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Hope and Anger as Mediators Between Collective Action Frames and Participation in Collective Mobilization: The Case of 15-M

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Abstract

The study set out to integrate collective action models and emphasize the role of emotions. Whereas the importance of anger is indisputable, relatively little attention has been paid to the role of positive emotions, such as hope, in collective action research. Hence, the aim of the study was to explore the role of hope and anger as drivers of participation and involvement in collective mobilizations. A cross-sectional field study (N = 638) conducted right after the emergence of the 15-M socio-political protest movement in Spain assessed the emotions and beliefs of both demonstrators and those who took no part in the active mobilization. We hypothesized that anger and hope would sequentially mediate the relationship between collective action frames and participation in collective action. Furthermore, to test this premise, we ran two alternative sequential mediation models based on the social identity model of collective action (SIMCA) and the encapsulated model of social identity in collective action (EMSICA), but with emotions as mediators between collective action frames and intensity of participation. Both models fit the data well, suggesting the importance of considering multiple causal pathways, and showing that anger and hope sequentially mediate the relation between these frames and involvement in collective action. The results support the crucial role of hope in mobilizing individuals to take part in collective action.

Keywords: collective action, social identity, collective efficacy, emotions, hope, anger, protest

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As a response to the global economic crisis, which had dramatic social and economic repercussions in Spain, May 15th, 2011 witnessed the emergence of the so-called *Indignados* (The Indignant Ones) movement. Awareness of the severe critiques to which the system was exposed spread initially via books, such as the bestselling “¡Indignaos!” (Hessel, 2010), which denounced the current situation in Spain, reflecting collective discontent and rejection of politicians’ approach to dealing with the situation (Páez, Javaloy, Włodarczyk, Espelt, & Rimé, 2013). The sudden rise of new social movements emerging from new political opinion-based groups (McGarty, Thomas, Lala,

Smith, & Bliuc, 2014) is an exceptionally relevant context for studying the different psychological motivators and processes that foster collective action.

Since the emergence of the 15-M movement in Spain, both activists and scholars have stressed its plural, inclusive and transversal character and the role of shared emotions. Indignation and hope played a pivotal role in transforming crises into protest (Castells, 2012; Laraña & Díez, 2012; Perugorría & Tejerina, 2013). Trust was destroyed, provoking a wave of indignation, but hope for a better future was crucial in turning grievances into action and motivated large numbers of individuals from diverse backgrounds to gather within physical spaces. Slogans like “Organize your anger”, “Without hope there is no future” and “Yesterday angry, today hopeful” pointed out that although anger was necessary to mobilize protesters, it was hope that offered possibilities for change and the creation of new spaces within civil society (Páez et al., 2013; Sabucedo & Vilas, 2014).

Recent literature on collective action aims to integrate the constructs offered by different theoretical approaches and to include multiple predictors of engagement in collective action (e.g. Drury & Reicher, 2009; Gamson, 1992; Stürmer & Simon, 2004; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; van Zomeren, Postmes, & Spears, 2008). After having neglected the importance of emotions in protest movements for many years, extant models of collective action (Stürmer & Simon, 2009; Thomas, McGarty, & Mavor, 2009a; van Stekelenburg, Klandermans, & van Dijk, 2011; van Zomeren, Leach, & Spears, 2012; van Zomeren, Spears, Fischer, & Leach, 2004) have begun to incorporate group-based emotions. Particularly anger have been identified as separate but complementary pathway to collective action. At the same time, surprisingly few studies have directly examined the role of positively valenced group-based emotions in inspiring individuals to undertake collective action. Although many recent authors have pointed out the importance of considering positive emotions when explaining group dynamics (e.g. Mackie, Devos, & Smith, 2000; Smith & Mackie, 2008; Thomas, McGarty, & Mavor, 2009b), the majority of studies on collective action fail to sufficiently account for their crucial role in encouraging engagement in political protest.

One positive emotion which has recently aroused most interest is hope. In our view, hope is a motivating emotion capable of fueling resistance and protest. We ground our argument for incorporating hope into explanatory models of collective action in a wide range of sociological studies on the capacity of hope for generating change (see Braithwaite, 2004a; Courville & Piper, 2004; McGeer, 2004). From this perspective, hope can be viewed as a bridge between collective action frames and actual action. Thus, a belief in hope for a better future provides the foundation upon which individuals find it worthwhile to engage in efforts to improve their personal and social situation (Foster-Fishman et al., 2007; Hanna, 2002). More precisely, as argued by Aminzade and McAdam (2001) “[A]nger in the case of perceived injustice and hope regarding the prospects for change [...] appears to serve as the necessary affective bedrock on which many movements are built” (p. 31). This suggests that negative emotions, although important (van Zomeren et al., 2004, 2012), are not the only emotional predictors of collective action. According to Frijda (1988), “anger implies hope”, further hope is “yearning for better” even “when the odds do not greatly favor it” (Lazarus, 1991, p. 283). Therefore, we argue that the potential effectiveness of anger in generating social change could be explained by feelings of hope it lights up, which in turn mobilize people to act.

In this paper, building on the theoretical set up offered by theories of collective action and social identity, we propose a sequential mediation model that places hope at the core of the mechanism promoting participation and involvement in collective mobilizations. In this sense, and in light of increasing empirical evidence (Greenaway, Cichocka, van Veelen, Likki, & Branscombe, 2016; Páez et al., 2013; Sabucedo & Vilas, 2014; Smith & Leiserowitz, 2014), we attempt to examine the role of hope in accounting for the motivational potential of anger to integrate this perspective

into other prominent social psychological perspectives. Thus, in the present paper, we extend existing research by examining the mediating role of hope and anger in the relationship between factors such as the perception of injustice, collective efficacy and group identification and intensity of participation within the context of the 15-M sociopolitical protest movement. We report the results of a field study that tests the ecological validity of current explanatory models of collective action (SIMCA and EMSICA) in a specific real-life context and explores the power of emotions for transforming beliefs into actual action.

First of all, we briefly review recent psychological perspectives on collective action and the importance of emotions in mobilizing collective action, taking into account those amplifiers of existing motivations. Subsequently we describe the relationship between anger and hope and hope and efficacy, and its particular importance in collective action research. Finally, we propose that hope is the key element in explaining the relationship between collective action frames, anger and commitment to social movements such as 15-M.

Frames of Collective Action

According to the literature on the social and psychological dynamics of collective action there are at least three components that constitute collective action frames: perceived injustice, social identity and efficacy (Gamson, 1992; Klandermans, 1997; van Zomeren et al., 2008). Therefore, collective action is likely to emerge when the social situation is interpreted as unjust (Touraine, 1978). Moreover, in line with relative deprivation theory, this appraisal must be shared within the members of a group and elicit emotional arousal (Kawakami & Dion, 1993; Leach, Snider, & Iyer, 2002). Thus, perception of the injustices themselves and moral indignation in connection with one's adversaries can incite feelings of mutual identification that enable the construction of an "us", a collective identity. According to Touraine's (1978) conceptualization of social movements, social identity theory (Tajfel, 2010; Tajfel & Turner, 1979), Klandermans' (1988) concept of collective action and the neo-Durkheimian perspective (Páez, Rimé, Basabe, Włodarczyk, & Zumeta, 2015), social or collective identity plays a central role in encouraging collective mobilization. The salience of social identity has the quality of increasing members' identification with the group's values and beliefs, the perception of similarity, positive feelings (attraction, empathy, etc.) and prosocial relations of cooperation and solidarity (Turner et al., 1987). This is important for the movement, as it generates group cohesion and promotes unity of beliefs and coordinated action (Javaloy, Rodríguez, & Espelt, 2001). Finally, instrumental motivation and individuals' expectations concerning the costs and benefits of engagement in collective mobilization are important. As proposed by resource mobilization theory (McCarthy & Zald, 1977), people have to share a belief that the situation is unstable and that as long as certain essential resources are mustered, it can be effectively changed. In this sense, the perception of group efficacy is defined as the belief that the group is capable of changing the current situation through organized action (van Zomeren et al., 2004).

