


System Justification and Affective Responses to Terrorism: Evidence from the November 2015 Paris Attacks

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A large stream of research has shown that emotional reactions have a powerful impact on political choices and decision-making processes. Yet little is known about individual-level differences in experiencing specific emotions in the light of threatening events. In this article, we argue that system justification, or the endorsement and bolstering of existing social and political arrangements, is positively associated with the experience of positive emotions and negatively associated with the experience of negative emotions in the light of threat. We test our hypotheses using a study conducted a few days after the November 13, 2015, Paris terror attacks on a large sample in France. Our results show that system justification was positively associated with experiencing hope in the light of the attacks and negatively associated with experiencing fear and anger. Moreover, the size of these effects exceeded the respective size of other psychological characteristics such as authoritarianism, conservatism, and national attachment. These findings extend research on the palliative function of system justification to the domain of emotional responses to terrorist shocks.

KEY WORDS: emotions, system justification, terrorism, personality

A large and emerging stream of research in social and political psychology has illustrated that citizens' emotional reactions toward various stimuli have a powerful impact on different types of political behavior, including decision-making processes, political attitudes, participation, and vote choice (Albertson & Gadarian, 2015; Banks, 2014; Banks & Valentino, 2012; Brader, 2005; Marcus, Neuman, & MacKuen, 2000; Marcus, Valentino, Vasilopoulos, & Foucault, 2019; Suhay & Erisen, 2018; Valentino, Brader, Groenendyk, Gregorowicz, & Hutchings, 2011; Vasilopoulos, 2018; Vasilopoulos, Marcus, & Foucault, 2018; Vasilopoulos, Marcus, Valentino, & Foucault, 2019; Wagner, 2014). Yet much less is known about the individual-level correlates of experiencing different emotions, and especially collective emotions. The bulk of studies on emotions and politics find that the same stimulus evokes different emotions and with different intensity. For instance, a threatening event such as a terror attack or an economic crisis evokes fear in some and anger or even hope in others. The reasons behind the heterogeneity of affective responses are often explained by individual-level differences in personality traits or psychological dispositions such as conservatism or authoritarianism (Jost, Glaser, Kruglanski, & Sulloway, 2003; Van der Zee & Van der Gang, 2007; Watson & Clark, 1992).

In this article, we aim at advancing current knowledge about the correlates of emotional arousal from a system justification perspective. System justification is a general psychological motivation to preserve and bolster the social system to which one belongs (Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004). System justification serves a palliative function by reducing negative affect and increasing positive affect in the light of injustice, uncertainty, or threat. Past research has associated system justification with various aspects of political behavior, including ideology, attitudes, participation in political protest, and vote choice (Jost, 2006; Jost et al., 2003, 2004, 2012; Jost, Federico, & Napier, 2009). In this article, we investigate the association of system-justifying attitudes, along with a number of other psychological characteristics, with the experience of fear, anger, and hope in the light of the November 13, 2015, Paris terror attacks. These events were the deadliest on French soil since the end of World War II. They involved a series of organized attacks in several locations of the French capital, including bars, restaurants, a concert venue, and a football stadium, that resulted in a total of 130 deaths and more than 400 injured.

We argue that system justification should be associated with the French population's emotional responses to the Paris terror attacks. Specifically, we anticipated that system-justifying attitudes would play a palliative role, reducing the experience of negative emotions and increasing the experience of positive emotions. We tested our claims using data collected a few days after the attacks. Our findings show that system-justifying attitudes were negatively associated with the experience of fear and anger following the attacks and strongly and positively associated with experiencing hope. Further, our results show that the magnitude of the association between system justification and emotional arousal exceeded the respective magnitude of authoritarianism, left-right ideology, and national attachment.

Theoretical Section

Emotional Reactions

Emotional reactions serve the function of facilitating instantaneous assessments of the external environment and inciting rapid behavioral operations. Research suggests the presence of two main affective systems: one that motivates approach tendencies toward a stimulus and one that motivates avoidance tendencies. Earlier theorists suggested that the approach system is governed by positive affective reactions while the avoidance system is governed by negative affective reactions (Gray, 1990). However, a more recent stream of research provides evidence that point to a distinction between negative affective states. Specifically, fear and anger have been theorized as leading to different appraisals and behaviors, the former being an avoidance emotion and the latter an approach emotion (Carver & Harmon-Jones, 2009; Harmon-Jones, 2003). Hence, approach emotions include the emotional dimension of *enthusiasm* that encompasses terms such as joy, happiness, pride, and hope and *anger* that covers affective states such as hatred, bitterness, and resentment (MacKuen, Wolak, Keele, & Marcus, 2010; Marcus, Neuman, & MacKuen, 2017). Avoidance emotions include the emotional dimension of fear that comprises anxiety, nervousness, and fright. The different semantic terms indicate different levels of intensity of the emotional dimension (Marcus, Neumann, & MacKuen, 2017).

Emotional reactions stem from different appraisals of a stimulus for an individual's circumstances (Lazarus, 1991; Smith & Ellsworth, 1985). These appraisals may arise before or after conscious awareness (Clore & Ortony, 2008). Different combinations of appraisals (such as goal congruence or incongruence, novelty, or certainty) evoke different emotions. Hope/enthusiasm is an emotional dimension oriented toward prospective or attained rewards and triggered in instances where the individual successfully executes tasks (Marcus et al., 2000). It has also been argued that apart from positive circumstances, hope may also be triggered following a threatening event as one is "fearing the worst but yearning for better" (Lazarus, 1991, p. 282), maintaining a belief of a positive outcome in an uncertain situation (Smith & Ellsworth, 1985).

Anger is elicited when one appraises that her objectives have been impeded (including in situations that involve physical, material, or symbolic threat), there is a clear attribution of responsibility, and the individual feels confident in her resources for addressing the threat (Carver & Harmon-Jones, 2009; Ellsworth, 2013; Frijda, 1986; Lazarus, 1991; Smith & Ellsworth, 1985). Other theorists have added that intentionality by an external agent or the violation of cherished norms and values are also important appraisals that elicit anger (Ellsworth, 2013; Marcus et al., 2000; Smith & Ellsworth, 1985). Once experienced, anger mobilizes individuals into action and elicits risk-seeking, aggressive and punitive behavioral strategies (Carver & Harmon-Jones, 2009; Lerner & Keltner, 2001).

