in religious radicalization processes are more *dark* than *disturbed*. On the other hand, perceived cultural discrimination, religious involvement, and cultural identity have been shown to increase dogmatism, which in turns increases radicalization.

The main core of our findings is to show for the first time the direct contribution of the Dark Tetrad to radicalization, as it has been proposed.[87] Concretely, Machiavellianism and sadism have been revealed as direct predictors of radicalized cognitions, while narcissism

seems to directly increase both radicalized cognitions and radicalized behaviors. Psychopathy would only indirectly influence radicalization. Another important finding is the relevant role of dogmatism in the radicalization process. Dogmatism would predict both radicalized cognitions and radicalized behaviors. It seems that a dogmatic thinking style could lie in the beginning of this process. Finally, our results suggest that religiously radicalized acts perpetrated by women would be preceded by their religiously radicalized cognitions, in accordance with what other authors have proposed.[88]

However, it should be emphasized that our results should not be generalized to the understanding of women's engagement in terrorism given that factors influencing religious radicalization, minor radicalized behavior, and engagement in terrorism may differ.[89] There are several other limitations to the study. Although distributing the questionnaire online has significantly contributed to the survey response rate, and although external validity of online samples has been shown,[90] the possibility that participant self-selection may have biased the results cannot be excluded. In addition, results are data-driven and should not be generalized outside French college student samples. Moreover, our study utilized a cross-sectional design which limits the ability to make causal inferences from the results. Another limitation to the study is that ethnic origin and religion were not measured because French law forbids it. It may be that controlling for other external or internal factors such as immigrant background or exposure to violent extremist moral settings or reasoning biases which are relevant to the radicalization process could have weakened the association between personality traits, dogmatism, and radicalized cognitions or behavior.

Since we have only studied a female sample, this model should also be tested in a male sample in order to be able to compare the results. If there were more rigorous knowledge about the differences and similarities between the radicalization of men and women, explanations based on stereotypes would be progressively abandoned.[91]

Lines of action

The present findings could be useful for the development or improvement of PVE (preventing violent extremism) and CVE (countering violent extremism) programs, which must combine the participation of political and security authorities, researchers, practitioners, and society as a whole.[92]

More importance should be given to the prevention of psychopathic, Machiavellian, sadistic, and narcissistic attitudes, which should be identified in time by parents and teachers, in order to correct them with educational strategies. We propose that *Values Education* would be quite necessary in order to prevent radicalization—and many other aversive tendencies—among youth. Instead of leaving this moral area solely for the family, this should be carried out especially from educational institutions, as well as from state campaigns (as anti-drug ones). This ethical education, which has also been denominated "character education," is greatly valued and rooted in some European countries such as Sweden.[93] In order to prevent the development of these *dark* attitudes or dynamics and counter them, it should be essential to promote and instil the following values: humility, equality, conscience, sensitivity, empathy, compassion, solidarity, justice, as well as self-awareness and self-regulation. We must transmit to the future "sculptors" of our society, from their earliest childhood and throughout their growth, that all other people are human beings just like us, who must be perceived and "felt" as such, and who really deserve respect and consideration.

It would also be positive to provide youth with strategies in the face of cultural discrimination from which they could be targeted, endowing them with psychological (cognitive, emotional, and behavioural) resources to cope with it, thus reducing (or, at least, cushioning as much as possible) cultural discrimination and its negative consequences, such as getting involved in the radicalization process.

But the very greatest of the implications of our findings, in terms of prevention and of deradicalization, is the need to try to avoid the establishment of a dogmatic thinking style among youth. We have shown that dogmatism would be an important starting point for radicalization among women, and, in order to prevent it, we must foster a flexible thinking style, which implies open-mindedness, relativization abilities (adopting different points of view and perspectives), and self-criticism towards one's own ideologies, which also require taking some distance from one's own visceral emotions. By preventing dogmatic attitudes and beliefs among youth, we would prevent their possible radicalization tendencies and their possible future participation in violent and terrorist acts.

Finally, if we want to prevent radicalized acts, we should encourage tolerance toward others (toward their attitudes, beliefs, feelings, and behaviors) regardless of their culture and religious beliefs; accepting the other as he is, and valuing the richness that hides behind diversity and different customs or traditions.