Recently, van Zomeren and colleagues (2008) carried out a meta-analysis of studies on collective action. Their results show that perceived injustice, identity and efficacy predict collective action in a near-similar fashion (and with a moderate effect size); and at the same time, they are positively inter-correlated. Furthermore, the authors found a greater effect size for politicized identity. On this basis, van Zomeren and colleagues (2008) proposed a comprehensive model called the social identity model of collective action (SIMCA).

The SIMCA suggests that while the collective action frames (efficacy, injustice and identity) are direct predictors of collective action, social identity reinforces the perception of injustice, emotions and the perception of efficacy (thereby acting as an indirect predictor of collective action). According to van Zomeren and colleagues (2008), identity functions as a bridge between efficacy and the perception of injustice, facilitating and boosting the group

experience of injustice and efficacy. Furthermore, the SIMCA allows for the direct effect of identification to be stronger when identity is politicized.

An alternative model called the encapsulated model of social identity in collective action (EMSICA) has been proposed by [Thomas, McGarty, and Mavor \(2009a\)](#). This model inverts the causal relations established in the SIMCA. The EMSICA suggests that social identity mediates the effect of perceived injustice and efficacy on collective action, with perceived injustice and efficacy providing the basis for the emergence of social identity. Since experiences of injustice and efficacy tell us about who “we” are, and social identity can capture (and mediate) these two emotional reactions, their direct effects are not so substantial in the model ([Thomas et al., 2009a](#)). Although both models assign social identity a central role in driving collective action, it is important to emphasize that they cater to different contexts. Whereas the SIMCA was derived from many primary studies on traditional forms of collective action (involving low-status or otherwise deprived groups, including social movements), EMSICA refers to more emergent, opinion-based social identities.

The causal relation is disputable: The experimental studies by [Swaab, Postmes, van Beest, and Spears \(2007\)](#) suggest that the incorporation of one of the frames can lead to the development of the others, and that shared social identity can be both a product and a precursor of shared cognition ([Swaab et al., 2007](#)) or collective action ([Thomas et al., 2009a](#)). While [van Zomeren et al.’s \(2008\)](#) meta-analysis did not include the opinion-based groups closest to the profile of participants in new social movements, the empirical study by [Thomas, Mavor, and McGarty \(2012\)](#) compared the SIMCA and EMSICA in three independent samples of shared-opinion groups. The authors concluded that neither of the models is clearly superior to the other, and that either model’s superiority may depend on the socio-cultural context. Given the importance of confirming the generalizability of these previous findings, we attempted to investigate the SIMCA’s and the EMSICA’s applicability within the context of the emergence of the 15-M socio-political protest movement in Spain.

The Importance of Emotions in Social Mobilization

Since [Gamson’s \(1992\)](#) proposal regarding the important motivating role of anger in political protest, emotions are no longer seen as irrational. Recent studies have stressed the importance of group emotions in people’s willingness to form part of a collective action ([Mackie et al., 2000](#); [Musgrove & McGarty, 2008](#); [van Zomeren et al., 2008](#)). Also, as demonstrated by [van Stekelenburg and Klandermans \(2007\)](#), emotions may be viewed as amplifiers of existing motivations, rather than as a separate pathway to collective action ([van Zomeren et al., 2004](#)). Moreover, human behavior is likely to be influenced by automatic emotional judgments, as well as by conscious cognitive calculation (see [Bargh, 1984](#); [LeDoux 1996](#); [Loewenstein, Weber, Hsee, & Welch, 2001](#); [Slovic et al., 2002](#)). Thus, intense emotions are closely linked to action ([Frijda, 1988](#); [Maitner, Mackie, & Smith, 2006](#)) and likely to have a powerful direct impact on actual behavior, complementing deliberative decision-making or cost-benefit calculations ([Loewenstein & Lerner, 2003](#); [Pearlman, 2013](#)). According to intergroup emotions theory ([Smith, 1993](#)), shared appraisal leads to group emotions which in turn foster action tendencies. Thus, the causal link between collective action frames and group emotions may be recursive. On the one hand, being part of a specific group may facilitate the experience of group-based emotions (see [Mackie et al., 2000](#); [Postmes, Haslam, & Swaab, 2005](#); [van Zomeren et al., 2008](#)), something which is particularly true in the case of social identities based on established long-term social categories. On the other hand, however, shared emotional experiences and social sharing of emotion may trigger psychological group formation (see [Livingstone, Spears, Manstead, Bruder, & Shepherd, 2011](#); [Swaab et al., 2007](#)). Indeed, both experimental ([Kirschner & Tomasello,](#)

2010; Wiltermuth & Heat, 2009) and longitudinal studies (Páez et al., 2015; Rimé, Páez, Basabe, & Martínez, 2010) have confirmed that actual participation in coordinated collective gatherings reinforces group identity and cohesion. According to the available literature (see Kessler & Hollbach, 2005; Smith & Mackie, 2008; Thomas, McGarty, & Mavor, 2009a), the causal relationship between group identity and group emotions should be seen as dynamic and bidirectional, since it is likely to be influenced by social context and will probably vary over time.

Hope and Anger

Injustices are a constant feature of society, and even though people may be aware of them, they do not necessarily mobilize themselves (Goodwin & Jasper, 2006). One of the ways to counter apathy is through anger which grows out of a perception of the illegitimacy of the status quo and the discrepancy between the actual and the desired situation. According to Gamson (1992), anger fuels the injustice frame in order to counter a sense of legitimacy. Group emotions of anger are also activated when people perceive threats and identify with the disadvantaged group. In accordance with Smith and Mackie (2008) and Fischer and Manstead (2008), directing people's anger towards another group may be associated with a tendency for aggression towards that group. Furthermore, anger accounted for reinforcing mobilization in the case of farm workers in Holland and Spain as shown by Sabucedo, Durán, Fernandez, Romay, and Dorna (2007). According to Tangney, Stuewig, and Mashek (2007) anger about injustice and moral indignation can also motivate people who are not so strongly affected by a crisis to mobilize themselves out of solidarity with their more severely affected fellow citizens. Moreover, it has been widely acknowledged that anger can act as a bridge between sensitivity to social problems and active commitment to a social movement (Traïni, 2009; van Stekelenburg et al., 2011; van Zomeren et al., 2004, 2012).

Despite all the empirical evidence, it seems like anger may not always be enough to “fire up” the energy necessary to act. Certain positive emotions can also prompt people to fight for a better future. According to Jasper (1998), anger, indignation and fear are transitory responses that are shaped by underlying affects which can lead people into collective action or drive them away. Pearlman (2013) suggested that emboldening emotions that promote optimistic assessment, acceptance of risk and feelings of personal efficacy may encourage people to prioritize dignity and increase their willingness to engage in action. The motivational role of positive emotions was examined by Sabucedo and Vilas (2014) in a survey of university students carried out in a setting of cut-backs in education. This study found that positive emotions, such as hope, pride and optimism, acted as important mediator variables and explained the relationship between anger and intention to participate in a protest action. Furthermore, social movement scholars emphasize the coexistence of positive emotions and anger in real-life collective actions. Castells (2012) claims that the movements which spread across the Arab countries, Europe and the USA in 2011 were triggered by emotions of outrage and hope. More specifically, Pearlman (2013) argues that pride, anger and solidarity played an important role in the 2011 uprisings in Tunisia and Egypt. Davou and Demertzis (2013) underline the importance of hope and perceived political efficacy in motivating Greek citizens to become involved in political action. These findings highlight the fact that negative and positive emotions are interrelated and may both directly or indirectly inspire engagement in collective action.