Fear, on the other hand, is triggered in conditions of uncertainty that entail the prospect of harm and when individuals confront a threatening stimulus that is perceived as novel and unfamiliar (Ellsworth, 2013; Marcus et al., 2000; Smith & Ellsworth, 1985). Further, fear is associated with lack of control and evoked when individuals feel that they do not have effective resources to cope with the threat (Lazarus, 1991; Lerner & Keltner, 2000, 2001; Marcus et al., 2000). Fear incites risk-averse behavior, rendering individuals more sensitive toward losses rather than rewards (Lerner & Keltner, 2001). Further, fear motivates information-seeking processes and consequently renders one more open to persuasion (Marcus et al., 2000; Redlawsk, Civettini, & Emmerson, 2010). Fear and anger are the two most widely experienced emotions following a terrorist attack (Huddy, Feldman, Taber, & Lahav, 2005; Vasilopoulos et al., 2018, 2019).

Past research in psychology has found that experiencing positive and negative emotions in everyday interactions varies with psychological characteristics rooted in personality. Personality influences affective outcomes in at least two ways. First, personality traits may influence the appraisal process that evokes distinct emotions (Leger, Charles, Turiano, & Almeida, 2016; Mroczek & Almeida, 2004; Suls, 2001). Further, personality traits are also associated with differences in adopting successful coping mechanisms following exposure to a threatening stimulus (Leger et al., 2016).

The most consistent findings on the association between personality dimensions and affective experiences concern the traits of neuroticism and extraversion. Neuroticism has time and again been found to be positively associated with anxiety and negatively associated with positive emotions such as joy and enthusiasm (Leger et al., 2016; Mroczek & Almeida, 2004; Shiota, Keltner, & John, 2006; Suls, 2001; Watson & Clark, 1992). Individuals scoring high in neuroticism are more likely to appraise that their coping capacity for dealing with a threatening stimulus is low and in turn tend to be more reactive to various stressors compared to people scoring low in this trait (Mroczek & Almeida, 2004; Penley & Tomaka, 2002; Suls, 2001). Further, they tend to employ suboptimal coping strategies such as self-blame or denial that further render them more likely to experience negative emotions (Leger et al., 2016; Suls, 2001). Extraversion on the other hand has been consistently found to be negatively associated with experiencing negative emotionality and positively associated with experiencing positive emotionality (Penley & Tomaka, 2002; Van der Zee & Van der Gang, 2007; Watson & Clark, 1992). Extrovert individuals tend to exhibit higher confidence vis-à-vis threatening stimuli that renders them less likely to react with fear (Penley & Tomaka, 2002). Regarding the rest of the traits, some studies have found that openness to new experiences and conscientiousness are associated with some aspects of positive emotionality such as joy and amusement (Shiota et al., 2006).

A second group of studies have investigated how emotional responses differ along other psychological dispositions, with an emphasis on authoritarianism. Even though definitions of authoritarianism have varied over the years, there is broad agreement that individuals scoring high in authoritarianism (and conservative worldviews in general) are more sensitive to threat and more prone to experiencing the negative emotions of fear and anger (Altemeyer, 1988; Feldman, 2003; Hetherington & Weiler, 2009; Jost et al., 2003; Lavine, Lodge, Polichak, & Taber, 2002; Stenner, 2005; Vasilopoulos et al., 2018). On the one hand, authoritarians tend to be more reactive to various forms of threat, such as demographic changes, economic crises, or terror attacks. On the other, the very endorsement of authoritarian ideas (increased social control, submission to strong leaders, and

hostility toward outgroups and social deviants, etc.) is considered to be a psychological response to their increased sense of threat (Bonanno & Jost, 2006; Jost et al., 2003).

System Justification

System justification refers to the motivation shared by many people to “actively defend and bolster existing social arrangements, often by denying or rationalizing injustices and other problems, even when doing so comes at the expense of their personal and group interests” (van der Toorn & Jost, 2014, p. 414). The main psychological function that system justification serves is the reduction of guilt, distress, cognitive dissonance, or other negative feelings that stem from membership in a hierarchical social system. System-justifying attitudes may operate within or outside of conscious awareness. They may be explicitly expressed through overt support for existing economic, political, religious, and social hierarchies or implicitly through the rationalization of injustices or other negative outcomes of the system, the endorsement of beliefs such as meritocracy that indirectly justify the system, or through the employment of stereotypes that reproduce existing social hierarchies (Jost & Banaji, 1994; Jost et al., 2004). System-justifying ideologies are endorsed both by those who are advantaged and those who are disadvantaged by the status quo, yet have different effects among high- and low-status individuals. Among those with high status, it fosters ingroup favoritism and bolsters positive emotionality whereas among those with low status it fosters outgroup favoritism, increasing anxiety. Despite this, however, system justification offers a palliative function, a psychological defense, that helps the individual cope with the uncertainty of the world and increase the perception of self-control over one’s future.

As is the case with other political-psychological orientations, there are currently no studies focusing on the development of system-justifying attitudes in the life cycle from a socialization perspective. It is thus unknown when and how system-justifying preferences are developed. Nonetheless, the literature has identified a number of dispositional antecedents of system justification. Studies have shown that individual differences in the endorsement of system-justifying attitudes partly stems from deep-rooted psychological traits. Psychological characteristics such as cognitive closure and perceptions of a dangerous world are positively associated with system justification, while openness to new experiences has been found to be a negative predictor of system justification (Federico, Ergun, & Hunt, 2014; Hennes, Nam, Stern, & Jost, 2012; Jost et al., 2003; Jost & Hunyady, 2005). These characteristics are considered to develop prior to the endorsement of system-justifying attitudes (Hennes et al., 2012; Jost & Hunyady, 2005).