Conclusion

This research suggests that the *dark* personality traits (Machiavellianism, narcissism, sadism, and psychopathy) and, on the other hand, perceived cultural discrimination, religious involvement, and cultural identity facilitate both cognitive and behavioral religious radicalization among women, while other psychopathological features (borderline and schizotypal traits and depressive symptoms) do not contribute to the radicalization process. Women engaged in religious radicalization processes appeared as more *dark* than *disturbed*. Both the dark traits and socio-cultural factors were revealed as predictors of radicalization, while dogmatism appeared as a mediator, suggesting that dogmatism is a notable cognitive step toward radicalization among women. For this reason, we propose that dogmatism may be a target for prevention and treatment of radicalization, while the Dark Tetrad traits must be taken into account in the development of strategies aimed to prevent and counter religious radicalization among women.

Disclosure statement

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Notes

1. Elizabeth Pearson, "The Case of Roshonara Choudhry: Implications for Theory on Online Radicalization, ISIS Women, and the Gendered Jihad," *Policy & Internet* 8, no. 1 (2016): 5–33. doi:10.1002/poi3.101.

2. Mia Bloom and Hilary Matfess, "Women as Symbols and Swords in Boko Haram's Terror," *Prism: A Journal of the Center for Complex Operations* 6, no. 1 (2016): 104–21; Pedro Manrique, Zhenfeng Cao, Andrew Gabriel, John Horgan, Paul Gill, Hong Qi, Elvira María Restrepo, Daniela Johnson, Stefan Wuchty, Chaoming Song, and Neil Johnson, "Women's Connectivity in Extreme Networks," *Science Advances* 2, no. 6 (2016): 1–6. doi:10.1126/sciadv.1501742; Kathleen M. Blee, "Women and Organized Racial Terrorism in the United States," *Studies in Conflict & Terrorism* 28, no. 5 (2005): 421–33; Amanda Ann Willows, *Female Perpetrated Terrorism and Suicide Bombings* (Texas, US: Angelo State University, 2017); Jennifer Philippa Eggert, "Women Fighters in the 'Islamic State' and Al-Qaida in Iraq: A Comparative Analysis," *Journal of International Peace and Organization* 90, no. 3–4 (2015): 363–80.

3. Katherine E. Brown and Tania Saeed, "Radicalization and Counter-Radicalization at British Universities: Muslim Encounters and Alternatives," *Ethnic and Racial Studies* 38, no. 11 (2015): 1952–68; Meredith Loken and Anna Zelenz, "Explaining Extremism: Western Women in Daesh," *European Journal of International Security* 3, no. 1 (2018): 45–68; Anita Perešin, "Fatal Attraction: Western Muslimas and ISIS," *Perspectives on Terrorism* 9, no. 3 (2015): 21––38; Mia Bloom, "In Defense of Honor: Women and Terrorist Recruitment on the Internet," *Journal of Postcolonial Studies* 4, no. 1 (2013): 150–95.

4. Allard Rienk Feddes, Liesbeth Mann, and Bertjan Doosje, "Increasing Self-Esteem and Empathy to Prevent Violent Radicalization: A Longitudinal Quantitative Evaluation of a Resilience Training Focused on Adolescents with a Dual Identity," *Journal of Applied Social Psychology* 45, no. 7 (2015): 400–11. doi:10.1111/jasp.12307; John Horgan, *The Psychology of Terrorism* (London: Routledge, 2004); Marc Sageman, "A Strategy for Fighting International Islamist Terrorists," *The ANNALS of the American Academy of Political and Social Science* 618, no. 1 (2008): 223–31; Abdrabo Soliman, Tarek Bellaj, and Mather Khelifa, "An Integrative Psychological Model for Radicalism: Evidence from Structural Equation Modeling," *Personality and Individual Differences* 95 (2016): 127–33; Muhadi Sugiono, "Terrorism, Radicalism and Violence: Preliminary Research and Conceptual Development," *Dipresentasikan di Jakarta Center for Law Enforcement Cooperation (JCLEC)* (2011), http://www.academia.edu/734690.