Of all the emotions that can help people to find the courage to overcome fear and apathy, perhaps the most important is hope. As stated by Ahmed (2004), “hope is what allows us to feel that what angers us is not inevitable, even if transformation can sometimes feel impossible” (p. 184). Anger alone lacks prospects for future change; therefore, we argue that it may be the component of hope that prevents anger from leading to resignation. The study by Aminzade and McAdam (2001) suggests that both anger and hope are necessary for the mobilization

of individual and collective forms of protest. These authors assert that: “[I]n and of itself, anger is not likely to produce organized collective action, but rather other (usually individual) forms of resistance [...]. It is only when anger gets joined with hope that the forms of action we normally associate with social movements and revolutions are apt to take place” (p. 31-32). Despite the theoretical associations between hope and anger, to our knowledge, no previous empirical study has directly assessed the relationship between these two constructs. In the present study, we seek to redress this situation by examining both the direct effect of anger and hope on the intensity of participation in socio-political movements, and the sequential indirect effect of anger through feelings of hope.

In our view, hope is crucial to the act of protest. Moreover, a substantial amount of recent research on social movements emphasizes the role of hope in influencing political behavior. From a philosophical perspective, the mere act of hoping is already an initiation of “a new beginning”. In this sense, hope is not only a belief that the present circumstances can be different, but also that they should and will be different (O’Brien, 2008). In a similar approach, Billias (2008) defines hope “as a future orientation of ongoing agency” (p. 17), implying that one cannot act without hope. Social scientists define hope as more than a simple desire for a certain outcome. Rather, it is a desire that is inseparable from agency (McGeer, 2004, p. 103). More importantly, hope is necessary for social change as it sustains action and prevents disengagement in the face of difficulties or lack of control. According to Larsen et al. (1993), a belief that the present or future can only have negative outcomes would make people act according to these expectations, thus proving themselves correct. When there is no hope, agency is relinquished, resulting in a belief that action will not make any difference. Furthermore, hope requires anticipation and expectation that the desired outcome will be achieved (Drahos, 2004), and therefore provides a plan of action. Thus, hope could be seen as “a renewable resource for social change” (Courville & Piper, 2004, p. 58), as it turns individual hopes into group hopes, while at the same time spreading from the group to the individuals in that group, increasing the probability of successfully altering the status quo. Collective hope has the power to move people towards a “social script [...] in which we are expected to be active and responsible participants contributing to vibrant civil society” (Braithwaite, 2004b, p. 7).

Hope has been the object of considerable empirical research in psychology, yet little attention has been paid to its relationship with collective action frames and participation in social movements. Some scholars have begun to theorize on the role of collective hope in overcoming adversity, emphasizing particularly that it is linked to the aspiration and expectation that, with a reasonable degree of probability, certain negative circumstances can and will be changed (Bar-Tal, Halperin, & De Rivera, 2007; Fredrickson, 2009). Hope has been found to be positively associated with moral emotions and negatively associated with shame (Williamson, Sandage, & Lee, 2007) and distress (Scioli, Ricci, Nyugen, & Scioli, 2011). Hope has also been identified as an important element of the coping processes, as it arises in situations in which people expect the worst but still try to make things better anyway (Lazarus, 1991; Snyder, Rand, & Sigmon, 2005). As such, hope was found to be associated with cognitive flexibility and creativity, which in turn facilitate planning, goal setting and further action. Accordingly, Hobfoll et al. (2007) found that hope was crucial for achieving favorable recovery outcomes after trauma exposure and to forge resilience to adversity in the long term. Moreover, as suggested by Braithwaite (2004a), hope fosters social inclusion and empowerment among marginalized groups according to Courville and Piper (2004). Similarly, researchers have begun to investigate the role of hope in intergroup contexts. More specifically, Halperin and Gross (2011) found that emotion regulation and cognitive positive reappraisal were positively associated with hope, which motivated humanitarian support for others. These findings are especially important as they provide evidence of the positive effect of hope in a context of intractable conflict. Recent studies have confirmed that hope and positive emotions, even when coexisting with negative ones, are an important predictor of the endorsement of positive

social beliefs and feelings of conflict malleability (Cohen-Chen, Crisp, & Halperin, *in press*; Halperin, Porat, Tamir, & Gross, 2013). Furthermore, research has shown that as an emotion, hope is associated with social engagement and cohesion (Gee, Khalaf, & McGarty, 2007), as well as with collective efficacy and social mobilization (Páez et al., 2013; Sabucedo et al., 2007). Therefore, as Sabucedo and Vilas (2014) point out, sharing the same objectives and believing that they can be accomplished fosters both hope and a sense of pride in being a part of a movement capable of making the desired change possible.

Hope and Efficacy

The importance of hope that the current situation can be improved cannot be underestimated. As mentioned above, the most important features of hope are positive expectations about the possibility of achieving certain objectives in the future and positive feelings of outcome anticipation, regardless of the negativity of the present situation. Therefore, hope implies goal setting, planning and actual mobilization (Cohen-Chen et al., *in press*). Hope has the power to encourage people to successfully overcome adversity, or as Snyder (1994) puts it: “hope is more than distancing oneself from and delimiting the impact of failures; hope is the essential process of linking oneself to potential success” (p. 18). Although, the concept of hope is closely related to the concept of collective efficacy, each focuses on different aspects. According to Bandura (1986), efficacy is related to the belief that certain goals “can” be achieved, while hope focuses on the belief that “yes” the goals “will” be achieved in the future. For example, research by van Zomeren et al. (2004, 2008) shows that group efficacy beliefs increase collective action tendencies and group identification, pointing out that “can” leads to “we”. Likewise, empirical evidence (Magaletta & Oliver, 1999) suggests that the essential components of hope, “will” and “ways”, are related to efficacy and optimism, but are not identical constructs. In our view, the belief that certain goals can be achieved has the power to instill the will to achieve them and therefore leads to increased engagement in protest. Given that hope concerns future goals and the plausibility of achieving them, we suspect it may be seen as a potential key element for understanding engagement in collective action. In this sense, we conceptualize collective efficacy as the perception of the collective capacity to gather the necessary resources (McCarthy & Zald, 1977), for example the capability to organize and execute the specific actions required to enforce social change through joint effort. However, being capable of changing the current situation does not necessarily imply being hopeful or optimistic about the future. Therefore, we argue that the group members can perceive that the group is capable of changing the current situation through organized action (van Zomeren et al., 2004); in consequence, this objective evaluation may foster the expectancy of success and positive feelings, which characterizes hope, which in turn fosters stronger commitment to norms for action. Evidence from previous research supports this pathway: A study on the 15-M movement found that the effect of collective efficacy on participation was mediated by hope (Páez et al., 2013). In short, given that hope often serves as the spark that triggers action, we hypothesize that it fuels the collective efficacy frame and transforms it into actual mobilization.