Apart from dispositional antecedents, extant literature also identifies a number of situational predictors of system-justifying preferences. Several studies have shown that emotional distress is the key motivating factor of system justification, while system-justifying ideologies, once endorsed, reduce in turn negative affect and increase positive affect (Jost, Wakslak, & Tyler, 2008; Solak, Jost, Sümer, & Clore, 2012; Wakslak, Jost, Tyler, & Chen, 2007). For instance, system justification reduces feelings of guilt among those high in the social hierarchy and feelings of cognitive dissonance and moral outrage among those low in the social hierarchy (Jost et al., 2008; Wakslak et al., 2007).

Jost and Hunyady (2003) offer three pathways through which system justification is associated with the reduction of anxiety. First, system justification is a palliative psychological defense mechanism for coping with various stressors of living in hierarchical, unequal societies. The second is that system justification offers a sense of stability, predictability, and continuity that protects the individual from the negative psychological consequences of a disordered, uncertain, and unpredictable environment. Hence, the palliative function of system-justifying beliefs extends beyond social inequalities. High-system justifiers have an increased sense of confidence, self-esteem, and subjective well-being (Jost & Hunyady, 2003, 2005). These characteristics affect the appraisal process reducing negative emotionality and fostering hope in the light of situations that evoke uncertainty and threat (Jost & Hunyady, 2003).

Third, Jost and Hunyady argue that system justification functions as a coping device, reducing anxiety and generating hope in light of threat. This means that apart from being an antecedent, system-justifying attitudes may also be a consequence of experiencing threat. Research has shown that people tend to endorse system-justifying preferences as a coping mechanism in cases where the system is threatened. As Kay and Friesen (2011) posit: “to the extent that people care about belonging to legitimate social systems, threats to those systems should also provoke defensive reactions and system-justifying processes” (pp. 360, 361). Research substantiates this proposition by illustrating that when individuals are exposed to system-challenging information they tend to respond by bolstering the extant status quo even more (Day, Kay, Holmes, & Napier, 2011; Jost & Hunyady, 2005; van der Toorn & Jost, 2014). Regarding terrorism, experimental research has shown that system-justifying attitudes tend to strengthen following terror attacks (Jost et al., 2004; Jost & Hunyady, 2003; Ullrich & Cohrs, 2007). Ullrich and Cohrs (2007) directly tested this hypothesis in Germany. Drawing on experimental data, they found that priming terrorist threat increased system-justifying attitudes compared to a control group.

System-justifying attitudes are inescapably tied to the status quo to which one belongs. Inasmuch as social and economic inequalities are present in societies and conservatives are more likely to find these justified and desirable, system justification is seen as an aspect of the broader conservative syndrome, along with other worldviews such as authoritarianism (Jost et al., 2003). Indeed several studies in multiple countries have shown that system justification is associated with several facets of conservative ideology, including conservative self-identification and authoritarianism, as well as the endorsement of conservative beliefs and political attitudes both in the economic and the social realm (Badaan, Richa, & Jost, 2020; Cichocka & Jost, 2014; Jost, 2019; Jost et al., 2009; Nilsson & Erlandsson, 2015). A notable exception is France, where system-justifying attitudes are associated with left-wing ideological identification and support for left-wing policies such as support for increased immigration (Jost, 2019; Langer, 2019). This French exceptionalism may be traced back to the centrality of social equality in the French national identity (Jost, 2019; Langer, 2019). Social equality is expressed both in terms of increased social protection for the most vulnerable as well as adherence to French republicanism, including the belief that France successfully integrates its citizens regardless of their ethnic or racial background.¹

To sum up, a large stream of research suggests that emotional reactions function both as an antecedent and an outcome of system justification. System justification has been shown to increase in times when the social, economic, or political system faces substantial threats, while the endorsement of system-justifying ideologies mitigates negative emotionality (Jost et al., 2003; Ullrich & Cohrs, 2007).

We are interested in assessing the association between system justification and distinct emotional reactions using a real-world event, the November 13 Paris terror attacks. Based on the literature we reviewed above, we anticipate that high and low system justifiers will differ in the appraisals of terror attacks, and in turn system justification will be associated with emotional reactions. Specifically, we constructed the following hypotheses:

H1: System justification should be positively associated with experiencing hope in the light of the 2015 Paris terror attacks.

In line with past research, we anticipate that endorsing system-justifying beliefs will increase affective reactions of hope in the light of the Paris terror attacks. High system justifiers tend to have

¹This tradition, however, conceals important socioeconomic inequalities expressed in various forms, including wealth (Piketty, 2014), systematic ethnic disadvantage and segregation, (McAvay, 2018), and racial discrimination (Bonnet, Lalé, Safi, & Wasmer, 2016).

more confidence in the extant social and political system. Consequently, they are more likely to appraise that the system can cope with major challenges and hence more likely to experience hope in the light of an event, compared to those scoring low on system justification.

H2: System justification should be negatively associated with experiencing fear in the light of the 2015 Paris terror attacks.

As we described in the theoretical section, fear is associated with the prospect of material or symbolic harm, the perception of a stimulus as unfamiliar, and the lack of resources to cope with the source of the threat. System justification serves a “stress preventing function” (Jost & Hunyady, 2003, p. 147) by providing individuals with a sense of confidence, certainty, and reduced perception of threat. This leads us to anticipate that high system justifiers should be less likely to have experienced fear following the Paris terror attacks.

Unlike the first two hypotheses, the association between system justification and anger is more complex. Specifically, the relationship may go in two antithetical directions, positive or negative, depending on the precise appraisal mechanism. Consequently, we are interested in testing two conflicting hypotheses.

H3a: System justification should be negatively associated with experiencing anger in the light of the 2015 Paris terror attacks.

Those who score high on system justification tend to perceive the social system as stable, consistent, and predictable. This renders them less prone to threat and to experiencing negative emotionality in the light of a threatening event. Consequently, high system justifiers may have experienced less anger following the attacks compared to low system justifiers through an appraisal pathway that is similar to fear, that is, by experiencing reduced threat in the light of the attacks.

H3b: System justification should be positively associated with experiencing anger in the light of the 2015 Paris terror attacks.

However, the association between system justification and anger may also be positive through an alternative appraisal pathway. An important appraisal for the occurrence of anger is a sense of confidence for dealing with the threat. System justifiers have an increased sense of control and empowerment. Consequently, because high system justifiers have more confidence in the system to respond to threats, they may be more likely to experience anger compared to low system justifiers.