5. Riyad Hosain Rahimullah, Stephen Larmar, and Mohamad Abdalla, "Understanding Violent Radicalization amongst Muslims: A Review of the Literature," *Journal of Psychology and Behavioral Science* 1, no. 1 (2013): 19–35.

6. John Horgan, *The Psychology of Terrorism* (London: Routledge, 2005); John Horgan and Max Taylor, "Disengagement, De-Radicalization and the Arc of Terrorism: Future Directions for

Research," in *Jihadi Terrorism and the Radicalization Challenge: European and American Experiences*, ed. Rik Coolsaet, 2nd ed. (London, UK: Ashgate, 2011), 173–86.

7. John Horgan, "Deradicalization or Disengagement? A Process in Need of Clarity and a Counterterrorism Initiative in Need of Evaluation," *Revista de Psicología Social* 24, no. 2 (2009): 291–98, 291.

8. Andrew Silke, "Holy Warriors—Exploring the Psychological Processes of Jihadi Radicalization," *European Journal of Criminology* 5, no. 1 (2008): 99–123.

9. Adeem Ahmad Massarwi and Mona Khoury-Kassabri, "Serious Physical Violence among Arab-Palestinian Adolescents: The Role of Exposure to Neighborhood Violence, Perceived Ethnic Discrimination, Normative Beliefs, and, Parental Communication," *Child Abuse & Neglect* 63 (2017): 233–44.

10. Bertjan Doosje, Annemarie Loseman, and Kees Bos, "Determinants of Radicalization of Islamic Youth in the Netherlands: Personal Uncertainty, Perceived Injustice, and Perceived Group Threat," *Journal of Social Issues* 69, no. 3 (2013): 586–604; Tomas Precht, "Home Grown Terrorism and Islamist Radicalisation in Europe: From Conversion to Terrorism," *Research Report Funded by the Danish Ministry of Justice* (2007); Silke, "Holy Warriors— Exploring the Psychological Processes of Jihadi Radicalization" (see note 8).

11. Mohammed Hafez and Creighton Mullins, "The Radicalization Puzzle: A Theoretical Synthesis of Empirical Approaches to Homegrown Extremism," *Studies in Conflict & Terrorism* 38, no. 11 (2015): 958–75; Lazar Stankov, Gerard Saucier, and Goran Knezevic, "Militant Extremist Mind-Set: Proviolence, Vile World, and Divine Power," *Psychological Assessment* 22, no. 1 (2010): 70–86.

12. Soliman, Bellaj, and Khelifa, "An Integrative Psychological Model for Radicalism" (see note 4).

13. Naumana Amjad and Alex M. Wood, "Identifying and Changing the Normative Beliefs about Aggression Which Lead Young Muslim Adults to Join Extremist Anti-Semitic Groups in Pakistan," *Aggressive Behavior* 35, no. 6 (2009): 514–19; Clark McCauley, "Testing Theories of Radicalization in Polls of US Muslims," *Analyses of Social Issues and Public Policy* 12, no. 1 (2012): 296–11; Peter R. Neumann, "The Trouble with Radicalization," *International Affairs* 89, no. 4 (2013): 873–93.

14. Megan K. McBride, "The Logic of Terrorism: Existential Anxiety, the Search for Meaning, and Terrorist Ideologies," *Terrorism and Political Violence* 23, no. 4 (2011): 560–81; Bart Schuurman and John G. Horgan, "Rationales for Terrorist Violence in Homegrown Jihadist Groups: A Case Study from the Netherlands," *Aggression and Violent Behavior* 27 (2016): 55–63. doi:10.1016/j.avb.2016.02.005.

15. Stankov, Saucier, and Knezevic, "Militant Extremist Mind-Set" (see note 11).

16. Sabrina De Regt, Tim Smits, and Dimitri Mortelmans, "Trends in Authoritarianism: Evidence from 31 European Countries," *The International Journal of Social Sciences and Humanity Studies* 3, no. 1 (2011): 395–404.

17. James E. Cameron, "A Three-Factor Model of Social Identity," *Self and Identity* 3, no. 3 (2004): 239–62.

18. Paul G. Schmitz, "Immigrant Mental and Physical Health," *Psychology and Developing Societies* 4, no. 2 (1992): 117–31.

