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Personality moderates the relationship between uncertainty and political violence: Evidence from two large U.S. samples



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ABSTRACT

Acts of political violence have negative consequences for intergroup relations, peaceful democratic participation, and increase mistrust and unrest between political groups and factions within society. A growing literature points to the role of uncertainty in driving political violence, but existing studies tend to rely on student and online convenience samples or macro-level indicators of uncertainty. This paper investigates the generalizability or the relationship between uncertainty and political violence and seeks to uncover whether this relationship is homogeneous in the population or contingent on individual differences in personality. In two large samples of the U.S. adult population (total $n = 4806$), the relationship between uncertainty and political violence is shown to depend on the trait of openness to experience. For those with low levels of openness, there is a strong and replicable relationship between uncertainty and political violence. This is not the case for those with high levels of openness. This interaction is robust to inclusion of a range of demographics factors, and shows how the combination of low openness and high uncertainty is a high-risk mix for political violence not only in a limited part of the population, but across groups and issue cleavages.

1. Introduction

In the past years, there has been an uptick in instances of political violence from left-wing, right-wing and religious extremist groups. These acts of political violence impel policymakers to act, design legislation and safeguards that are meant to reduce the risk of future violence (Davenport, 2007) and create an imperative for understanding the causes of political violence in the population. At the same time, developments in political psychology have led to an increased level of knowledge of individual factors involved in violence. A recent review of the empirical evidence of the processes leading to political violence (Gøtzsche-Astrup, 2018) found that uncertainty related to an individual's self, place in the world and future is a key antecedent, as proposed by uncertainty-identity theory (Hogg, 2014). However, existing studies rely on non-representative student samples, which limits the generalizability to explain general developments in society. The use of student pools in psychological research has often been problematized since, as a group, students are more homogeneous and less attentive participants than the adult population (Hauser & Schwarz, 2016), although studies based on student samples often show similar effect sizes as those using nationally representative populations (Buhrmester, Kwang, & Gosling, 2011; Druckman & Kam, 2010). The relationships found in student samples do not necessarily generalize or may be

contingent on differences in the population. Therefore, it is important that we replicate and expand such findings to population-representative samples.

The purpose of this paper is twofold. First, it aims to assess the generalizability in the relationship between uncertainty and support for political violence in the adult U.S. population using samples with diversity in sociodemographic factors and individual dispositions. Second, the paper seeks to investigate whether this relationship is heterogeneous when conditioning on personality traits. One important way in which student samples might be more homogeneous than the general population is in terms of individual differences in personality. Since personality moderates a range of political and psychological mechanisms (Mondak, Hibbing, Canache, Seligson, & Anderson, 2010), heterogeneous psychological relationships in the wider population are likely in the case of political violence also.

This paper proceeds by reviewing the existing empirical evidence for the relationship between uncertainty and political violence compared to its normative cousin political activism. From extant research into personality and individual differences in political activism and violence, predictions regarding the role of uncertainty and personality in the adult population are presented. The predictions are tested in two large American samples. The first consists of a survey of 2317 young adults with a broad sociodemographic profile, while the second is a

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population representative sample of 2489 adults. Overall, the results show that uncertainty does indeed play an important role in intentions to engage in and attitudes towards political violence, but that individual differences in personality condition the relationship. The implications of this study are taken up in the discussion.

1.1. Uncertainty and political violence

If uncertainty is a central factor in driving people in democratic societies to extreme political acts, including violence against perceived political enemies or outgroup members, what is the psychological mechanism through which this happens? In social identity theory (Tajfel & Turner, 1979) and uncertainty-identity theory (Hogg, 2014), experiencing uncertainty that questions one's place in the world and future is aversive because it threatens the otherwise fixed structures of meaning and predictability that create the foundation for individuals' functioning daily lives and self-esteem (Hogg, Abrams, & Brewer, 2017). Uncertainty prompts people to seek refuge with in-groups to patch up a hurt sense of self, because threats to the self-concepts – such as uncertainty – can be lessened through a reliance on the social aspects of the self. Well-defined groups that provide a fixed worldview, a black-and-white distinction between ingroup and outgroup members, and strong behavioral norms, offer better uncertainty-reduction. Centrally, uncertainty-identity theory posits that political groups with such characteristics tend to be more extreme in their behavioral norms, and more accepting of threats and violence against competing political groups.

Empirical evidence for the relationship between uncertainty and extreme political behavior comes mainly from social psychological laboratory studies. Priming individuals with uncertainty related to the self increases their reliance on well-structured groups with a clear prototype and decreases the reliance of the individual elements of the self in intergroup relations (Goldman & Hogg, 2016). Uncertainty has also been causally connected to more hostile intergroup behavior and support for authoritarian leaders (Brewer & Pierce, 2005; Hogg & Adelman, 2013; Hogg, Kruglanski, & Bos, 2013; Rast III, Hogg, & Giessner, 2013). Other studies have shown that an increased reliance on one's social identity increases intergroup hostility and support for extreme action (Kunst et al., 2018; Merrilees et al., 2013), extreme sacrifice for the in-group (Gómez et al., 2017; Whitehouse, 2018), and intentions to engage in violence in defense of the political in-group (Littman & Paluck, 2015).

In a more sociologically oriented body of research, political and economic uncertainty has been linked to political violence in society, and relative deprivation and economic inequality to collective political violence (Gurr, 1970; Muller, 1985; Wang, Dixon, Muller, & Seligson, 1993). Macro-level economic and political uncertainty is related to group-based grievances, political protest and violence (Lee, 2016; Shadmehr, 2014).

From these literatures, this paper predicts a positive relationship between individual level uncertainty and political violence in the population. However, despite the existence of these literatures, there seems to be an empirical disconnect. On the one hand, the sociological literature has relied on macroeconomic indicators such as economic growth, levels of conflict in society, and voting patterns, but has not used individual-level indicators to show the central relationship between uncertainty and violence. Therefore, it is unclear how this relationship is represented at the level of the individual's psychology. In other words, the measurement validity of these studies is problematic. On the other hand, the social psychological literature relies on student samples or non-representative online samples recruited from MTurk, to the detriment of external validity and generalizability. Neither tradition take potential heterogeneous relationships due to individual differences into account. To bridge this gap, individual level data that is generalizable to the population and that allows for the assessment of heterogeneous relationships is necessary. This paper argues that, and

empirically tests whether, a focus on personality, in particular the big five traits, can solve these issues.