Data and Methodology

Data come from the 2017 French Election Study (*Enquête Électorale Française- ENEF*) a panel study that was conducted approximately every month between November 2015 and June 2017. For the purpose of our analysis, we draw on the first wave of the study that was conducted between November 20 and 29, 2015, on a nationwide sample consisting of 24,369 respondents. The sample was constructed with the use of quota controls for age, gender, occupation, and stratified by size of community and region of residence (Ile de France, North-West, North-East, South-West, South-East). Sample descriptive statistics are provided in Table S1 in the online supporting information.²

²The data resemble the French adult population in all comparisons with the census and the results of the 2012 French Presidential election, with the exception of the underrepresentation of respondents with low levels of education, which constitutes a typical limitation of Internet panel studies (e.g., Craig et al., 2013).

The observational nature of our data comes with the limitation that we cannot establish causal relationships between the examined variables. It only allows us to test the extent to which system justification is associated with reduced negative affect and increased positive affect in the light of the November 13 Paris attacks using a diverse sample.

The dependent variable measures³ the emotional reactions of fear, anger, and hope when thinking of the Paris terror attacks, using the items proposed by Marcus et al. (2017). Fear is an additive scale produced by three items that ask respondents the extent to which they felt (1) scared, (2) worried, or (3) fearful thinking of the November 13 attacks on scales running from 0 (not at all) to 10 (extremely). The scale has high reliability (Cronbach's $\alpha = 0.82$). A similar additive scale was constructed for anger, consisting of four items asking respondents how (1) angry, (2) bitter, (3) hateful, and (4) resentful they felt when thinking about the attacks (Cronbach's $\alpha = 0.83$). Finally, the emotional dimension of hope was captured using the items (1) hopeful, (2) proud, and (3) enthusiastic (Cronbach's $\alpha = 0.82$).

Our key independent variable, system justification, was measured using the Kay and Jost (2003) system justification scale in Wave 1 (November 2015). The scale includes eight items, all measured on scales ranging from "1" (*totally agree*) to "9" (*totally disagree*). The items are: "In general, you find society to be fair"; "Society is set up so that people usually get what they deserve"; "Most policies serve the greater good"; "Everyone has a fair shot at wealth and happiness."; "In general the French political system operates as it should"; "France is the best country in the world to live in"; "Our society is getting worse every year" (Reverse-coded); "The French society needs to be radically restructured." The scale exhibited high reliability (Cronbach's $\alpha = 0.73$).

Regarding the rest of the independent variables, we control for individual differences in authoritarianism, also measured in wave 1 using the child-rearing values scale (see Feldman, 2003; Hetherington & Suhay, 2011; Stenner, 2005; Vasilopoulos & Lachat, 2018). Respondents are asked whether it is more important for a child: (1) to be *independent* or *respectful* toward grandparents; (2) to have an *inquiring mind* or to be *well-mannered*, (3) to be *creative* or *well-behaved*, or (4) to be *autonomous* or *obedient*. Respondents who choose respectful, well-mannered, well-behaved, and obedient receive a higher authoritarian score. We also control for individual differences in the Big Five personality dimensions, measured in September 2016 (Wave 6)⁴ using the Ten Item Personality Inventory, which is a concise yet valid measure of personality traits in surveys (Gosling, Rentfrow, & Swann, 2003).

Further, we include one question measuring left-right ideology (from Wave 1) asking the respondents to place themselves on a scale that ranges from "0" (*Left*) to "10" (*Right*). Because we anticipate that emotional reactions to terrorism will be affected by the extent to which one attaches herself to France, we have included an item that asked respondents "at which level would you say that you are attached to France" in a scale that ranges from "0" (*not at all*) to "10" (*extremely*).

Moreover, we anticipate that emotional reactions to the Paris attacks should be stronger among respondents who live in or close to Paris. Hence, we have included a variable that separates respondents living in the Ile-de-France region (that includes Paris) from the rest of the sample. We also expected that emotional reactions should be stronger among those who reside in urban centers and consequently our models control for the size of community. Finally, the models control for individual differences in age, gender, level of education, and religious denomination.

³The question in French was the following: « Quand vous pensez aux attentats qui se sont produits à Paris le vendredi 13 novembre dernier, pouvez-vous dire sur une échelle de 0 à 10 où 0 signifie « pas du tout » et 10 « Enormément » si vous éprouvez... ? De l'inquiétude; De l'effroi; De la peur De la fierté; De l'enthousiasme; De l'espoir; De l'amertume; De la colère; Du ressentiment; De la haine ».

⁴Given that the Big Five remain quite stable in the timespan of one year (Cobb-Clark & Schurer, 2012), we are confident that the 10-month lag on the measurement of personality does not affect the validity of the obtained results.

In order to facilitate the interpretation and comparability of the results, all variables have been recoded to range from “0” to “1.”

Results

Figure 1 summarizes the emotional arousals experienced in the light of the November 13 attacks for each of the three affective dimensions. In line with past literature, we find that the attacks elicited intense fear (mean = 0.71; *SD* = 0.23) and anger (mean = 0.69; *SD* = 0.23), while enthusiasm/hope levels were low (mean = 0.22; *SD* = 0.24).

Table 1 reports the correlation matrix for the key variables of interest. As expected, and in line with past research (Marcus, MacKuen, Wolak, & Keele, 2006), fear and anger are positively correlated (*r* = 0.47). Further, conservatives, authoritarians, and those with a strong national attachment were more prone to experiencing both fear and anger.

Table 2 reports the results of the main analysis. Since we anticipate that our three continuous dependent variables (fear, anger, and hope) will be affected by the same independent variables, we employ seemingly unrelated regression (Zellner, 1962). To investigate the associations between demographic and psychological characteristics with affective experience, we constructed two models. Model 1 includes all sociodemographic variables as well as the Big Five personality dimensions. Model 2 includes all variables included in Model 1 and adds system justification, authoritarianism, national attachment, and ideological self-placement.

Starting with Model 1, the results highlight a number of interesting findings on the association of demographic characteristics and affective outcomes in the light of the Paris attacks. Age is negatively associated with having experienced both hope and fear, yet is positively associated with having experienced anger. Further, women were less likely to report that they felt hope and anger, yet more likely to have responded that they were fearful when thinking about the attacks. On the other hand, education is negatively associated with the intensity of all three emotional reactions measured here.