19. Leo A. Pirojnikoff, Ilana Hadar, and Avner Hadar, "Dogmatism and Social Distance: A Cross-Cultural Study," *The Journal of Social Psychology* 85, no. 2 (1971): 187–93.

20. Marie A. Eisenstein and April K. Clark, "Political Tolerance, Psychological Security, and Religion: Disaggregating the Mediating Influence of Psychological Security," *Politics and Religion* 7, no. 2 (2014): 287–317. doi:10.1017/S1755048314000054.

21. Daniel Hiebert and Lome Dawson, *Personality Traits and Terrorism* (Canada: Canadian Security and Intelligence Service, 2015).

22. Arie W. Kruglanski, Michele J. Gelfand, Jocelyn J. Bélanger, Anna Sheveland, Malkanthi Hetiarachchi, and Rohan Gunaratna, "The Psychology of Radicalization and Deradicalization: How Significance Quest Impacts Violent Extremism," *Political Psychology* 35, no. 1 (2014): 69–93; Angela McGilloway, Priyo Ghosh, and Kamaldeep Bhui, "A Systematic Review of Pathways to and Processes Associated with Radicalization and

Extremism amongst Muslims in Western Societies," *International Review of Psychiatry* 27, no. 1 (2015): 39–50.

23. Michael King and Donald M. Taylor, "The Radicalization of Homegrown Jihadists: A Review of Theoretical Models and Social Psychological Evidence," *Terrorism and Political Violence* 23, no. 4 (2011): 602–22. doi:10.1080/09546553.2011.587064.

24. John Horgan, "The Search for the Terrorist Personality," *Terrorists, Victims and Society: Psychological Perspectives on Terrorism and its Consequences* 3, no. 27 (2003).

25. Michel Gottschalk and Simon Gottschalk, "Authoritarianism and Pathological Hatred: A Social Psychological Profile of the Middle Eastern Terrorist," *The American Sociologist* 35, no. 2 (2004): 38–59.

26. Jeff Victoroff, "The Mind of the Terrorist—A Review and Critique of Psychological Approaches," *Journal of Conflict Resolution* 49, no. 1 (2005): 3–42. doi:10.1177/0022002704272040.

27. Soliman, Bellaj, and Khelifa, "An Integrative Psychological Model for Radicalism" (see note 4).

28. Scott Atran, *Talking to the Enemy: Religion, Brotherhood, and the (Un)Making of Terrorists* (New York: Ecco, 2010); Edwin Bakker, *Jihadi Terrorists in Europe: Their Characteristics and the Circumstances in which They Joined the Jihad: An Exploratory Study* (The Hague: Netherlands Institute of International Relations Clingendael, 2006); Ian McGregor, Joseph Hayes, and Mike Prentice, "Motivation for Aggressive Religious Radicalization: Goal Regulation Theory and a Personality x threat x Affordance Hypothesis," *Frontiers in Psychology*, 6 (2015): 1325. doi:10.3389/fpsyg.2015.01325.

29. Erin E. Buckels, Daniel N. Jones, and Delroy L. Paulhus, "Behavioral Confirmation of Everyday Sadism," *Psychological Science* 24, no. 11 (2013): 2201–09; Henri Chabrol, Nikki Van Leeuwen, Rachel Rodgers, and Natalène Séjourné, "Contributions of Psychopathic, Narcissistic, Machiavellian, and Sadistic Personality Traits to Juvenile Delinquency," *Personality and Individual Differences* 47, no. 7 (2009): 734–39.

30. Erin E. Buckels, Paul D. Trapnell, and Delroy L. Paulhus, "Trolls Just Want to Have Fun," *Personality and Individual Differences* 67 (2014) 97–102; Henri Chabrol, Tiffany Melioli, Nikki Van Leeuwen, Rachel Rodgers, and Nelly Goutaudier, "The Dark Tetrad: Identifying Personality Profiles in High-School Students," *Personality and Individual Differences* 83 (2015): 97–101.