1.2. Individual differences, political activism and political violence

If heterogeneous relationships exist, investigating the role of personality offers a way of finding them. Individual differences in personality mean that we are unlikely to react in the same way to specific environmental factors and stressors (Gallego & Oberski, 2012; Mondak et al., 2010). Rather, behavior is determined by the interaction between situational constraints and the psychological structures that determine the way we differ from each other in states and behavior – our personality. The descriptive five-factor taxonomy of personality is relevant to the purposes of this paper, because it captures much of the psychological heterogeneity that exists in the population. If the uncertainty and violence link is contingent on individual differences, the big five factors provide a wide net with which to capture these differences. The five factors are usually labelled neuroticism, extraversion, openness, agreeableness, and conscientiousness. Neuroticism indicates dispositional anxiety and negative affect, extraversion indicates gregariousness and behavioral approach, and openness to experience describes intellectual openness and curiosity. Agreeableness covers interpersonal warmth and friendliness, and conscientiousness describes dependability and carefulness (Gosling, Rentfrow, & Swann, 2003; Mondak et al., 2010). A review of the literature on personality and political behavior, presented below along with the predictions of this study, reveals that two factors, openness and agreeableness, play a more prominent role than the other three.

1.2.1. Openness

Openness to experience is a well-studied trait in the literature on personality and political behavior, and particularly relevant for this paper. High openness is positively related to political liberalism and negatively to political conservatism (Gerber et al., 2010), albeit with substantial cross-country variance (Fatke, 2017). High openness is related to collective political participation (Gallego & Oberski, 2012; Vecchione et al., 2015) and intentions to engage in political protest (Brandstätter & Opp, 2014). Furthermore, openness is negatively related to factors that predict political violence, such as social dominance orientation and authoritarianism (Henry, Sidanius, Levin, & Pratto, 2005; Thomsen, Obaidi, Sheehy-Skeffington, Kteily, & Sidanius, 2014). Kruglanski (2013) and Onraet, Van Hiel, Roets, and Cornelis (2011) have suggested that closed mindedness and ambiguity intolerance, factors related to low openness (Heaven & Bucci, 2001; Nicol & De France, 2016), impact extreme political behavior. From this literature, this paper predicts a strong and negative relationship between openness to experience and political violence, and a positive relationship with political activism. Openness is also a prime candidate for exploring heterogeneous effects in the relationship between uncertainty and violence. Since low openness signifies being closed to new experiences and being conventional (Connolly, Ones, & Chernyshenko, 2014; Gosling et al., 2003), the destabilizing effect of experiencing uncertainty may have its strongest impact in those with low levels of openness, which makes extreme groups and behaviors seem even more attractive. Those with high levels of the openness trait may be better suited to cope with uncertainty, and the relationship should therefore be smaller. If there are heterogeneous effects of uncertainty in the population, they should be revealed by the openness factor. In other words, this paper hypothesizes a negative interaction between uncertainty and openness in predicting violence.

1.2.2. Agreeableness

Agreeableness has also been a central factor in this literature. Those with higher levels of agreeableness show less political hostility towards others (Webster, 2018). Trait aggression, which is related to low agreeableness, is related to support for state and group violence

(Brandstätter & Opp, 2014; Kalmoe, 2014), and an increase in the mobilizing effect of aggressive political metaphors (Kalmoe, 2017). As with openness, this paper predicts a negative relationship between agreeableness and political violence. As agreeableness is also negatively related to social dominance orientation and authoritarianism (Henry et al., 2005), this strengthens the hypothesis. In terms of heterogeneous effects, it is unclear if agreeableness should be expected to play a role. It is not evident that high agreeableness should protect against the effects of uncertainty, but merely that the baseline support for violence should be lower.

1.2.3. Extraversion

With regards to the last three factors, extraversion, conscientiousness and neuroticism, less clear-cut hypotheses can be presented. High extraversion is related to political activism, vote switching and low political hostility (Bakker, Klemmensen, Nørgaard, & Schumacher, 2016; Vecchione et al., 2015; Webster, 2018). However, it is not reliably related to political protest (Brandstätter & Opp, 2014). Therefore, a positive relationship with activism, but not with violence, is expected. In terms of the interaction with uncertainty, no clear predictions are possible. On the one hand, extraverted gregarious individuals may be more resourceful in finding outlets for increased uncertainty. On the other hand, they may also more quickly act on extreme group norms.

1.2.4. Conscientiousness and neuroticism

Conscientiousness and neuroticism does not seem strongly correlated with political behaviors. Conscientiousness is related to political conservatism, although the relationship is weaker than that for openness (Gerber et al., 2010). Interestingly, the relationship between conscientiousness and political activism depends on whether participation is seen as a moral duty (Gallego & Oberski, 2012). As there are general moral norms against political violence, conscientiousness may be related to a rejection of political violence. A single study (Brandstätter & Opp, 2014) finds a negative relationship between neuroticism and engagement in political protest. However, for neither conscientiousness nor neuroticism can any clear expectation of a moderating role be expected, and the study should be seen as largely exploratory for these factors.

1.3. Summary of predictions

The dual purpose of this paper is to assess the generalizability of the relationship between uncertainty and political violence in population-based samples and to gauge heterogeneous effects that depend on differences in personality. While a replication of the main relationship between uncertainty and violence is expected, this should be contingent on levels of openness to experience. Openness and agreeableness are expected to correlate negatively with violence, but the literature does not lead to clear hypotheses regarding extraversion, conscientiousness, and neuroticism.

In the following analyses, support for political violence is contrasted with legal political activism. There is a debate on whether political violence is fundamentally different from activism on a psychological level (McCauley & Moskalenko, 2011). Empirically, they are positively related (Moskalenko & McCauley, 2009). Therefore, political violence is contrasted with political activism due to drivers of broad political mobilization. Furthermore, contrasting political violence with activism may reveal hitherto undiscovered distinctions between two kinds of political behavior with different governing moral norms in democratic societies. Building on this literature, activism and support for violence should not be strongly related, nor should they show identical relationships with personality and uncertainty.