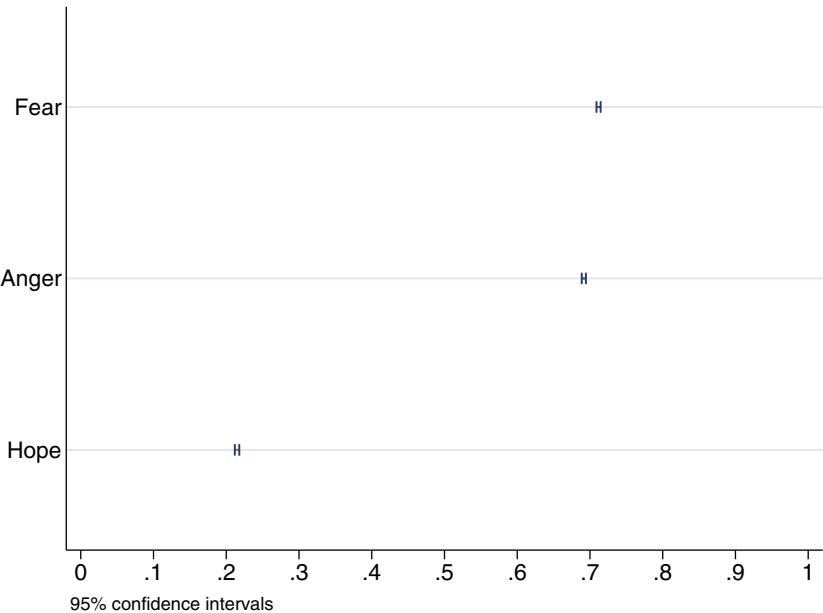


Figure 1. Emotional responses to the November 13 Paris attacks. *Source:* French National Election Study, November 2015 (Wave 1). *N* = 24,325.

Table 1. Correlations Between Key Variables

	Fear	Anger	Hope	System Justification	Authoritarianism	Left-Right Scale	National Attachment
Fear	1						
Anger	0.471*	1					
Hope	-0.131*	-0.014*	1				
System Justification	-0.045*	-0.130*	0.200*	1			
Authoritarianism	0.175*	0.238*	-0.023*	-0.087*	1		
Left-right scale	0.104*	0.256*	-0.026*	-0.170*	0.228*	1	
National attachment	0.123*	0.144*	0.049*	0.120*	0.051*	0.062*	1

Note. Entries are Pearson's r coefficients.

* $p < 0.05$.

Source: French National Election Study (ENEF).

Moreover, respondents living in Ile-de-France (the geographical region that includes Paris) were slightly more likely to have experienced fear. Finally, regarding religious denomination, the findings show that, compared to those without any religious denomination, Catholics were slightly more likely to have felt hope, fear, and anger, Jews were more likely to have experienced fear and anger, while Muslims were more likely to have experienced fear.

Regarding the Big Five personality dimensions, the results of Model 1 suggest that openness to new experiences, conscientiousness, and extraversion only had a modest association with emotional elicitation and intensity. For instance, in line with past research, we do find that extraversion was positively and significantly associated with experiencing hope in the light of the attacks, yet the effect was small ($b = 0.046$; $SE = 0.010$; $p < 0.01$). On the other hand, agreeableness was positively associated with the experience of fear ($b = 0.113$; $SE = 0.011$; $p < 0.01$). Further, and again corresponding with past findings, neuroticism was positively associated with fear ($b = 0.142$; $SE = 0.009$; $p < 0.01$), while also exhibiting a feeble yet statistically significant positive association with anger ($b = 0.058$; $SE = 0.009$; $p < 0.01$) and a weak negative association with hope ($b = -0.027$; $SE = 0.010$; $p < 0.01$). Finally, conscientiousness was negatively associated with experiencing hope ($b = -0.095$; $SE = 0.012$; $p < 0.01$) and positively correlated with experiencing fear ($b = 0.079$; $SE = 0.010$; $p < 0.01$) and anger ($b = 0.108$; $SE = 0.010$; $p < 0.01$). All in all, as the low R^2 values indicate, demographics and personality combined have rather low explanatory power when it comes to predicting the affective outcomes of the Paris terror attacks.

We now move on to investigate the association of ideology, authoritarianism, system justification, and national attachment with the emotional reactions to the attacks (Model 2). In order to facilitate the interpretation of the findings of Model 2, Figure 2 plots the coefficients from Model 2 presented in Table 2 for the variables of interest. The figure illustrates the main findings regarding the association of psychological characteristics and the elicitation of fear, anger, and hope, controlling for the rest of the independent variables as presented in Table 2. All in all, the findings suggest that emotional responses are significantly associated with psychological characteristics. Specifically, in line with past research, both authoritarianism and conservatism were positively associated with fear and anger, yet were unrelated to experiencing hope in the light of the attacks. National attachment was also positively associated with the two negative emotions but only had a minimal association with experiencing hope.

Regarding system justification, the focus of this article, findings confirm our expectations. Specifically, system justification has a positive association with having experienced hope in the light of the attacks ($b = 0.343$; $SE = 0.013$; $p < 0.01$). Moreover, the size of the association largely exceeds

Table 2. Individual Characteristics and the Experience of Hope, Fear, and Anger Following the November 13 Paris Attacks