The Present Study

Based on the above considerations, in the present study we seek to make headway regarding the identification of direct and indirect predictors of participation in collective mobilizations, such as 15-M. We highlight the importance, coexistence and interrelatedness of positive and negative group emotions (Halperin et al., 2013; Páez et al., 2013, Sabucedo & Vilas, 2014) and their relationship with collective action frames (Thomas et al., 2009a; van Zomeren et al., 2008). On the basis of the theoretical and philosophical sources cited earlier, we hypothesize a sequential mediator effect of hope in the positive relationships between anger, collective action frames and participation in collective action. Thus, the general aim of the study is to provide an empirical mediational test that explores

whether hope and anger, triggered by perceptions of injustice, collective efficacy and identity, directly or indirectly explain participation and involvement in the collective actions of the 15-M movement. The present study extends collective action research by (a) analyzing relations between collective action frames, comparing the SIMCA and the EMSICA in a specific context (namely the emergence of the 15-M socio-political protest movement), (b) examining the sequential mediating role of emotions in the relationship between those frames and collective participation, and (c) directly exploring the association between anger and hope.

Methods

Participants and Procedure

Participants in this study were 638 individuals (43.4% men) aged between 18 and 73 ($M = 31.66$, $SD = 11.39$) years, of whom 48.7% were in paid employment, 33.4% were university students, 14.4% were unemployed or retired, and 1.1% were housewives. Around half (52.8%) had a university degree, and roughly 70% had some kind of higher education. Spanish nationals accounted for 90.4% of the sample. Participants were residents of Madrid (37.2%), Barcelona (20.3%), San Sebastián (19.2%), Bilbao (11.1%) and Vitoria (7.7%). A total of 61% of those who participated in the survey claimed to have been involved in activities related to the 15-M movement on one or more than one day (see [Table 1](#) for descriptive data).¹

We interviewed participants directly in the 15-M movement camps or during demonstrations in different Spanish cities (San Sebastián, Vitoria, Bilbao, Madrid and Barcelona), as well as at universities and in the areas surrounding the 15-M camps during the month of June, 2011. The interviews were carried out by psychology PhD students. The research team instructed the interviewers to spread out through the camps or protest areas once the crowd had deployed fully and select every n -th participant in order to guarantee that every person had an equal chance of being selected. This ratio was based on the estimated number of people gathered in the camps or protest areas, and determined how many rows of respondents were skipped before every n -th participant was selected (see [Klandermans et al., 2011](#)). Next, the interviewers administered a short face-to-face survey to those who voluntarily agreed to participate in the study. All study participants signed written informed consent. The research team was responsible for alphanumerically coding the registered data, ensuring anonymity. All procedures were approved by the University of the Basque Country's Ethics Committee for Research Involving Human Beings.

Measures

Socio-Demographic and Socio-Political Variables

We gathered data on participants' sex, age, nationality, employment situation (Employed, Unemployed, Student, Other), educational level (1 = Primary and Middle School Education only, 2 = Further Education, 3 = Diploma or Graduate level) and ideological position: "Please circle a number (from 1 to 7) indicating your political views", the range being from 1 (*Extreme left*) to 7 (*Extreme right*). We also inquired about how they had voted in the elections held on May 15th, 2011 (see [Table 1](#)).

Table 1

Socio-Demographic Characteristics of 15-M Participants and Non-Participants

	Participants		Non-participants	
	Women	Men	Women	Men
N	189	159	171	115
Age				
<i>M</i>	29.3	32.1	32.2	34.2
<i>SD</i>	9.9	11.2	11.1	13.5
Education (%)				
Low	2.0	6.6	7.1	8.9
Medium	18.2	29.0	25.8	28.9
High	79.8	64.5	67.1	62.2
Employment situation (%)				
Employed	53.7	47.3	43.3	47.1
Unemployed	10.8	19.8	12.2	14.0
Student	32.0	28.6	40.0	36.9
Other	3.5	4.3	4.4	1.9
Marital status (%)				
Single	80.2	82.6	72.6	71.1
Married	12.4	14.1	22.9	25.6
Separated	7.4	3.3	3.8	2.2
Widow/widower	0.0	0.0	0.6	1.1
Voted (%)^a				
Yes	78.9	61.5	61.8	73.3
No	21.1	38.5	38.2	26.7
Abstained from voting (%)				
Yes	19.6	38.5	37.5	38.5
No	80.4	61.5	62.5	61.5
Changed their vote (%)				
Yes	32.7	25.5	15.0	7.4
No	67.3	74.5	85.0	92.6
Blank vote (%)				
Yes	19.0	22.7	5.2	9.5
No	81.0	77.3	94.8	90.5
Ideology^b				
<i>M</i>	2.4	2.5	3.2	3.1
<i>SD</i>	1.0	1.1	1.3	1.3

^aEach participant was asked to indicate whether he/she had voted / had intentionally abstained from voting / had intentionally changed his/her vote / voted in blank in the elections held on May 15th, 2011.

^bScores ranging from 1 (*extreme left*) to 7 (*extreme right*).

Perception of Injustice

As indicators of perceived injustice in relation to the current social situation we developed four items to assess endorsement of the specific goals and grievances of the 15-M movement. We asked participants to what extent they agreed with the need to protest against: “the current political, economic and social scenario”; “corruption

among politicians”; “corruption among bankers and business people”; and “the vulnerability of ordinary citizens vis-à-vis the ‘powers that be’ in general and the holders of socioeconomic and political power in particular”. Response options ranged from 1 (*Not at all*) to 7 (*Very strongly*). Cronbach’s alpha coefficient of reliability was high ($\alpha = .88$).

Perception of Efficacy of Collective Action

We asked participants to think about the experience of participation in demonstrations/concentrations related to 15-M or in others group activities. We inquired about the perception of group capability for changing the current situation through the organized action of the 15-M movement with the following statement, created ad hoc: “We realized we were perfectly capable of achieving our aims”, with a response range from 1 (*Not at all*) to 7 (*Very strongly*).

Group Identity

We used three items (based on Páez et al., 2013) to assess the extent to which respondents shared beliefs of group unity, satisfaction and empowerment. Participants evaluated to what extent they felt that: “We acted as a single person. We experienced and shared a moment of unity”, “We felt proud to belong to this group”, “We felt transformed and much more convinced of our ideas”. The response range was from 1 (*Not at all*) to 7 (*Very strongly*). Cronbach’s α coefficient was .90.

Emotions

We asked respondents to evaluate to what extent they felt anger and hope when thinking about the current social situation. Respondents were asked: Indignation, righteous anger – “Do you feel indignation or anger about the current social situation?” and hope – “Do you have high hopes that the current social situation will improve?” (response range from 1 [*Not at all*] to 7 [*A great deal*]).

Personal Participation

To measure the intensity of participation we asked: “How many days did you spend in the demonstration?” We used this continuous variable, which ranged from 0 to 24 days ($M = 3.75$; $SD = 5.74$), for all subsequent analyses described in this paper.ⁱⁱ

Results

Analytical Strategy

With the aim of exploring the relationships between the frames of collective action and the mediating role of emotions, we used structural equations modeling analyses with Mplus 6.11 (Muthén & Muthén, 2010). The estimation procedure applied was maximum likelihood. Considering the lack of multivariate normality, we applied the bootstrap method ($N = 5000$), which consists of the repeated extraction of samples from the dataset and the estimation of the desired statistic in each of the resampled datasets. It is a non-parametric approach to parameter estimation, and hence free from assumptions about the normality of the variables’ distribution or the sampling distribution of the statistics (see Efron & Tibshirani, 1993). Standard errors and confidence intervals based on a bootstrap sampling distribution are calculated for each of the parameters or statistics. If the values of the estimated

effect within the confidence interval include zero, this indicates a non-significant effect. In addition to the chi-square test, the following indexes were used to evaluate the fit of the models: the CFI (Comparative Fit Index) and the TLI (Tucker-Lewis Index), for which values above .90 are considered acceptable, as well as the SRMR (Standardized Root Mean Square Residual), for which values smaller than or close to .08 indicate a relatively good model fit (Bentler, 1990; Jöreskog & Sörbom, 1993). Furthermore, to compare alternative models we paid particular attention to the change in CFI (Schermelleh-Engel, Moosbrugger, Müller, & Engel, 2003); $\Delta\text{CFI} \leq 0.01$ indicates that two models are equivalent (Cheung & Rensvold, 2002). Additionally, we included the Akaike Information Criterion (AIC), for which lower values indicate a better and more parsimonious model (Ullman, 2001). In the presentation of the results, the standardized solution is shown. All the coefficients represented by continuous arrows in the graphs are statistically significant at $p < .05$, while the dashed lines indicate effects that are not statistically significant.