In the next section, the predictions are tested in two large samples, one of young U.S. adults and one of the adult population using the 2016 American National Election Study (ANES). The ANES has previously been used to investigate the generalizability of experimental results

(DeBell, Amsbary, Meldener, Brock, & Maisel, 2018). The ANES uses probability sampling, allowing for data weights to approximate the population in a way that laboratory experiments using college or convenience samples, or even surveys that are representative on a few key variables, cannot hope to.

2. Study 1

2.1. Participants

2317 U.S. participants aged 18–30 were recruited by Lightspeed Research from an online survey panel. Data was collected in December 2017 as part of a larger study. 53% (1235) of the participants were male. 38% identified as Democrats, 24% as Republicans, and 37% as Independents.

2.2. Measures

2.2.1. Demographics and political orientation

Participants were asked to indicate their gender, age in years and current US state of residence. They were then asked to indicate their highest level of school completed on a 7-point scale ranging from less than high school to doctoral degree and whether they identified as a Democrat, a Republican or an Independent.

2.2.2. Big five personality

In study 1, the big five was measured using the 20-item "Mini-IPIP" measure developed by Donnellan, Oswald, Baird, and Lucas (2006). The measure is validated and widely used (the validation paper has 470 citations in Web of Science's core collection). Previous studies of political protest and activism have used the measure successfully (De Neve, 2015). It was selected since measures with as little as five or ten items seriously risk underestimating the role that personality traits play in behavior and therefore risk overestimating the role of other constructs (Bakker & Lelkes, 2018; Credé, Harms, Niehorster, & Gaye-Valentine, 2012).

2.2.3. Uncertainty

Uncertainty was measured similar to Goldman and Hogg (2016) through a single item asking participants "at this very moment, how uncertain do you feel about yourself, your place in the world and your future?" on a 9-point scale "very little" to "very much".

2.2.4. Political violence and activism

Measuring political violence and activism through survey methods pose several issues. First, informal norms and legal prohibitions against violence in democratic societies make asking about actual acts of violence problematic in terms of veracity and ethics. Several measures of the acceptance of and support for political violence exist in the psychological literature (Scarella, Page, & Furtado, 2016). To get closer to behavior than simply asking about attitudes, an adapted version of Moskalenko and McCauley's (2009) Activism and Radicalism Intentions scale was used. The political violent actions included attacking police at a demonstration, retaliating against innocent out-group members, going to war to defend the in-group and encouraging and joining violent protests and organizations. They also completed a five-item measure of political activism intentions. The scales showed good internal consistency (Chronbach's alpha of 0.84 for activism and 0.92 for political violence).

Table 1 shows the descriptive statistics for the sample.

2.3. Procedure

The study was presented as a study concerning personality and political participation. Participants first read a consent form. They then completed the demographic measures and the 20-item personality

Table 1
Descriptive statistics for variables in study 1.

	Mean	Standard deviation
Political violence	27.1	24.9
Activism	53.5	24.6
Uncertainty	0.54	0.29
Neuroticism	0.46	0.19
Extraversion	0.49	0.23
Openness	0.67	0.19
Agreeableness	0.67	0.19
Conscientiousness	0.63	0.19
Age (years)	26.3	3.7

Note: Uncertainty and the five personality scales scaled 0–1. Age in years. Political violence scaled 0–100. Activism scaled 0–100. N = 2317.

measure and uncertainty measure. Subsequently, they completed the political violence and activism intentions scales. Finally, participants were thanked and debriefed. No personally identifying information was collected.

2.4. Analysis and results

The twofold purpose of this paper was to investigate the generalizability of the relationship between uncertainty and political violence and to investigate possible heterogeneous relationships based on personality. To investigate the first purpose, in two models, stated intentions to engage in political activism and violence were regressed on personality and uncertainty, controlling for age, gender, partisan strength, education, and U.S. state. Results are shown in Table 2.

Uncertainty predicted both intentions to engage in violence and activism for study 1. Personality was a stronger predictor of violence than activism. Stronger intentions to engage in political violence were positively related to extraversion, but negatively related to openness, agreeableness and conscientiousness. Republicans and Independents indicated lower intentions to engage in activism than Democrats, but only Republicans indicated lower intentions to engage in violence than

Table 2

Results of two linear regression models regressing intentions to engage in political violence and political activism, respectively, on uncertainty, personality, demographics and partisan strength.

	Political violence	Activism
Uncertainty	12.0 (1.6)***	8.1 (1.8)***
Neuroticism	3.6 (2.7)	−3.6 (2.9)
Extraversion	15.7 (2.2)***	13.8 (2.3)***
Openness	−26.0 (2.7)***	5.1 (2.9)†
Agreeableness	−19.3 (2.7)***	15.5 (2.9)***
Conscientiousness	−15.1 (2.7)***	−0.54 (2.9)
Age (years)	−0.07 (0.14)	−0.21 (0.15)
Gender (male)	10.3 (0.98)***	2.7 (1.1)*
Partisan ID (ref: Democrat)		
Republican	−4.2 (1.2)***	−7.9 (1.3)***
Independent	−1.6 (1.1)	−7.7 (1.2)***
Education	−0.24 (0.34)**	0.92 (0.36)*
Adj R ²	0.23	0.09
N	2317	2317

Note: Results reported as unstandardized regression coefficients with standard errors in parentheses. Uncertainty and the five personality scales scaled 0–1. Partisan ID has Democrats as reference category. Education scaled 1–7. Gender is dummy-coded with female as reference category. Age in years. Political violence scaled 0–100. Activism scaled 0–100. Also included in the model were 49 dummy-coded variables representing the U.S. State of the respondent. Supplementary appendix A reports the full model.

† p < 0.1.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Table 3

Results of two linear regression models regressing intentions to engage in political violence and political activism, respectively, on uncertainty, personality, demographics and partisan strength and interactions.