31. Stephen Porter, Aisha Bhanwer, Michael Woodworth, and Pamela J. Black, "Soldiers of Misfortune: An Examination of the Dark Triad and the Experience of Schadenfreude," *Personality and Individual Differences* 67 (2014): 64–68.

32. McGregor, Hayes, and Prentice, "Motivation for Aggressive Religious Radicalization" (see note 28).

33. Marion Steininger and Ellen Eisenberg, "On Different Relationships between Dogmatism and Machiavellianism among Male and Female College Students," *Psychological Reports* 38, no. 3 (1976): 779–82.

34. Barbara Gawda, "Model of Love, Hate, and Anxiety Scripts in Psychopathic Individuals," *Frontiers in Psychology*, 6 (2015): 1722; Schmitz, "Immigrant Mental and Physical Health" (see note 18).

35. Tami Amanda Jacoby, "How the War Was 'One': Countering Violent Extremism and the Social Dimensions of Counter-Terrorism in Canada," *Journal for Deradicalization* 6 (2016): 272–304; Christine Sixta Rinehart, "Volatile Breeding Grounds: The Radicalization of the Egyptian Muslim Brotherhood," *Studies in Conflict & Terrorism* 32, no. 11 (2009): 953–88. doi:10.1080/10576100903262773.

36. Gottschalk and Gottschalk, "Authoritarianism and Pathological Hatred" (see note 25); Soliman, Bellaj and Khelifa, "An Integrative Psychological Model for Radicalism" (see note 4).

37. Kamaldeep Bhui, Brian Everitt, and Edgar Jones, "Might Depression, Psychosocial Adversity, and Limited Social Assets Explain Vulnerability to and Resistance Against Violent Radicalisation?," *PloS one* 9, no. 9 (2014): e105918; Gottschalk and Gottschalk, "Authoritarianism and Pathological Hatred" (see note 25); William Wolfberg, "The Homegrown Jihad: A Comparative Study of Youth Radicalization in the United States and Europe" (PhD dissertation, University of South Florida, 2012).

38. Thomas G. Plante and Allen C. Sherman, *Faith and Health: Psychological Perspectives* (New York: Guilford, 2001).

39. Hanna Darwin, Nick Neave, and Joni Holmes, "Belief in Conspiracy Theories: The Role of Paranormal Belief, Paranoid Ideation and Schizotypy," *Personality and Individual Differences* 50, no. 8 (2011): 1289–93. doi:10.1016/j.paid.2011.02.027.

40. Bhui, Everitt, and Jones, "Might Depression, Psychosocial Adversity, and Limited Social Assets Explain Vulnerability to and Resistance Against Violent Radicalisation?" (see note 37).

41. Ariel Merari, Ilan Diamant, Arie Bibi, Yoav Broshi, and Giora Zakin, "Personality Characteristics of 'Self-Martyrs'/'Suicide Bombers' and Organizers of Suicide Attacks," *Terrorism and Political Violence* 22, no. 1 (2009): 87–101.

42. Wolfberg, "The Homegrown Jihad" (see note 37).

43. Nachshon Meiran, Gary M. Diamond, Doron Toder, and Boris Nemets, "Cognitive Rigidity in Unipolar Depression and Obsessive Compulsive Disorder: Examination of Task Switching, Stroop, Working Memory Updating and Post-Conflict Adaptation," *Psychiatry Research* 185, no. 1 (2011): 149–56.

44. Allison L. Wainer, Brooke R. Ingersoll, and Christopher J. Hopwood, "The Structure and Nature of the Broader Autism Phenotype in a Non-Clinical Sample," *Journal of Psychopathology and Behavioral Assessment* 33, no. 4 (2011): 459. doi:10.1007/s10862-011-9259-0; Leanne M. Williams and Harvey J. Irwin, "A Study of Paranormal Belief, Magical Ideation as an Index of Schizotypy and Cognitive Style," *Personality and Individual Differences* 12, no. 12 (1991): 1339–48. doi:10.1016/0191-8869(91)90210-3.