Construct Validity

We first tested a pure measurement model in order to ensure that the model fit of our structural models was not affected by measurement problems and to confirm that the indicators used are really measuring different concepts. Perception of injustice was composed of four items. The group identity factor comprised three items. Furthermore, we measured perception of efficacy, anger, hope and intensity of participation through one item. In this model all the latent (perception of injustice, group identity) and manifest (perception of efficacy, anger, hope, intensity of participation) variables were specified as correlated exogenous constructs. We allowed each item to load only on its designated latent factor and did not allow any errors to correlate. Subsequently, we allowed each latent factor and manifest variable to correlate with the other latent factors and manifest variables. The complete measurement model obtained a very good fit, $\chi^2(33, N = 638) = 75.578, p < .001, \text{CFI} = .989, \text{TLI} = .981, \text{SRMR} = .023$. All items loaded highly on their designated latent factor (all factor loadings $> .74$) and were significant based on 99% bootstrapping confidence intervals. In light of the above, we concluded that our measures had adequate construct validity. The correlations, means and standard deviations of all the latent and manifest variables included in the model are presented in Table 2. There were strong positive associations between the measures of efficacy and group identity. The efficacy measure was positively and strongly related to the measure of hope, as were the measure of injustice and the measure of anger. Moreover, the measure of hope was also positively related to the measure of anger. Finally, intensity of participation was positively related to identity, efficacy and hope, as well as to anger and injustice, although to a lesser extent.

In the next step, we developed structural models in which hope and anger mediated the relationship between injustice, efficacy and identity frames and collective action, operationalized as intensity of participation. As regards the measurement part of the models, all the factor loadings were significant based on 95% bootstrapping confidence intervals. To test the mediation hypotheses, we computed the indirect effects (standardized estimates are presented) and tested their significance based on bootstrapped (unstandardized) confidence intervals.

In the light of the findings reported by the studies outlined earlier, we set out to compare two alternative models, including anger and hope as mediators between the frames of injustice, efficacy and collective action. In the next step we compared two alternative hypotheses in relation to the mediating role of identity, hope and anger. The two models tested were, first, a model based on the SIMCA (van Zomeren et al., 2008), in which identity predicts collective action both directly and indirectly (via the frames of injustice and efficacy); emotions were also included, so as to evaluate their mediating role between collective action frames and intensity of participation; and second, a model based on the EMSICA (Thomas et al., 2009a), in which identity mediates the relationship between the

frames of efficacy and injustice and collective action, with hope and anger being included as mediators as in the previous model. We also allowed a separate path from anger to hope.

Table 2

Correlations and Descriptive Statistics of the Variables Included in the Models

	Intensity of Participation	Efficacy	Injustice	Identify	Anger	Hope
Efficacy	.32***					
Injustice	.16***	.15***				
Identity	.35***	.77***	.25***			
Anger	.21***	.20***	.52***	.28***		
Hope	.33***	.50***	.23***	.44***	.28***	
<i>M</i>	3.75	4.54	6.58	5.07	6.46	4.80
<i>SD</i>	5.74	1.84	0.87	1.67	1.00	1.72

Note. *N* = 638.

****p* < .001.

Table 3 shows the fit indexes for the proposed models. The TLI and CFI and the SRMR were highly satisfactory for both Model 1 and Model 2. The AIC was very similar for both models, suggesting that neither of them can be considered clearly superior in terms of representing the relationships posited. We now report the results for both models.

Table 3

Fit Indexes for the Alternative Models

	χ^2	<i>df</i>	TLI	CFI	SRMR	AIC
Model 1: SIMCA + emotions	50.61	34	.988	.992	.023	21626.19
Model 2: EMSICA + emotions	49.10	33	.988	.993	.022	21626.72

Note. Both χ^2 *p* < .001.

As can be seen in Figure 1, identity was positively related to perceived efficacy and injustice. Moreover, the direct effect of identity on intensity of participation did not quite reach conventional levels of statistical significance (*p* = .086); however, it was significant based on 95% bootstrapped confidence intervals (*B* = .10, *SE* = .06, *p* = .086, 95% CI [0.004, 0.193]).

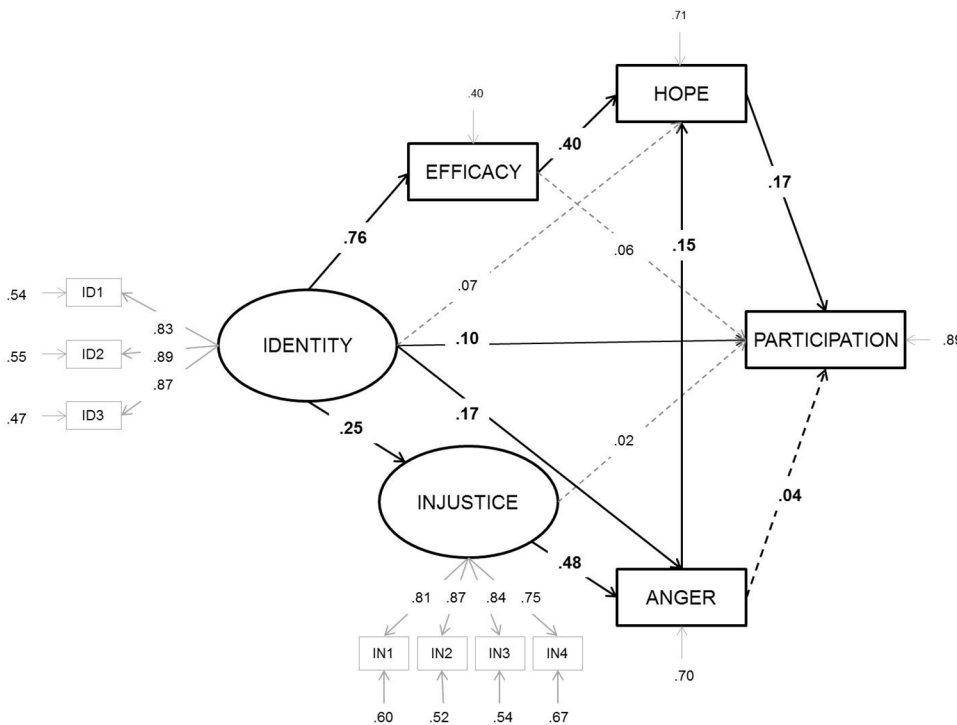


Figure 1. Model 1 – Sequential mediation models based on the Social Identity Model of Collective Action (SIMCA) with hope and anger as mediators between collective action frames and intensity of participation.

Note. Path coefficients are standardized estimates. All the coefficients represented by continuous arrows in the graphs are statistically significant based on 95% bootstrapped confidence intervals, while the dashed lines indicate effects that are not statistically significant.