	Political violence	Activism
Uncertainty	28.1 (15.0)†	13.2 (16.3)
Neuroticism	16.8 (5.5)**	−10.4 (6.0)†
Extraversion	7.49 (4.7)	8.7 (5.1)†
Openness	−1.7 (5.8)	18.0 (6.3)**
Agreeableness	−21.8 (5.9)***	21.9 (6.1)***
Conscientiousness	−6.3 (5.5)	2.4 (6.0)
Uncertainty by		
Neuroticism	−23.5 (8.8)**	12.7 (9.6)
Extraversion	15.0 (7.4)*	7.6 (8.1)
Openness	−40.1 (9.1)***	−19.7 (9.9)*
Agreeableness	4.3 (9.2)	−13.2 (10.0)
Conscientiousness	−13.8 (8.8)	−3.2 (9.6)
Partisan ID (ref: Democrat)		
Republican	10.3 (4.3)*	0.97 (4.7)
Independent	2.0 (3.8)	−11.0 (4.1)**
Gender (male)	10.1 (3.5)*	−2.8 (3.8)
Age	−0.64 (0.49)	−0.20 (0.53)
Education	4.2 (1.2)***	3.6 (1.3)**
Age (years)	0.18 (0.30)	−0.19 (0.32)
Gender (male)	4.4 (2.1)*	3.8 (2.3)†
Partisan ID		
Republican	−10.4 (2.6)***	1.2 (4.5)
Independent	−2.9 (2.4)	−8.7 (2.9)**
Education	−2.0 (0.74)**	−1.6 (2.6)
Adj. R ²	0.27	0.12
N	2317	2317

Note: Results reported as unstandardized regression coefficients with standard errors in parentheses. Uncertainty and the five personality scales scaled 0–1. Partisan ID has Democrats as reference category. Education scaled 1–7. Gender is dummy-coded with female as reference category. Age in years. Political violence scaled 0–100. Activism scaled 0–100. Also included in the model were 49 dummy-coded variables representing the U.S. State of the respondent. Supplementary appendix A reports the full model.

† p < 0.1.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Democrats. Being male predicted higher scores on intentions to engage in violence.

The next step was investigating possible heterogeneous effects contingent on personality. Two models regressed intentions to engage in political violence and intentions to engage in political activism on the same variables as in the first part of the analysis, but this time including interaction terms for uncertainty and each of the big five personality scales. Also included as controls were interaction terms between the control variables and the uncertainty measure, as recently pointed out as best practice in such models (Hainmueller, Mummolo, and Yiqing, forthcoming). Results are shown in Table 3.

Uncertainty interacted negatively with neuroticism, extraversion and openness to predict intentions to engage in violence, but only with openness to predict intentions to engage in activism. For interaction hypotheses, we should investigate the linearity of the interaction relationships (Hainmueller, Mummolo, and Yiqing, forthcoming). Therefore, binning and LOESS using the STATA package “interflex” were used to assess these. The results are reported in supplementary appendix B. Results indicated that while the linearity assumption holds for openness in predicting both activism and support for political violence, for neuroticism and conscientiousness, there are signs of an inverse U-shape: For high neuroticism and conscientiousness, average levels of uncertainty seems to be most strongly related to support for political violence. Caution is needed in interpreting these relationships. There were significant interactions between uncertainty and gender and between uncertainty and education. Furthermore, the link between

uncertainty and violence was stronger for Republicans than for Democrats.

To conceptually replicate and investigate the results in a population representative sample, similar analyses were carried out using the 2016 ANES dataset.

3. Study 2

3.1. Participants

The 2016 ANES time series study includes 5680 respondents interviewed around the 2016 U.S. presidential election, selected from the sample universe of U.S. eligible voters. 2489 participants had complete data on the relevant variables for this study, and were selected for inclusion. 51% (1269) of this sample were male.

3.2. Measures

3.2.1. Demographics and political orientation

Demographic variables were education, political efficacy, age, gender, and partisan strength. Partisan strength was measured through the question “Generally speaking do you think of yourself as a Democrat, a Republican, or an Independent?”. The respondents who answered Democrat or Republican were asked if they considered themselves strong or not very strong Democrats or Republicans. The ones who indicated that they were Independents were asked whether they considered themselves closer to the Democrats or the Republicans. The response categories were combined into a single 7-point scale ranging from strong Democrat over Independent to strong Republican. Political efficacy was included as control as it may influence both the respondent's level of uncertainty, as those with less efficacy may experience greater uncertainty, and engagement in activism and support for political violence. It was measured through four items asking respondents whether they felt they understood politics, understood political issues, that public officials cared what people think, and that they had a say in what the government does. The respondent's education was coded into 16 categories, ranging from “less than 1st grade” to “doctorate degree”.

3.2.2. Big five personality

Big five personality was measured with the Ten Item Personality Inventory (TIPI), which measures each trait using two items (Gosling et al., 2003). Respondents were asked how well they thought a pair of words described them, from “extremely poorly” to “extremely well”. This short-form is strongly correlated with longer measures of big five personality (Gosling et al., 2003).

3.2.3. Uncertainty

Uncertainty is defined as uncertainty related to an individual's self, place in the world, and future (Hogg, 2014). Since no scale targeted uncertainty specifically, an index was constructed from six items that captured the theoretical concept. These were: anxiety about one's financial situation, uncertainty with respect to one's health care costs and health situation, the perception of being worse off than last year and the anticipation that next year will be worse, and worry about getting a job if unemployed or losing one's job if employed. All items had the same five response categories from “not at all” to “extremely”. Importantly, the questions concern individually perceived uncertainties rather than structural factors such as attitudes towards the economy as a whole, the job market, or the healthcare sector. First, an exploratory factor analysis was warried out on the 2012 ANES dataset. One factor had an eigenvalue above 1, with all items loading positively and above 0.3, indicating that the items tap a single underlying construct. Average inter-item covariance was 0.31, within the recommended range for shorter scales (Briggs & Cheek, 1986). Alpha reliability for the scale was 0.62, and no item could be dropped without a decrease in reliability.