45. Robin L. Thompson, "Radicalization and the Use of Social Media," *Journal of Strategic Security* 4, no. 4 (2011): 167; Robyn Torok, "Developing an Explanatory Model for the Process of Online Radicalisation and Terrorism," *Security Informatics* 2, no. 1 (2013): 6; Loken and Zelenz, "Explaining Extremism: Western Women in Daesh" (see note 3); Perešin, "Fatal Attraction: Western Muslimas and ISIS" (see note 3); Bloom, "In Defense of Honor: Women and Terrorist Recruitment on the Internet" (see note 3); Anna Warrington, "Countering Violent Extremism via De-Securitisation on Twitter," *Journal for Deradicalization* 11 (2017): 258–80.

46. Andrew Perrin, "Social Media Usage: 2005–2015," *Pew Research Center* (October 2015); Loken and Zelenz, "Explaining Extremism: Western Women in Daesh" (see note 3); Perešin, "Fatal Attraction: Western Muslimas and ISIS" (see note 3); Bloom, "In Defense of Honor: Women and Terrorist Recruitment on the Internet" (see note 3).

47. Anthony Glees and Chris Pope, *When Students Turn to Terror: Terrorist and Extremist Activity on British Campuses* (London: The Social Affairs Unit, 2005); Alison Harrison, "Campus Extremism 'a Serious Problem' Say MPs and Peers," *BBC News*, April 28, 2011, http://www.bbc.co.uk/news/education-13223026.

48. Brian M. Jenkins, *Building an Army of Believers: Jihadist Radicalization Recruitment* (Santa Monica, California: RAND Corporation, 2007).

49. Rex A. Hudson and Marilyn Lundell Majeska, *The Sociology and Psychology of Terrorism: Who Becomes a Terrorist and Why?: A Report* (Library of Congress. Federal Research Division, 1999); Charles A. Russell and Bowman H. Miller, "Profile of a Terrorist," in *Perspectives on Terrorism*, eds. Lawrence Zelic Freedman and Yonah Alexander (Chicago: Scholarly Resources, 1983), 45–60.

50. Karla Adam, "Radical Islam often Fomented in College." *The Washington Post*, January 1, 2010, http://articles.washingtonpost.com/2010-01-01/world/36772205_1_islamic-society-umar-farouk-abdulmutallab-british-universities; Claude Berrebi, "Evidence about the Link between Education, Poverty and Terrorism Among Palestinians," *Peace Economics, Peace Science and Public Policy* 13, no. 1 (2007): 1–35; Brown and Saeed, "Radicalization and Counter-Radicalization at British Universities: Muslim Encounters and Alternatives" (see note 3); Brandon LaRue, "Birthplace or Meeting Place? An Analysis of Muslim Student Radicalization in American Universities" (PhD dissertation, Lehigh University, 2012).

51. Samuel D. Gosling, Simine Vazire, Sanjay Srivastava, and Oliver P. John, "Should We Trust Web-based Studies? A Comparative Analysis of Six Preconceptions about Internet Questionnaires," *American Psychologist* 59, no. 2 (2004): 93-104. doi:10.1037/0003-066X.59.2.93.

52. Isabelle Régner and Florence Loose, "Relationship of Sociocultural Factors and Academic Self-Esteem to School Grades and School Disengagement in North African French Adolescents," *British Journal of Social Psychology* 45, no. 4 (2006): 777–97.

53. Jean S. Phinney, "The Multigroup Ethnic Identity Measure: A New Scale for Use with Diverse Groups," *Journal of Adolescent Research* 7 (1992): 156–76. doi:10.1177/074355489272003.

54. Nikki van Leeuwen, Rachel F. Rodgers, Eric Bui, Gérard Pirlot, and Henri Chabrol, "Relations between Acculturation Orientations and Antisocial Behavior in Adolescents and Young Adults from Immigrant Families," *International Journal of Culture and Mental Health* 7, no. 1 (2014): 68–82.

55. Joseph D. Hovey and Cheryl A. King, "Acculturative Stress, Depression, and Suicidal Ideation among Immigrant and Second-Generation Latino Adolescents," *Journal of the American Academy of Child and Adolescent Psychiatry* 35, no. 9 (1996): 1183–92. doi:10.1097/00004583-199609000-00016.