	Model 1			Model 2		
	Hope	Fear	Anger	Hope	Fear	Anger
Openness to Experience	0.011 (0.010)	−0.038** (0.009)	−0.003 (0.009)	0.027** (0.010)	−0.016 (0.009)	0.030** (0.009)
Conscientiousness	−0.095** (0.012)	0.079** (0.010)	0.108** (0.010)	−0.071** (0.012)	0.038** (0.011)	0.037** (0.010)
Extraversion	0.046** (0.010)	0.007 (0.009)	0.041** (0.009)	0.042** (0.010)	0.004 (0.009)	0.033** (0.009)
Agreeableness	−0.014 (0.012)	0.113** (0.011)	−0.019 (0.011)	−0.030* (0.012)	0.107** (0.011)	−0.011 (0.011)
Neuroticism	−0.027** (0.010)	0.142** (0.009)	0.058** (0.009)	−0.010 (0.010)	0.141** (0.009)	0.057** (0.009)
System Justification				0.343** (0.013)	−0.061** (0.012)	−0.164** (0.012)
Authoritarianism				0.001 (0.006)	0.090** (0.006)	0.111** (0.005)
National attachment				0.033** (0.010)	0.135** (0.009)	0.146** (0.009)
Left-right scale				−0.006 (0.008)	0.043** (0.007)	0.153** (0.007)
<i>Religious denomination (ref. None)</i>						
Catholic	0.013** (0.004)	0.048** (0.003)	0.052** (0.003)	0.012** (0.004)	0.031** (0.004)	0.018** (0.003)
Protestant	0.006 (0.014)	−0.019 (0.012)	−0.008 (0.013)	0.012 (0.014)	−0.028* (0.013)	−0.033** (0.012)
Jewish	0.011 (0.024)	0.055* (0.022)	0.098** (0.022)	0.007 (0.024)	0.052* (0.022)	0.084** (0.021)
Muslim	0.031 (0.016)	0.053** (0.015)	−0.025 (0.015)	0.014 (0.016)	0.052** (0.015)	−0.013 (0.014)
Buddhist	−0.011 (0.026)	−0.021 (0.024)	−0.021 (0.024)	−0.003 (0.026)	−0.017 (0.024)	−0.030 (0.023)
Orthodox	−0.001 (0.040)	−0.010 (0.036)	0.013 (0.036)	0.006 (0.040)	−0.023 (0.036)	−0.003 (0.035)
Other	0.007 (0.015)	−0.008 (0.014)	−0.022 (0.014)	0.015 (0.017)	−0.001 (0.015)	−0.009 (0.015)
Age	−0.042** (0.010)	−0.066** (0.009)	0.055** (0.009)	−0.063** (0.010)	−0.066** (0.009)	0.067** (0.009)
Middle education	−0.007 (0.006)	−0.031** (0.005)	−0.022** (0.005)	−0.008 (0.006)	−0.024** (0.005)	−0.016** (0.005)
High education	−0.013* (0.005)	−0.075** (0.005)	−0.098** (0.005)	−0.021** (0.005)	−0.057** (0.005)	−0.074** (0.005)
Female	−0.027** (0.004)	0.063** (0.003)	−0.013** (0.003)	−0.029** (0.004)	0.065** (0.003)	−0.011** (0.003)
<i>Size of community (ref. more than 200,000 inhabitants)</i>						
Less than 2000	−0.009 (0.005)	0.005 (0.005)	0.008 (0.005)	−0.005 (0.005)	0.002 (0.005)	0.003 (0.004)
2000–9999	0.004 (0.006)	0.014** (0.005)	0.012* (0.005)	0.007 (0.006)	0.014* (0.005)	0.010 (0.005)
10,000–49,999	−0.005 (0.006)	0.003 (0.005)	0.004 (0.005)	−0.002 (0.006)	0.000 (0.006)	0.000 (0.005)
50,000–199,999	0.007 (0.006)	0.003 (0.005)	0.006 (0.005)	0.007 (0.006)	0.002 (0.005)	0.004 (0.005)

(Continues)

Table 2. (Continued)

	Model 1			Model 2		
	Hope	Fear	Anger	Hope	Fear	Anger
Respondent lives in Ile-de-France	0.005 (0.005)	0.011* (0.005)	0.003 (0.005)	0.006 (0.005)	0.011* (0.005)	-0.001 (0.005)
Constant	0.314** (0.015)	0.546** (0.014)	0.599** (0.014)	0.148** (0.018)	0.396** (0.017)	0.417** (0.016)
Observations	18,655	18,655	18,655	17,536	17,536	17,536
R ²	0.013	0.076	0.068	0.054	0.108	0.156

Note. Entries are unstandardized seemingly unrelated regression coefficients (with their standard errors in parentheses). All variables have been recoded to range from 0 to 1 in order to facilitate interpretation.

* $p < 0.05$; ** $p < 0.01$.

Source: French National Election Study (ENEF).

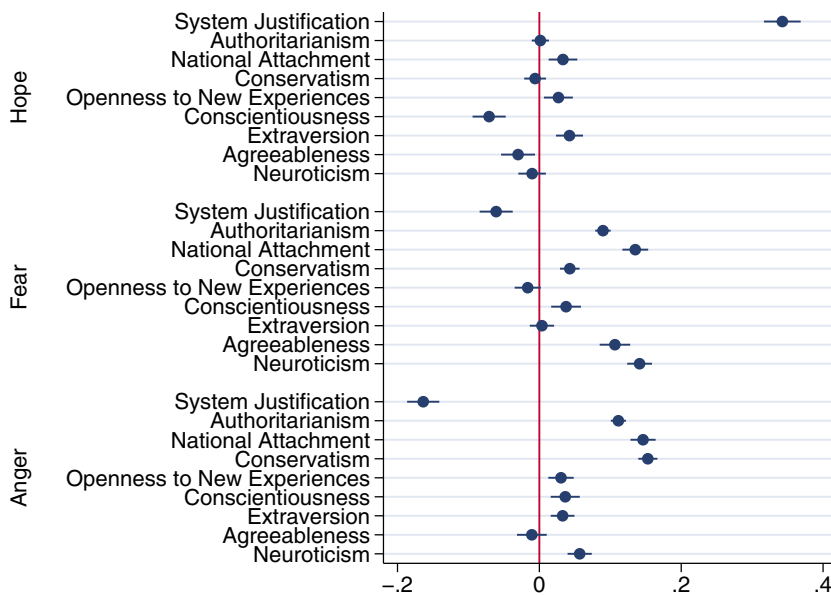


Figure 2. Psychological characteristics and emotional reactions to the November 13 Paris terror attacks. The coefficient plot presents unstandardized OLS regression coefficients (dots) with 95% confidence intervals (lines). The figure has been generated from Table 2. All variables have been recoded to range from 0 to 1 in order to facilitate interpretation. Source: French National Election Study (ENEF).