The direct effect of the frames of injustice and efficacy on intensity of participation did not emerge as significant. On the other hand, the effects of efficacy and injustice on emotions were significant and large; more importantly we found a direct relationship between hope and intensity of participation. Considering the lack of any direct effects of efficacy and injustice on intensity of participation we examined indirect effects. We observed that efficacy had a significant indirect effect on intensity of participation through hope ($B = .07, SE = .02, p < .001, 99\% CI [0.052, 0.398]$) and injustice had an indirect effect on intensity of participation sequentially through anger and hope ($B = .01, SE = .01, p = .023, 95\%CI [0.010, 0.177]$). We also found a significant indirect effect of identity through efficacy and hope ($B = .05, SE = .01, p < .001, 99\% CI [0.048, 0.371]$) and through injustice, anger and hope ($B = .01, SE = .01, p = .038, 95\%CI [0.001, 0.033]$). Furthermore, the results revealed an indirect effect of anger on intensity of participation through hope ($B = .03, SE = .01, p = .011, 95\%CI [0.029, 0.265]$).

As proposed in the EMSICA, in our Model 2 we allowed a covariance between injustice and efficacy, and both variables were positively related ($r = .15, SE = .05, p = .003, 99\% CI [0.013, 0.417]$) (see Figure 2). In Model 2, identity was strongly and positively related to perception of efficacy ($B = .74, SE = .03, p < .001, 99.5\% CI [0.678, 0.808]$) and positively, although less strongly, related to perception of injustice ($B = .13, SE = .03, p < .001, 99\% CI [0.043, 0.223]$). Moreover, the results revealed an indirect effect of efficacy through hope ($B = .07, SE = .02, p < .001, 99\% CI [0.023, 0.120]$) and through identity ($B = .07, SE = .04, p = .090, 95\% CI [0.002, 0.144]$), and a sequential mediational effect through identity, anger and hope ($B = .01, SE = .01, p = .080, 95\% CI [0.001, 0.007]$). On the other hand, and contrary to our expectations, the indirect effect of injustice through identity did not reach

significance based on bootstrapped confidence intervals ($B = .01$, $SE = .01$, $p = .121$, 95% CI [-0.001, 0.027]). Nevertheless, we did find significant sequential indirect effects for injustice on intensity of participation through anger and hope ($B = .01$, $SE = .01$, $p = .023$, 95% CI [0.002, 0.023]), as well as through identity, anger and hope ($B = .01$, $SE = .01$, $p = .096$, 99% CI [0.0001, 0.001]). Just like in Model 1, the direct effect of identity on intensity of participation was marginally significant ($B = .10$, $SE = .06$, $p = .086$, 95% CI [0.004, 0.193]), and identity was indirectly associated with intensity of participation through anger and hope ($B = .01$, $SE = .01$, $p = .076$, 95% CI [0.0001, 0.009]). As in the previous model, anger had an indirect effect on intensity of participation through hope ($B = .03$, $SE = .01$, $p = .011$, 95% CI [0.000, 0.052]).

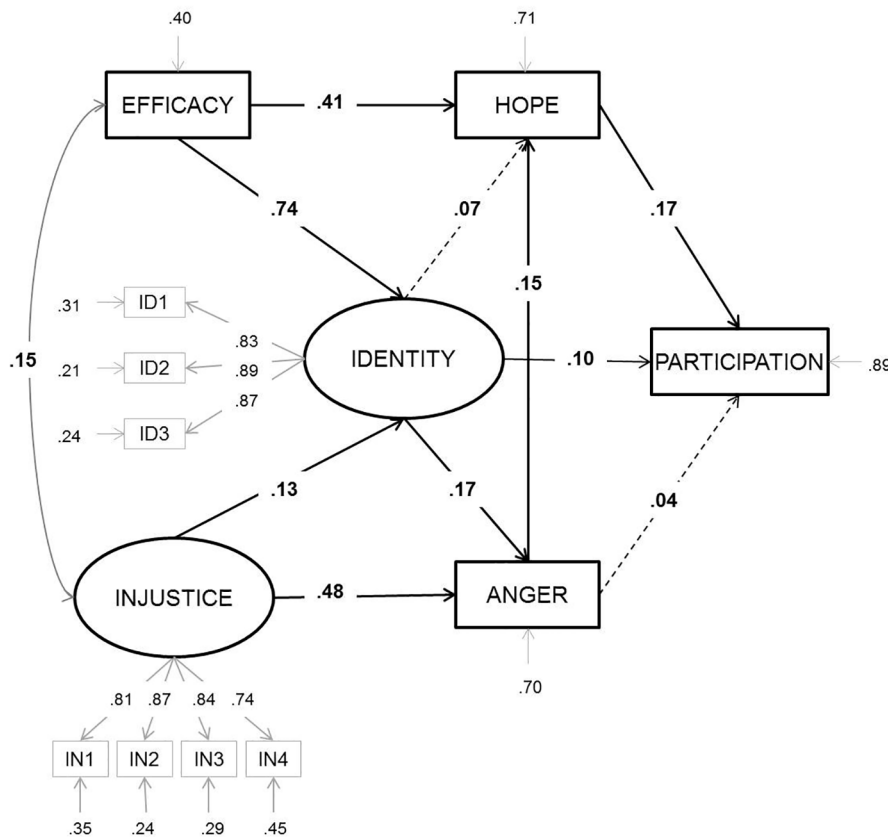


Figure 2. Model 2 – Alternative sequential mediation models based on the Encapsulated Model of Social Identity in Collective Action (EMSICA) with hope and anger as mediators between collective action frames and intensity of participation.

Note. Path coefficients are standardized estimates. Significant covariances between latent factors are shown by double-headed solid lines. All the coefficients represented by continuous arrows in the graphs are statistically significant based on 95% bootstrapped confidence intervals, while the dashed lines indicate effects that are not statistically significant.

The results revealed that identity partially encapsulated the effect of the perception of injustice and efficacy on intensity of participation. Moreover, the indirect effect of perceived efficacy through hope, and the indirect effect of injustice and identity sequentially through anger and hope, suggested that hope could be considered as one of the most important direct predictors of intensity of participation.

In the two models, both injustice and efficacy had substantial positive effects on the intensification of the emotions of anger and hope, respectively. More importantly, hope completely mediated the effect of anger on intensity of

participation. Furthermore, in both models we found indirect effects of the predictor variables, suggesting that hope could be considered the key component that explains the relationship between the collective action frames, anger and the intensity of participation.

Discussion

The results of the present field study with a large sample of individuals contacted directly at either the 15-M movement camps or their surrounding areas generally support theoretical claims about the crucial role of hope in mobilizing individuals to take part in collective action. Hope triggers participation by framing the social issue as a solvable problem (Cohen-Chen et al., *in press*; Páez et al., 2013). These findings contribute to the limited yet growing body of empirical literature on hope in collective action and, to our knowledge, offer the first empirical test of associations between collective action frames, anger and hope, and actual participation in protest movements. The results also provide scientific support for the theoretical works of Ahmed (2004) and Aminzade and McAdam (2001), and the empirical findings reported by Sabucedo and Vilas (2014), illustrating that hope accounts for the effect of anger in evoking protest participation.

Furthermore, our study replicates the findings of previous studies in other socio-cultural contexts (Thomas et al., 2009a; van Zomeren, Leach, & Spears, 2010; van Zomeren et al., 2008). The results support the dynamic, multi-faceted and interactive conception of identity (Thomas et al., 2012), which is also in line with the neo-Durkheimian model (Páez et al., 2015). Collective action can be seen as both the product of some shared beliefs and identities, and as causing the emergence of a shared collective identity. Nevertheless, in the particular case of 15-M; and as pointed out by Thomas and colleagues (2009a); when people experience a strong reaction to injustice and at the same time believe that group efforts can help to achieve goals and combat the injustice, it is highly likely that an identity will emerge based on the shared emotional reaction (Mazzoni, van Zomeren, & Cicognani, 2015). Indeed, the comparison of recently proposed models of collective action (Thomas et al., 2009a; van Zomeren et al., 2008) permitted us an evaluation of the facilitating and encapsulating effect of collective identity in collective action. Although the two models in question fit the data well, we can conclude that group identity motivates participation not only directly, but also indirectly through feelings of anger and hope. When shared grievances are translated into shared identity and a vision that involves prospects for social change, hope is what inspires people to achieve their goals (Ahmed, 2004; Cohen-Chen et al., *in press*; Snyder, 1994; Snyder et al., 2005).