56. Brittany C. Hernandez, "The Religiosity and Spirituality Scale for Youth: Development and Initial Validation" (PhD dissertation, Louisiana State University, 2011).

57. D. M. Romney, "Classification and measurement. Evaluation of a data collection method. Research methods in education and the social sciences," (Milton Keynes: The Open University Press, 1979): 137–63.

58. Richard Christie and Florence L. Geis, *Studies in Machiavellianism* (New York: Academic Press, 1970).

59. Mathieu D'Acremont, Martial Van Der Linden, H. Axelson, and Jaques Vonèche, "French Translation of the Youth Psychopathic Traits Inventory," http://www.oru.se/jps/downloadYPI/ (2002).

60. Henrik Andershed, Sheilagh Hodgins, and Anders Tengström, "Convergent Validity of the Youth Psychopathic Traits Inventory (YPI)—Association with the Psychopathy Checklist: Youth Version (PCL: YV)," *Assessment* 14, no. 2 (2007): 144–54. doi:10.1177/1073191106298286.

61. Paul J. Frick and Stuart F. White, "Research Review: The Importance of Callous-Unemotional Traits for Developmental Models of Aggressive and Antisocial Behavior," *Journal of Child Psychology and Psychiatry* 49, no. 4 (2008): 359–75.

62. Chabrol, Melioli, Van Leeuwen, Rodgers, and Goutaudier, "The Dark Tetrad: Identifying Personality Profiles in High-School Students" (see note 30).

63. Daniel R. Ames, Paul Rose, and Cameron P. Anderson, "The NPI-16 as a Short Measure of Narcissism," *Journal of Research in Personality* 40, no. 4 (2006): 440–50. doi:10.1016/j.jrp.2005.03.002.

64. Chabrol, Van Leeuwen, Rodgers, and Séjourné, "Contributions of Psychopathic, Narcissistic, Machiavellian, and Sadistic Personality Traits to Juvenile Delinquency" (see note 29).

65. Aisling O'Meara, Jason Davies, and Sean Hammond, "The Psychometric Properties and Utility of the Short Sadistic Impulse Scale (SSIS)," *Psychological Assessment* 23, no. 2 (2011): 523–31. doi:10.1037/a0022400.

66. Martine Bouvard, Marie Vuachet, and Caroline Marchand, "Examination of the Screening Properties of the Personality Diagnostic Questionnaire 4+ (PDQ-4+) in a Non-Clinical Sample," *Clinical Neuropsychiatry* 8, no. 2 (2011): 151–58.

67. S. E. Hyler, *PDQ-4+ Personality Questionnaire* (New York: Author, 1994).

68. Adrian Raine and Deana Benishay, "The SPQ-B: A Brief Screening Instrument for Schizotypal Personality Disorder," *Journal of Personality Disorders* 9, no. 4 (1995): 346–55.

69. P. Dumas, S. Bouafia, C. Gutknecht, M. Saoud, J. Dalery, and T. d'Amato, "Validation of the French Version of the Raine Schizotypal Personality Disorder Questionnaire–Categorial and Dimensional Approach to Schizotypal Personality Traits in a Normal Student Population," *Encéphale* 26, no. 5 (2000): 23–29.

70. Yolanda Carballeira, Patricia Dumont, Sandro Borgacci, Denis Rentsch, Nicolas de Tonnac, Marc Archinard, and Antonio Andreoli, "Criterion Validity of the French Version of Patient Health Questionnaire (PHQ) in a Hospital Department of Internal Medicine," *Psychology and Psychotherapy: Theory, Research and Practice* 80, no. 1 (2007): 69–77.

71. Kurt Kroenke and Robert L. Spitzer, "The PHQ-9: A New Depression Diagnostic and Severity Measure," *Psychiatric Annals* 32, no. 9 (2002): 509–15.

72. John J. Ray, "The Development and Validation of a Balanced Dogmatism Scale," *Australian Journal of Psychology* 22, no. 3 (1970): 253–60. doi:10.1080/00049537008254581.

73. Amjad and Wood, "Identifying and Changing the Normative Beliefs about Aggression Which Lead Young Muslim Adults to Join Extremist Anti-Semitic Groups in Pakistan" (see note 13).