While this level is generally considered relatively low, for smaller scales alpha reliabilities above 0.6 can be adequate (Clark & Watson, 1995). The lower level of reliability can create a more noisy measure, making it more difficult to detect effects, a concern that is taken up in the discussion. Second, using the 2016 dataset and STATA's structural equation module, a confirmatory factor analysis (CFA) was carried out using the six items as manifest indicators of the latent factor of uncertainty. Hu and Bentler (1999) recommend cutoffs for TLI and CFI of 0.95, SRMS of 0.09, and RMSEA of 0.05 when evaluating model fit. The CFA fit indices were acceptable: TLI = 0.95; CFI = 0.980; SRMR = 0.03; RMSEA = 0.050. Supplementary appendix C shows the results of the exploratory and confirmatory factor analyses.

3.2.4. Political violence and activism

Support for political violence was measured as the response on a five-point scale to the question: “How much do you feel it is justified for people to use violence to pursue their political goals in this country?”. Political activism was measured as an index constructed from respondents' indication of previous engagement in nine acts of political activism. These items asked participants whether they had, in the last four years, engaged in each of the following behaviors: attended a protest march; attended a city board; signed a paper petition; signed an online petition; given money to a religious, social or political organization; called radio or television about political issues; discussed political issues on social media; written a letter to a newspaper about a political issue; or contacted a congressman or senator. Alpha reliability for this scale was 0.70. An exploratory factor analysis (principal components) showed a single factor with an eigenvalue above 1 and item loadings above 0.3. Activism and support for political violence were unrelated ($t = -1.56$, $p = 0.120$).

Descriptive statistics for the sample are reported in Table 4.

3.3. Procedure

Data collection was carried out between November 2016 and January 2017. Interviewers took part in a 20-hour training course prior to fieldwork. Participants were recruited using address-based sampling, and received a prepaid incentive (5–20 USD) and a final payment upon completion of each part of the entire interview (30–180 USD). The median time spent on each interview was 80 min for face-to-face interviews and 68 min for the internet based interviews. Participants completed questions concerning voting behavior, evaluations of politicians, demographics, political engagement, predispositions, group identity and stance on political issues. Details of the recruitment and interviewing procedure are summarized in the Methodology Report for the ANES 2016 Time Series Study (DeBell et al., 2018).

Table 4

Descriptive statistics for variables in study 2.

	Mean	Standard deviation
Political violence	1.3	0.77
Activism	1.1	1.5
Uncertainty	0.41	0.18
Neuroticism	0.35	0.21
Extraversion	0.54	0.23
Openness	0.68	0.19
Agreeableness	0.68	0.19
Conscientiousness	0.77	0.19
Age (years)	42.5	14.7
Efficacy	0.46	0.17
Partisan strength	3.7	2.1

Note: Results reported as unstandardized regression coefficients with standard errors in parentheses. Uncertainty, the five personality scales, and efficacy scales 0–1. Partisan strength scaled 1–7. Age in years. Political violence scaled 1–5. Activism scaled 0–9. Data weighted to match U.S. adult population.

Table 5

Results of two linear regression models regressing support for political violence and past political activism, respectively, on uncertainty, personality, demographics and partisan strength.

	Political violence	Activism
Uncertainty	0.07 (0.09)	-0.18 (0.18)
Neuroticism	-0.04 (0.08)	0.41 (0.15)*
Extraversion	0.13 (0.07)	0.50 (0.13)***
Openness	-0.20 (0.09)*	1.3 (0.18)***
Agreeableness	-0.15 (0.09) [†]	0.13 (0.17)
Conscientiousness	-0.48 (0.09)***	-0.37 (0.17)*
Age (years)	-0.01 (0.001)***	-0.02 (0.02)
Gender (male)	0.001 (0.03)	0.05 (0.06)
Partisan strength	-0.02 (0.007)*	-0.08 (0.01)***
Efficacy	-0.04 (0.09)	1.1 (0.18)***
Education	-0.04 (0.01)***	0.06 (0.01)***
Adj R ²	0.07	0.09
N	2489	2489

Note: Results reported as unstandardized regression coefficients with standard errors in parentheses. Uncertainty, the five personality scales, and efficacy scales 0–1. Partisan strength scaled 1 (strong Democrat) to 7 (strong Republican). Education scaled 1–16. Gender is dummy-coded with female as reference category. Age in years. Political violence scaled 1–5. Activism scaled 0–9. Data weighted to match U.S. adult population.

[†] $p < 0.1$.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

3.4. Analysis and results

The analysis for the second sample proceeded similarly to that of study 1. First, the direct relationship between uncertainty, personality and support for political violence and previous engagement in activism was gauged in order to investigate the generalizability of the relationship. Second, potential heterogeneous relationships were investigated via the interactions between uncertainty and personality.

In two models, each of the dependent variables in this study, that is, support for political violence and engagement in activism, were regressed on personality and uncertainty, controlling for partisan strength, education, political efficacy, age, and gender. Table 5 shows the results of these analyses.

Openness, conscientiousness, partisan strength, age, and education, and agreeableness (marginally) negatively and significantly predicted support for political violence. Neuroticism, extraversion, openness, political efficacy, and education significantly and positively predicted engaging in political activism. Conscientiousness and partisan strength significantly and negatively predicted activism. Uncertainty did not predict support for political violence or political activism on average, although the coefficients were in the expected direction.

Next, support for political violence and activism were regressed on the independent variable, including interaction terms between uncertainty and each of the five personality factors. Table 6 reports the results of this analysis.

Uncertainty interacted negatively with neuroticism, openness, and partisan strength to predict support for political violence. Uncertainty interacted negatively with extraversion but positively with conscientiousness to predict activism. Since the linearity and LOESS analyses cannot incorporate the external weights, the tests for linearity of the interaction were conducted without weights. The LOESS plots and results of binning are shown in supplementary appendix B. Overall, they indicate that the linearity assumption holds for openness and extraversion, but less so for neuroticism and conscientiousness.

4. Discussion and conclusion

When political hostilities and schisms ignite, violence often follows.

Table 6

Results of two linear regression models regressing support for political violence and past political activism, respectively, on uncertainty, personality, demographics and partisan strength and interactions.