the respective effects of any other personality or demographic variable. This finding provides strong confirmation of our first hypothesis, suggesting that system-justifying attitudes were associated with emotional soothing. Moreover, as shown in the middle and bottom of Figure 2, system justification was negatively associated with experiencing fear. This confirms our second hypothesis. The effect, however, even though it is statistically significant, is rather small ($b = -0.061$; $SE = 0.012$; $p < 0.01$) compared to the associations between the effect size of the other psychological characteristics. Finally, system-justifying attitudes were negatively associated with experiencing anger. As was the case with hope, the magnitude of the effect largely exceeds the respective magnitudes of any other psychological disposition ($b = -0.164$; $SE = 0.012$; $p < 0.01$). This result supports Hypothesis 3a,

indicating that high system justifiers are less likely to have experienced anger following the attacks. All in all, the findings of the analysis provide strong confirmation of the palliative function of system justification. High system justifiers were more likely to have experienced positive emotions in the light of the deadly attacks and less likely to have experienced fear and anger.

Secondary Results

Up until now, we have presented evidence that system justification is positively correlated with experiencing hope and negatively correlated with experiencing fear and anger in the light of the November 13 attacks. We theoretically justified our hypotheses based on past literature that shows that system justification functions as a preemptive buffer that increases positive emotionality and decreases negative emotionality. At the same time, as we mentioned earlier, system justification in addition to being an antecedent may also be a *consequence* of fear and anger, functioning as a coping mechanism following the experience of negative emotions that stem from a serious societal threat (Jost & Hunyady, 2003; Ullrich & Cohrs, 2007). Unfortunately, the nature of our data does not allow us to offer a full causal model on the relationship between system justification and emotional experience, as the bulk of variables employed in the analysis have only been measured at one point in time. However, we are able to offer an additional test on the direction of the relationship by looking at the association of system-justifying attitudes with the *change* of emotional experience toward the Paris attacks in two points in time.

In order to investigate this relationship, we replicated the main analysis in Table 2 using a seemingly unrelated regression model with a lagged dependent variable. The dependent variables we used in this analysis are the three emotional reactions measured in January 2016, that is two months after the attacks (Wave 2 of the French Election Study).⁵ The models control for all variables in Table 2, plus emotional reactions in November 2015.⁶ This model offers additional evidence of the palliative function of system justification, allowing us to examine whether high system justifiers were more likely to experience less negative emotionality and more positive emotionality two months after the attacks, controlling for their initial emotional reactions. In other words, this analysis allows an assessment of whether system justifiers were more likely to bounce back from the emotional experience of fear and anger, compared to low system justifiers.

The results are presented in Table 3. The findings offer additional support over the palliative function of system justification. All else equal, system-justifying attitudes were associated with an increase in hope two months after the attacks ($b = 0.157$; $SE = 0.012$; $p < 0.01$) and a decrease of both fear ($b = -0.024$; $SE = 0.011$; $p < 0.01$) and anger ($b = -0.069$; $SE = 0.011$; $p < 0.01$). Hence, according to our analysis, high system justifiers were more likely to “rebound” psychologically by being more hopeful and less fearful and angry when thinking about the Paris attacks, regardless of their levels of hope, fear, and anger respectively during the period immediately after the attacks. These results are fully in line with our expectations over the palliative role of system-justifying attitudes in the light of a major terror attack, showing that, independently of whether people also adopt

⁵Hence the model has the following form:

$$\text{Emotion}_{i2} = \text{psychological characteristics}_{i1} + \text{sociological characteristics}_{i1} + \text{Emotion}_{i1}.$$

The wording of the emotions items remains identical as in November 2015. Table A1 in the appendix presents the correlation between the emotion variables in both time points.

⁶An alternative method would be to employ the unconditional change score (i.e., $\text{Emotion}_{i2} - \text{Emotion}_{i1}$) as the target variable. Yet the use of the unconditional change score assumes that the score in time 1 is not causally related to the score in time 2 (see Finkel, 1995). In cases where there is a suspected causal effect, Finkel (1995, p. 8) and Bartels (2006) recommend using a lagged dependent variable model. Emotional reactions to terror attacks are such a case, as the severity of the emotional arousal immediately after the attacks may well condition the emotional response two months later. Indeed, lagged dependent variable models are being used widely in studies that draw on two-wave panel studies to investigate the effects of terror attacks (e.g., Gross, Brewer, & Aday, 2009; Schmierbach, Boyle, & McLeod, 2005; Vasilopoulos, 2018; Vasilopoulos et al., 2018).

Table 3. Individual Characteristics and the Change in Levels of Hope, Fear, and Anger Between November 2015 and January 2016 (Lagged Dependent Variable Model)

	(1)	(2)	(3)
	Hope _{t2}	Fear _{t2}	Anger _{t2}
System justification	0.157** (0.012)	-0.024* (0.011)	-0.069** (0.011)
Authoritarianism	-0.001 (0.005)	0.041** (0.005)	0.050** (0.005)
National attachment	0.014 (0.009)	0.053** (0.009)	0.055** (0.008)
Left-right scale	-0.018** (0.007)	0.049** (0.007)	0.106** (0.006)
Openness to Experience	0.011 (0.009)	-0.005 (0.009)	0.015 (0.009)
Conscientiousness	-0.053** (0.011)	0.028** (0.010)	0.025* (0.010)
Extraversion	0.014 (0.009)	-0.006 (0.008)	0.012 (0.008)
Agreeableness	-0.021* (0.011)	0.044** (0.010)	-0.010 (0.010)
Neuroticism	-0.009 (0.009)	0.070** (0.008)	0.038** (0.008)
<i>Religious denomination (ref. None)</i>			
Catholic	0.014** (0.004)	0.014** (0.003)	0.007* (0.003)
Protestant	-0.014 (0.013)	-0.020 (0.012)	-0.004 (0.012)
Jewish	0.015 (0.021)	0.027 (0.021)	0.015 (0.020)
Muslim	-0.006 (0.014)	-0.006 (0.014)	0.005 (0.013)
Buddhist	0.024 (0.023)	0.013 (0.022)	-0.048* (0.021)
Orthodox	0.053 (0.036)	0.018 (0.034)	0.019 (0.033)
Other	0.012 (0.015)	-0.037** (0.014)	-0.024 (0.014)
Age	-0.019* (0.009)	-0.016 (0.009)	0.028** (0.008)
Middle education	-0.003 (0.005)	-0.014** (0.005)	-0.010* (0.005)
High education	-0.019** (0.005)	-0.028** (0.005)	-0.030** (0.004)
Female	-0.018** (0.003)	0.022** (0.003)	-0.005 (0.003)
<i>Size of community (ref. more than 200,000 inhabitants)</i>			
Less than 2000	-0.001 (0.005)	-0.004 (0.004)	0.002 (0.004)
2000–9999	0.004 (0.005)	-0.000 (0.005)	-0.005 (0.005)
10,000–49,999	-0.001 (0.005)	-0.001 (0.005)	-0.002 (0.005)
50,000–199,999	0.006 (0.005)	0.004 (0.005)	0.000 (0.005)
Respondent lives in Ile-de-France	0.007 (0.005)	-0.006 (0.004)	0.000 (0.004)