74. Ibid.

75. James L. Arbuckle, *IBM SPSS Amos 19 User's Guide* (Crawfordville, FL: Amos Development Corporation, 2010).

76. Li-Tze Hu and Peter M. Bentler, "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives," *Structural Equation Modeling: A Multidisciplinary Journal* 6, no. 1 (1999): 1–55. doi:10.1080/10705519909540118.

77. Ibid.

78. Patrick E. Shrout and Niall Bolger, "Mediation in Experimental and Nonexperimental Studies: New Procedures and Recommendations," *Psychological Methods* 7, no. 4 (2002): 422–45.

79. Ibid.

80. Marc Sageman, *Understanding Terror Networks* (Philadelphia, Pennsylvania: University of Pennsylvania Press, 2004).

81. Jacoby, "How the War Was 'One': Countering Violent Extremism and the Social Dimensions of Counter-Terrorism in Canada" (see note 35); Rinehart, "Volatile Breeding Grounds: The Radicalization of the Egyptian Muslim Brotherhood" (see note 35); Gottschalk and Gottschalk, "Authoritarianism and Pathological Hatred" (see note 25); Soliman, Bellaj, and Khelifa, "An Integrative Psychological Model for Radicalism" (see note 4); Bhui, Everitt, and Jones, "Might Depression, Psychosocial Adversity, and Limited Social Assets Explain Vulnerability to and Resistance against Violent Radicalisation?" (see note 37); Wolfberg, "The Homegrown Jihad" (see note 37).

82. Pearson, "The Case of Roshonara Choudhry" (see note 1).

83. Brown and Saeed, "Radicalization and Counter-radicalization at British Universities" (see note 3).

84. Benjamin Ducol, "Uncovering the French-Speaking Jihadisphere: An Exploratory Analysis," *Media, War & Conflict* 5, no. 1 (2012): 51–70; Katharina von Knop, "The Female Jihad: Al Qaeda's Women," *Studies in Conflict & Terrorism* 30, no. 5 (2007): 397–414.

85. Brown and Saeed, "Radicalization and Counter-Radicalization at British Universities" (see note 3).

86. Hiebert and Dawson, *Personality Traits and Terrorism* (see note 21).

87. McGregor, Hayes, and Prentice, "Motivation for Aggressive Religious Radicalization" (see note 28).

88. Amjad and Wood, "Identifying and Changing the Normative Beliefs about Aggression Which Lead Young Muslim Adults to Join Extremist Anti-Semitic Groups in Pakistan" (see note 13); McCauley, "Testing Theories of Radicalization in Polls of US Muslims" (see note 13); Neumann, "The Trouble with Radicalization" (see note 13).

89. Horgan, *The Psychology of Terrorism* (see note 4).

90. Gosling, Vazire, Srivastava, and John, "Should We Trust Web-based Studies?" (see note 51).

91. Brigitte L. Nacos, "The Portrayal of Female Terrorists in the Media: Similar Framing Patterns in the News Coverage of Women in Politics and in Terrorism," *Studies in Conflict & Terrorism* 28, no. 5 (2005): 435–51; Karla J. Cunningham, "Countering Female Terrorism," *Studies in Conflict & Terrorism* 30, no. 2 (2007): 113–29; Jessica Davis, "Women and Terrorism in Radical Islam: Planners, Perpetrators, Patrons" (Paper presented at the Revolution or Evolution? Emerging Threats to Security in the 21st Century. First Annual Graduate Symposium, Dalhousie University, Halifax, N.S. Canada, March 25, 2006).

92. Lore Colaert, ed., *De-Radicalisation: Scientific Insights for Policy* (Brussels: Flemish Peace Institute, 2017); Melinda Holmes, "Preventing Violent Extremism through Peacebuilding: Current Perspectives from the Field," *Journal of Peacebuilding & Development* 12, no. 2 (2017): 85–89; Warrington, "Countering Violent Extremism Via De-Securitisation on Twitter" (see note 45).

93. Robert Thornberg and Ebru Oguz, "Teachers' Views on Values Education: A Qualitative Study in Sweden and Turkey," *International Journal of Educational Research* 59 (2013): 49–56.