Our study extends previous findings by introducing emotions of hope and anger as amplifiers of collective action frames. Our results revealed that regardless of the model in question hope acts as a mediator reinforcing participation and (at least partly) explains the influence of a shared frame of injustice, collective efficacy and identity on intensity of participation.

These results were congruent with evidence from a field study conducted by van Stekelenburg et al. (2011), who found that emotional response and group-based anger mediated between instrumental motives and motivational strength, whereas identity and ideological motives had a direct effect on protest participation. Furthermore, our findings highlight the relative importance of affective variables over non-affective ones in predicting collective action (van Zomeren et al., 2008). More importantly, our findings revealed that hope needs to be taken into consideration when explaining relationships between motives and actual participation. On the one hand, we found that hope, together with identity and indirectly with efficacy, is strongly and positively related to intensity of collective partici-

pation. On the other hand, anger and hope are intensified by both injustice and efficacy, respectively. Moreover the indirect effect of efficacy through hope and identity is greater than that of injustice through anger and hope. These results confirm and extend recent claims by Sabucedo and Vilas (2014) that positively valenced emotions could be considered as mediators between anger and involvement in collective action. Therefore, we can conclude that increased engagement in collective action is not possible without anger, but anger is fueled by hope in order to be an effective agent of change.

In the case of the present study, we explored the role of hope as a potential direct predictor variable of participation, underlining at the same time that it fully mediates the effect of anger on participation. Therefore, we found empirical evidence for Castells' (2012) idea that the movements of 2011 were triggered by networks of outrage and hope. Moreover, such results may contribute significantly to recent literature on the effects of hope in conflictive contexts (Cohen-Chen et al., *in press*; Halperin et al., 2013; Páez et al., 2013; Sabucedo et al., 2007).

Furthermore, it is important to underscore that the study explores the dynamics of action in relation to social issues that are of defining significance within the recent contemporary social context. Moreover, it points to the vitality of collective action models developed in social psychological experiments, and extends the SIMCA and EMSICA by highlighting the role of emotional reactions as mediators of action and mobilization.

The present study also has some limitations that need to be taken into account when discussing the implications of our findings and designing new research directions. First, the measure of social identity that we implemented in the present study was based on situational identification with other demonstrators or the group, rather than on identification with a specific social category. We argue that the identity which emerges from interaction with the co-present participants elicits similar outwardly focused action tendencies aimed at overcoming an obstacle or injustice. That said, social interaction has been found to be crucial for identity formation (Postmes, Haslam, & Swaab, 2005; Postmes, Spears, Lee, & Novak, 2005) and to help identities become a powerful tool for promoting social change (McGarty et al., 2014). Accordingly, and in line with the predictions of self-categorization theory, intense interaction with the group of demonstrators would be associated with enhanced identification and positive emotions (Novelli, Drury, Reicher, & Stott, 2013; Páez et al., 2013). Thus, although we asked our participants about situational group identity or perceived unity with the group of participants, we believe that our measure accurately assesses the construct. Second, collective efficacy and hope were measured with a single item. In view of the fact that the collective efficacy measure showed no collinearity with the affective measure of hope (the correlation between the two variables was only moderate, see Table 2), we are confident that there is a difference between the affective and non-affective measures of predictors of collective action.

Of course an important limitation concerns the correlational nature of the study; this prevents us from inferring causality from our results. The cross-sectional and retrospective design does not allow for causal claims about the associations between collective action frames and participation, or the impact of emotions (anger, hope). Nevertheless, we would like to emphasize that research on real-world events in general is very difficult to carry out. First, events like spontaneous protest demonstrations are sometimes unpredictable. In this regard, future research should test those associations in different samples and with longitudinal designs that incorporate measures before and after the participation in the protest demonstration, as well as follow-ups in order to evaluate positive and negative changes over time.

More precisely, in the case of our study, shared identity, perceived injustice and collective efficacy and emotions were postulated as predictors of collective action. However, participation in a demonstration may have consequences

for the emotions and perceptions involved (Novelli et al., 2013; Valdesolo, Ouyang, & DeSteno, 2010) and may motivate engagement in future actions (Becker, Tausch, & Wagner, 2011). Nevertheless, our findings revealed that a reverse causal model (in which the effects of intensity of participation in collective action on group identity, perceived efficacy and injustice are mediated by hope and anger) did not produce a better fit and showed fewer significant mediation effects. We are aware of the fact that a longitudinal study of the role of positive and negative emotions in the relationship between collective action frames and participation would surely provide a more convincing assessment of causality. Therefore, given that the main aim of this study was to explain intensity of participation, we decided to follow our theoretical framework which postulated the role of hope and anger as amplifiers of collective action frames (Sabucedo & Vilas, 2014; van Stekelenburg & Klandermans, 2007; van Zomeren et al., 2004).

We acknowledge that we have necessarily limited our analysis to collective action frames and the emotions of anger and hope. In particular, we have limited our analysis to the positive emotion of hope. Despite the theoretical associations between hope and action tendencies directed towards achieving desirable goals, empirical evidence is still scarce. A recent study by Greenaway et al. (2016) confirmed the motivating potential of hope, over and above the effect of other emotions, and illustrated the power of this emotion in increasing support for social change, although the authors did not focus their analyses on actual political behavior. We are aware that there may be other positive emotions that encourage participation. Pride, for example, may have the power to prompt individuals to act in accordance with their principles, irrespective of their perception of the efficacy of group actions (Tausch & Becker, 2013; Vilas & Sabucedo, 2012). In this sense, the pride generated by doing what one believes to be morally correct may transform apathy into action. In this case, we would be speaking of a moral obligation. Future research should determine the specific role of individual moral convictions, moral social identity and group-based pride for motivating political engagement.

Finally, it is also important to mention that we tested our hypothesis within the context of the emergence of a specific movement. We consider the 15-M protest movement an example of a new type of political participation that spread rapidly throughout the world in 2011. Nevertheless, future studies should determine the role of hope, or positive emotions in general, in the mobilization of political action in different mobilizing contexts.

Conclusion

This study sets out to help clarify the explanatory mechanisms of collective action and stresses the role of group emotions of different valence in shaping actual protest participation. We based our theoretical background on the assumptions and models developed within the frameworks of theories of collective action, social identity theory and the neo-Durkheimian perspective (Páez et al., 2015; Páez, Rimé, Basabe, & 2005). In brief, the results of this study, while supporting the widely accepted view that anger is activated when people perceive injustice, collective efficacy and identity, extend existing collective action research by providing initial evidence that positive emotions may be crucial for motivating political participation. Overall, we argue that despite the recognition of the importance of emotions in collective action, the current body of existing literature still does not sufficiently account for the role of positively valenced emotions. Whereas Thomas, McGarty, and Mavor (2009b) have argued for the importance of advantaged groups' prosocial emotions in transforming apathy into action for social change, we believe that protest participation, although initially motivated by emotions of a negative nature is, encouraged and sustained rather through its coexistence with positive emotions, such as hope. To the best of our knowledge, this

is the first study to test the sequential mediating effect of anger and hope between collective action frames and actual participation. Importantly, our findings illustrate that self-transcendent emotional states have the power to transform beliefs and tendencies into actual action. Hence, organized action and social change can be successful if people's feelings of hope are strong enough to constructively channel the mobilizing force of negative emotions (arising from adverse social situations).