(Continues)

Table 3. (Continued)

	(1)	(2)	(3)
	Hope _{t2}	Fear _{t2}	Anger _{t2}
Hope (time 1)	0.409** (0.007)		
Fear (time 1)		0.572** (0.007)	
Anger (time 1)			0.595** (0.007)
Constant	0.092** (0.016)	0.131** (0.016)	0.104** (0.015)
Observations	16,781	16,781	16,781
R ²	0.226	0.351	0.407

Note. Entries are unstandardized seemingly unrelated regression coefficients (with their standard errors in parentheses). All variables have been recoded to range from 0 to 1 in order to facilitate interpretation.

* $p < 0.05$; ** $p < 0.01$.

Source: French National Election Study (ENEF).

system-justifying attitudes as a consequence of threat, system justification renders one more prone to experiencing hope and less prone to feeling fear and anger.

Conclusion

There is a broad consensus in the literature that system justification plays a palliative role for individuals, reducing the negative affect evoked by living in unequal or unpredictable social environments and offering a sense of hope, control, and certainty. In this study, we attempted to investigate the associations between system justification and the experience of fear, anger, and hope using the case of the November 13 Paris terror attacks. An important limitation of our study is that due to the cross-sectional nature of our data we could not assess causal relationships between system justification and emotional arousal. Further, the nature of our data did not allow us to assess the exact aspects of the attacks that triggered an emotional response, namely the precise stimuli that evoked hope, fear, and anger among respondents. Nonetheless, our study offers a test of the premises of system justification theory drawing on a particularly threatening, real-world event. Overall, our findings provide strong confirmation of the palliative function of system justification in the light of major threatening events. First, we found that system-justifying attitudes were negatively associated with experiencing fear and anger and positively associated with experiencing hope in the light of the attacks even after controlling for a series of psychological dispositions such as authoritarianism, national attachment, conservatism, and the Big Five personality dimensions. Second, we found that high system justifiers were more likely to show increased hope and decreased fear and anger two months after the attacks, independently of their emotional experience immediately after the attacks.

These findings help us understand how societies deal with collective threat in a number of ways. They indicate that the elicitation of distinct emotional reactions depends on the reservoirs of support for extant social arrangements. This has implications for the understanding of collective threat both at the individual and aggregate level. Regarding the individual level, these results suggest that negative emotional reactions to threat should be more potent among individuals and social groups scoring low on system justification. At the aggregate level, the findings imply that major threatening events will not have the same impact on citizens' emotional reactions across countries. Specifically, in societies where aggregate levels of system justification are low, levels of fear—and especially anger—will be increased. Given that past research has identified an association of anger

with the endorsement of authoritarian policies and candidates, this implies that terrorist attacks will be associated with heightened hostility, aggression, and the endorsement of authoritarian policies in contexts where system justification is low, such as developing nations (Vargas-Salfate, Paez, Liu, Pratto, & Gil de Zúñiga, 2018). On the other end, in contexts where system justification is high, major threatening events will have a more contained impact in terms of attitudes toward outgroups and policy preferences.

These results also add to our understanding of individual-level differences in the elicitation of positive and negative emotional reactions in the light of threatening events. Future research could expand these findings by exploring other types of threatening events that have been found to trigger strong emotional reactions, such as economic crises or environmental disasters (Albertson & Gadarian, 2015; Wagner, 2014). Further, future work could assess the extent to which differences in social status in terms of race or ethnicity condition the relationship between system-justifying attitudes and affective reactions, that is whether the impact of system justification on emotional experience differs based on whether someone is a member of the majority or has a minority status.⁷ Finally, additional research could shed light on whether high and low system justifiers focus on different aspects of terrorist events that in turn may affect their emotional reactions. In any case, system-justifying ideologies are strongly associated with the type and intensity of emotional reactions. Integrating system justification into the study of affect can help us better understand the antecedents and consequences of emotional reactions.

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⁷Unfortunately, French surveys typically do not ask questions about respondents' race or ethnicity so we were unable to test this hypothesis with our data (see Simon, 2008). We did, however, test our model with the addition of an interaction term between income and system justification, but we found no conditional effects of system justification on emotional reactions for different income categories.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher’s web site:

TABLE S1: Comparisons Between the Sample, the French Census, and the Results of the 2012 French Presidential Election

Appendix

Table A1. Correlations Between Emotional Reactions Toward the Paris Terror Attacks in November 2015 (Time 1) and January 2016 (Time 2)

	Fear _{t1}	Anger _{t1}	Hope _{t1}	Fear _{t2}	Anger _{t2}	Hope _{t2}
Fear _{t1}	1					
Anger _{t1}	0.47*	1				
Hope _{t1}	−0.13*	−0.01*	1			
Fear _{t2}	0.58*	0.36*	−0.08*	1.00		
Anger _{t2}	0.35*	0.61*	−0.03*	0.51*	1.00	
Hope _{t2}	−0.06*	−0.01	0.44*	−0.08*	0.01	1.00

Note. Entries are Pearson correlation coefficients.

**p* < 0.01.

Source: French Election Study Waves 1 and 2. *N* = 24,325.