	Political violence	Activism
Uncertainty	2.7 (0.76)***	-2.4 (1.5)
Neuroticism	0.44 (0.19)*	0.41 (0.36)
Extraversion	-0.07 (0.16)	1.6 (0.31)***
Openness	0.65 (0.22)**	1.1 (0.43)*
Agreeableness	-0.16 (0.21)	0.03 (0.42)
Conscientiousness	-0.25 (0.23)	-1.3 (0.44)*
Uncertainty by		
Neuroticism	-1.2 (0.43)**	-0.04 (0.82)
Extraversion	0.47 (0.38)	-2.7 (0.73)***
Openness	-2.0 (0.51)***	0.23 (0.98)
Agreeableness	-0.02 (0.50)	0.15 (0.96)
Conscientiousness	-0.49 (0.51)	2.2 (0.99)*
Age (years)	-0.009 (0.007)	-0.03 (0.01)*
Gender (male)	0.27 (0.18)	-0.09 (0.35)
Partisan strength	-0.12 (0.04)**	0.32 (0.08)***
Efficacy	-0.37 (0.51)	0.53 (0.98)
Education	0.02 (0.04)	0.12 (0.08)
Age (years)	-0.002 (0.003)	0.007 (0.006)
Gender (male)	-0.11 (0.08)	0.06 (0.16)
Partisan strength	0.03 (0.02) [†]	-0.21 (0.04)***
Efficacy	0.11 (0.23)	0.89 (0.44)*
Education	-0.04 (0.02)*	0.01 (0.03)
Adj. R ²	0.08	0.10
N	2524	2524

Note: Results reported as unstandardized regression coefficients with standard errors in parentheses. Uncertainty, the five personality scales, and efficacy scales 0–1. Partisan strength scaled 1 (strong Democrat) to 7 (strong Republican). Education scaled 1–16. Gender is dummy-coded with female as reference category. Age in years. Political violence scaled 1–5. Activism scaled 0–9. Data weighted to match U.S. adult population.

[†] $p < 0.1$.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

A key factor in political violence is the experience of uncertainty in individuals' lives. However, the empirical psychological knowledge of the relationship between uncertainty and political violence stems from laboratory or online studies using convenience samples or from macro-level sociological indicators of uncertainty and political violence. This paper had a twofold purpose. First, it aimed to assess the generalizability of the relationship between uncertainty and political violence in the adult U.S. population. Second, it aimed to investigate possible heterogeneous effects conditioned by differences in personality.

The results show the importance of such an approach. In the first study, but not the second, uncertainty significantly predicted intentions to engage in political violence. Across the two studies, lower levels of the personality traits of openness, agreeableness and conscientiousness predicted intentions to engage in political violence and support for political violence. Democrats indicated stronger intentions to engage in and support for political violence than Republicans. Several heterogeneous effects were found, as indicated by interactions between personality and uncertainty. Across studies, high neuroticism and openness depressed the relationship between uncertainty and political violence. In the following sections, these results are compared to the hypotheses and the previous findings. The paper then contrasts the findings with those for activism and considers limitations and implications.

4.1. Generalizing existing research

Previous research leads to the expectation of a negative relationship between openness and political violence (Gallego & Oberski, 2012). Furthermore, if there were heterogeneous effects of uncertainty on political violence, they should be contingent on openness. These

predictions were supported in both studies, and results were robust to tests of the linearity assumption. The strongest relationship between uncertainty and political violence was found in those with low levels of openness. The consistency of the results across different samples, measures of uncertainty and personality, and across intentions to engage in and support for political violence makes this a substantially significant finding. There is not a blanket relationship between uncertainty and political violence for everyone regardless of their individual dispositions. Rather, the instability of experiencing uncertainty is strongest for those closest to experience. Since openness is related to coping with adversity through problem solving and cognitive restructuring (Connor-Smith & Flachsbart, 2007), such mechanisms may be central to resolving aversive perceptions of uncertainty as well.

The expected negative relationship between agreeableness and political violence was supported. This may be due to the negative relationship with trait aggression (Kalmoe, 2014), and confirms previous research that indicates agreeableness as a buffer against extreme protest and violence (Webster, 2018). On the one hand, the negative relationship between conscientiousness and political violence fits the expectation that moral norms prohibiting violence should effect those with high levels of conscientiousness (Gallego & Oberski, 2012). On the other hand, conscientiousness was also negatively related to activism, perhaps indicating that other facets of conscientiousness are involved, such as orderliness or self-control (Whiteside & Lynam, 2001).

No direct relationship between neuroticism and political violence or activism was found, and no prediction was made for this factor. Surprisingly, however, there was a negative interaction between neuroticism and uncertainty in predicting political violence in both studies, indicating a weaker relationship between uncertainty and political violence for those with high levels of neuroticism, i.e. people prone to negative emotionality and an anxious disposition. No such relationship was found in predicting activism. Perhaps problematic coping strategies associated with neuroticism (Connor-Smith & Flachsbart, 2007) means that uncertainty impacts neurotic individuals more severely, but rather than leading to action, it instead inhibits it. However, as this relationship was not hypothesized, and because the linearity tests showed indications of a non-linear interaction, this finding should not be over interpreted. Other results that did not replicate across samples, such as the role of extraversion, indicate the value of replicating findings using different measures and samples. While it seems that extraversion is related to political activism, as the literature suggests (Vecchione et al., 2015), it is not a strong predictor of political violence.

One result for the demographic variables, although not the focus and mainly included as controls, deserves mention. Across studies, Democrats indicated stronger intentions to engage in and support both political violence and activism than Republicans did. While these results may indicate stable differences between supporters of the two parties, there is another possibility. Data collection for the two samples occurred at the 2016 presidential election and ten months into the new presidency, respectively. Both measures of political violence were examples of non-state violence, which may appeal more to people in the weaker position of political opposition than those in power. This explanation is compatible with the finding that the uncertainty-violence relationship was stronger for Republicans than for Democrats, even after factoring out the intertwined openness factor. While the baseline higher likelihood that liberals grab the pitchfork may be due to their opposition status, for conservatives it seems that the level of uncertainty is a central factor.

The analyses contrasted political violence with legal political activism, because the literature has debated whether they are best conceptualized as distinct concepts or as points on a spectrum of political behavior (McCauley & Moskalenko, 2011). The results of this paper will not put that discussion to rest, but at least indicate that there are both similarities and differences in how they relate to uncertainty and personality. Specifically, while agreeableness and openness were positively related to activism and negatively related to political violence,

conscientiousness and extraversion tend to be positively related to both activism and political violence. While interpersonal hostility and closed mindedness seem to distinguish political violence and activism, both kinds of political behavior involve gregariousness and impulsivity.

4.2. Limitations

This study has focused on the generalizability and possible heterogeneous effects of personality traits in the relationship between uncertainty and political violence. The samples were both observational in nature, and do not allow for causal judgements. However, existing experimental studies have indicated that uncertainty is indeed causally related to politically extreme behaviors. As internal and external validity should be judged on the basis of the sum of empirical work rather than for each sample separately, the lack of internal validity in the present study is less of a concern. Furthermore, the two samples used different operationalizations of uncertainty and still found similar results, which supports the proposed relationship. Since uncertainty could not be measured directly in study 2, an index was created from six items in the ANES. Although the exploratory and confirmatory factor analyses of this measure indicated that it was adequate, it had a relatively low alpha reliability, indicating a more noisy index, which negatively impact measurement validity. However, the central hypotheses were supported across the two studies, alleviating these concerns. While a more noisy measure increases the risk that null-findings and those findings that did not replicate across the studies are instances of type II error, the advantages of gauging replicability across studies using different samples and measures make up for this shortcoming.

4.3. Conclusion

Acts of political violence, beyond their human and material damage, have negative consequences for intergroup relations and peaceful democratic participation, and increase mistrust and unrest between political groups and factions within society. Two existing literatures, one social psychological and one sociological, point to the role of uncertainty in driving support for political violence. However, while the social psychological literature lacks external validity, the sociological literature lacks measurement validity. In two large samples, this paper shows that the relationship between uncertainty and political violence generalizes to the adult population only when heterogeneous effects of personality is taken into account. Specifically, the relationship between uncertainty and support for and intentions to engage in political violence is strongest for individuals with low levels of openness to experience. Interestingly, while those who identify as Democrats indicate higher baseline support for political violence, the relationship between uncertainty and political violence is stronger for Republicans than Democrats. The results show the importance of investigating the generalizability of findings from samples with limited heterogeneity as well as the broad impact on personality in political behavior. Substantially, this paper has indicated that the combination of low openness and strong uncertainty is a high-risk mix not only in a limited part of the population, but across groups and issue cleavages.

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References

- Bakker, B. N., Klemmensen, R., Nørgaard, A. S., & Schumacher, G. (2016). Stay loyal or exit the party? How openness to experience and extraversion explain vote switching. *Political Psychology*, 37(3), 419–429.

- Bakker, B. N., & Lelkes, Y. (2018). Selling ourselves short? How abbreviated measures of personality change the way we think about personality and politics. *The Journal of Politics*, 80(4), <https://doi.org/10.1086/698928> online first.
- Brandstätter, H., & Opp, K. D. (2014). Personality traits ("Big Five") and the propensity to political protest: Alternative models. *Political Psychology*, 35(4), 515–537.
- Brewer, M. B., & Pierce, K. P. (2005). Social identity complexity and outgroup tolerance. *Personality and Social Psychology Bulletin*, 31(3), 428–437.
- Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality*, 54(1), 106–148. <https://doi.org/10.1111/j.1467-6494.1986.tb00391.x>.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3–5.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309–319.
- Connelly, B. S., Ones, D. S., & Chernyshenko, O. S. (2014). Introducing the special section on openness to experience: Review of openness taxonomies, measurement, and nomological net. *Journal of Personality Assessment*, 96(1), 1–16.
- Connor-Smith, J. K., & Flachsbart, C. (2007). Relations between personality and coping: A meta-analysis. *Journal of Personality and Social Psychology*, 93(6), 1080–1107.
- Créde, M., Harms, P., Niehorster, S., & Gaye-Valentine, A. (2012). An evaluation of the consequences of using short measures of the Big Five personality traits. *Journal of Personality and Social Psychology*, 102(4), 874–888.
- Davenport, C. (2007). State repression and political order. *Annual Review of Political Science*, 10, 1–23.
- De Neve, J. E. (2015). Personality, childhood experience, and political ideology. *Political Psychology*, 36(1), 55–73.
- DeBell, M., Amsbury, M., Meldener, V., Brock, S., & Maisel, N. (2018). *Methodology report for the ANES 2016 time series study*. Palo Alto, CA, and Ann Arbor, MI: Stanford University and the University of Michigan. Available online at http://www.electionstudies.org/studypages/anes_timeseries_2016/anes_timeseries_2016_methodology_report.pdf.
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, 18(2), 192–203.
- Druckman, J. N., & Kam, C. D. (2010). Students as experimental participants: A defense of the 'Narrow Data Base'. In J. N. Druckman, D. P. Green, J. H. Kuklinski, & A. Lupia (Eds.). *Handbook of experimental political science*. New York: Cambridge University Press.
- Fatke, M. (2017). Personality traits and political ideology: A first global assessment. *Political Psychology*, 38(5), 881–899.
- Gallego, A., & Oberski, D. (2012). Personality and political participation: The mediation hypothesis. *Political Behavior*, 34(3), 425–451.
- Gerber, A. S., Huber, G. A., Doherty, D., Dowling, C. M., & Ha, S. E. (2010). Personality and political attitudes: Relationships across issue domains and political contexts. *American Political Science Review*, 104(1), 111–133.
- Goldman, L., & Hogg, M. A. (2016). Going to extremes for one's group: The role of prototypicality and group acceptance. *Journal of Applied Social Psychology*, 46(9), 544–553.
- Gómez, Á., López-Rodríguez, L., Sheikh, H., Ginges, J., Wilson, L., Waziri, H., ... Atran, S. (2017). The devoted actor's will to fight and the spiritual dimension of human conflict. *Nature Human Behaviour*, 1(9), 673–679.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big Five personality domains. *Journal of Research in Personality*, 37, 504–528.
- Götzsche-Astrup, O. (2018). The time for causal designs: Review and evaluation of empirical support for mechanisms of political radicalisation. *Aggression and Violent Behavior*, 39, 90–99.
- Gurr, T. (1970). *Why men rebel*. Princeton, NJ: Princeton University Press.
- Hainmueller, J., Mummolo, J., & Xu, Y. (2018). *How Much Should We Trust Estimates from Multiplicative Interaction Models? Simple Tools to Improve Empirical Practice* (April 20, 2018). *Political Analysis*<https://doi.org/10.2139/ssrn.2739221> forthcoming.
- Hauser, D. J., & Schwarz, N. (2016). Attentive Turkers: MTurk participants perform better on online attention checks than do subject pool participants. *Behavior Research Methods*, 48(1), 400–407.
- Heaven, P. C., & Bucci, S. (2001). Right-wing authoritarianism, social dominance orientation and personality: An analysis using the IPIP measure. *European Journal of Personality*, 15(1), 49–56.
- Henry, P. J., Sidanius, J., Levin, S., & Pratto, F. (2005). Social dominance orientation, authoritarianism, and support for intergroup violence between the Middle East and America. *Political Psychology*, 26(4), 569–584.
- Hogg, M. A. (2014). From uncertainty to extremism: Social categorization and identity processes. *Current Directions in Psychological Science*, 23(5), 338–342.
- Hogg, M. A., Abrams, D., & Brewer, M. B. (2017). Social identity: The role of self in group processes and intergroup relations. *Group Processes & Intergroup Relations*, 20(5), 570–581.
- Hogg, M. A., & Adelman, J. (2013). Uncertainty–identity theory: Extreme groups, radical behavior, and authoritarian leadership. *Journal of Social Issues*, 69(3), 436–454.
- Hogg, M. A., Kruglanski, A., & Bos, K. (2013). Uncertainty and the roots of extremism. *Journal of Social Issues*, 69(3), 407–418.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Kalmoe, N. P. (2014). Fueling the fire: Violent metaphors, trait aggression, and support for political violence. *Political Communication*, 31(4), 545–563.
- Kalmoe, N. P. (2017). Mobilizing voters with aggressive metaphors. *Political Science Research and Methods*, 1–19. Advance online publication <https://doi.org/10.1017/psrm.2017.36>.
- Kruglanski, A. W. (2013). *The psychology of closed mindedness*. New York: Psychology Press.
- Kunst, J. R., Boos, B., Kimel, S. Y., Obaidi, M., Shani, M., & Thomsen, L. (2018). Engaging in extreme activism in support of others' political struggles: The role of politically motivated fusion with out-groups. *PLoS One*, 13(1), e0190639.
- Lee, B. X. (2016). Causes and cures VI: The political science and economics of violence. *Aggression and Violent Behavior*, 28, 103–108.
- Littman, R., & Paluck, E. L. (2015). The cycle of violence: Understanding individual participation in collective violence. *Political Psychology*, 36(S1), 79–99.
- McCauley, C. R., & Moskalenko, S. (2011). *Friction: How radicalization happens to them and us*. New York, NY: Oxford University Press.
- Merrilees, C. E., Cairns, E., Taylor, L. K., Goeke-Morey, M. C., Shirlow, P., & Cummings, E. M. (2013). Social identity and youth aggressive and delinquent behaviors in a context of political violence. *Political Psychology*, 34(5), 695–711.
- Mondak, J. J., Hibbing, M. V., Canache, D., Seligson, M. A., & Anderson, M. R. (2010). Personality and civic engagement: An integrative framework for the study of trait effects on political behavior. *American Political Science Review*, 104(1), 85–110.
- Moskalenko, S., & McCauley, C. (2009). Measuring political mobilization: The distinction between activism and radicalism. *Terrorism and Political Violence*, 21(2), 239–260.
- Muller, E. N. (1985). Income inequality, regime repressiveness, and political violence. *American Sociological Review*, 50(1), 47–61.
- Nicol, A. A., & De France, K. (2016). The Big Five's relation with the facets of right-wing authoritarianism and social dominance orientation. *Personality and Individual Differences*, 98, 320–323.
- Onraet, E., Van Hiel, A., Roets, A., & Cornelis, I. (2011). The closed mind: 'Experience' and 'cognition' aspects of openness to experience and need for closure as psychological bases for right-wing attitudes. *European Journal of Personality*, 25(3), 184–197.
- Rast, D. E., III, Hogg, M. A., & Giessner, S. R. (2013). Self-uncertainty and support for autocratic leadership. *Self and Identity*, 12(6), 635–649.
- Scarella, A., Page, R., & Furtado, V. (2016). Terrorism, radicalisation, extremism, authoritarianism and fundamentalism: A systematic review of the quality and psychometric properties of assessments. *PLoS One*, 11(12), e0166947.
- Shadmehr, M. (2014). Mobilization, repression, and revolution: Grievances and opportunities in contentious polities. *The Journal of Politics*, 76(3), 621–635.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W. G. Austing, & S. Worcel (Eds.). *The social psychology of intergroup relations* (pp. 33–47). Monterey, Brooks Cole.
- Thomsen, L., Obaidi, M., Sheehy-Skeffington, J., Kteily, N., & Sidanius, J. (2014). Individual differences in relational motives interact with the political context to produce terrorism and terrorism-support. *Behavioral and Brain Sciences*, 37(4), 377–378.
- Vecchione, M., Schwartz, S. H., Caprara, G. V., Schoen, H., Cieciuch, J., Silvester, J., ... Mamali, C. (2015). Personal values and political activism: A cross-national study. *British Journal of Psychology*, 106(1), 84–106.
- Wang, T. Y., Dixon, W. J., Muller, E. N., & Seligson, M. A. (1993). Inequality and political violence revisited. *American Political Science Review*, 87(4), 979–993.
- Webster, S. W. (2018). It's personal: The Big Five personality traits and negative partisan affect in polarized US politics. *American Behavioral Scientist*, 0002764218756925.
- Whitehouse, H. (2018). Dying for the group: Towards a general theory of extreme self-sacrifice. *Behavioral and Brain Sciences*, 1–64. <https://doi.org/10.1017/S0140525X18000249>.
- Whiteside, S. P., & Lynam, D. R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences*, 30(4), 669–689.