Notes

i) Although around 70% of Spaniards reported to share the grievances and sympathize with 15-M (Cols, 2011), this does not mean that they would declare their disposition to participate, nor that they would eventually play an active part in the movement. Therefore, we were interested in examining the attitudes, beliefs and emotions of those who were and who were not actively involved. Those who indicated that they did not take active part in any of the activities related to 15-M were instructed to think of the most important group activity or mass gatherings in which they had participated in the last two weeks.

ii) In preliminary analyses we used a categorical measure of intensity of participation, which presented exactly the same patterns of results. Considering the reviewers' critiques and the fact that a continuous variable (number of days spent at the demonstrations) may represent more directly the mechanisms that drive people to participate we re-run all the analyses with the continuous measure "intensity of participation" as a dependent variable. Moreover, this outcome variable assessed actual involvement rather than a declaration of intention to participate, which should minimize a social desirability bias. Furthermore, in order to confirm our findings, we tested our model also with other measures of active participation which were included in the questionnaire but are not reported in this manuscript: questions on political coping, previous participation in demonstrations, and social sharing about social movements. All these outcome variables showed similar results, confirming the robustness of the findings presented in the current version of the manuscript.

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Competing Interests

The authors have declared that no competing interests exist.

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References

- Ahmed, S. (2004). *The cultural politics of emotion*. Edinborough, United Kingdom: Routledge.
- Aminzade, R., & McAdam, D. (2001). Emotions and contentious politics. In R. Aminzade, J. A. Goldstone, D. McAdam, E. J. Perry, W. H. Sewell, S. Tarrow, & C. Tilly (Eds.), *Silence and voice in the study of contentious politics* (pp. 14-50). Cambridge, United Kingdom: Cambridge University Press.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ, USA: Prentice-Hall.

- Bargh, J. A. (1984). Automatic and conscious processing of social information. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 3, pp. 1-44). Hillsdale, NJ, USA: Erlbaum.
- Bar-Tal, D., Halperin, E., & De Rivera, J. (2007). Collective emotions in conflict situations: Societal implications. *The Journal of Social Issues, 63*, 441-460. doi:10.1111/j.1540-4560.2007.00518.x
- Becker, J. C., Tausch, N., & Wagner, U. (2011). Emotional consequences of collective action participation: Differentiating self-directed and outgroup-directed emotions. *Personality and Social Psychology Bulletin, 37*, 1587-1598. doi:10.1177/0146167211414145
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246. doi:10.1037/0033-2909.107.2.238
- Billias, N. (2008). Hope as a moral virtue. In J. McDonald & A. M. Stephenson (Eds.), *The resilience of hope* (pp. 17-27). Amsterdam, Netherlands: Rodopi.
- Braithwaite, V. (2004a). The hope process and social inclusion. *The Annals of the American Academy of Political and Social Science, 592*, 128-151. doi:10.1177/0002716203262096
- Braithwaite, V. (2004b). Collective hope. *The Annals of the American Academy of Political and Social Science, 592*, 6-15. doi:10.1177/0002716203262049
- Castells, M. (2012). *Networks of outrage and hope: Social movements in the Internet age*. Cambridge, United Kingdom: Polity Press.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233-255. doi:10.1207/S15328007SEM0902_5
- Cohen-Chen, S., Crisp, R. J., & Halperin, E. (in press). A new appraisal-based framework underlying hope in conflict resolution. *Emotion Review*.
- Cols, C. (2011, June 4). El desalojo de los acampados tiene el apoyo del 40% de los ciudadanos [The eviction of the campers has the support of 40% of citizens]. *El Periódico*. Retrieved from <http://www.elperiodico.com/es/noticias/politica/20110604/desalojo-losacampados-tiene-apoyo-del-los-ciudadanos/1031134.shtml>
- Courville, S., & Piper, N. (2004). Harnessing hope through NGO activism. *The Annals of the American Academy of Political and Social Science, 592*, 39-61. doi:10.1177/0002716203261940
- Davou, B., & Demertzis, N. (2013). Feeling the Greek financial crisis. In N. Demertzis (Ed.), *Emotions in politics: The affect dimension in political tension* (pp. 93-123). London, United Kingdom: Palgrave Macmillan.
- Drahos, P. (2004). Trading in public hope. *The Annals of the American Academy of Political and Social Science, 592*, 18-38. doi:10.1177/0002716203261614
- Drury, J., & Reicher, S. (2009). Collective psychological empowerment as a model of social change: Researching crowds and power. *The Journal of Social Issues, 65*(4), 707-725. doi:10.1111/j.1540-4560.2009.01622.x
- Efron, B., & Tibshirani, R. J. (1993). *An introduction to the bootstrap*. Boca Raton, FL, USA: Chapman & Hall.
- Fischer, A. H., & Manstead, A. S. R. (2008). Intergroup emotions. In M. Lewis, J. M. Haviland, & L. Feldman (Eds.), *Handbook of emotions* (3rd ed., pp. 428-439). New York, NY, USA: The Guilford Press.
- Foster-Fishman, P. G., Cantillon, D., Pierce, S. J., & Van Egeren, L. (2007). Building an active citizenry: The role of neighborhood problems, readiness, and capacity for change. *American Journal of Community Psychology, 39*, 91-106. doi:10.1007/s10464-007-9097-0

- Fredrickson, B. (2009). *Positivity: Top-notch research reveals the 3 to 1 ratio that will change your life*. New York, NY, USA: Random House LLC.
- Frijda, N. H. (1988). The laws of emotion. *The American Psychologist*, *43*, 349-358. doi:[10.1037/0003-066X.43.5.349](https://doi.org/10.1037/0003-066X.43.5.349)
- Gamson, W. (1992). The social psychology of collective action. In A. D. Morris & C. McClurg Mueller (Eds.), *Frontiers in social movement theory* (pp. 53-76). New Haven, CT, USA: Yale University Press.
- Gee, A., Khalaf, A., & McGarty, C. (2007). Using group-based interaction to change stereotypes about people with mental disorders. *Australian Psychologist*, *42*, 98-105. doi:[10.1080/00050060701280581](https://doi.org/10.1080/00050060701280581)
- Goodwin, J., & Jasper, J. M. (2006). *Social movements: Critical concepts in sociology*. London, United Kingdom: Routledge.
- Greenaway, K. H., Cichocka, A., van Veelen, R., Likki, T., & Branscombe, N. R. (2016). Feeling hopeful inspires support for social change. *Political Psychology*, *37*, 89-107. doi:[10.1111/pops.12225](https://doi.org/10.1111/pops.12225)
- Halperin, E., & Gross, J. (2011). Emotion regulation in violent conflict: Reappraisal, hope, and support for humanitarian aid to the opponent in wartime. *Cognition and Emotion*, *25*, 1228-1236. doi:[10.1080/02699931.2010.536081](https://doi.org/10.1080/02699931.2010.536081)
- Halperin, E., Porat, R., Tamir, M., & Gross, J. J. (2013). Can emotion regulation change political attitudes in intractable conflicts? From the laboratory to the field. *Psychological Science*, *24*, 106-111. doi:[10.1177/0956797612452572](https://doi.org/10.1177/0956797612452572)
- Hanna, F. J. (2002). *Therapy with difficult clients: Using the precursor's model to awaken change*. Washington, DC, USA: American Psychological Association.
- Hessel, S. (2010). *¡Indignaos! Un alegato contra la indiferencia y a favor de la insurrección pacífica* [Time for Outrage!]. Barcelona, Spain: Destino.
- Hobfoll, S. E., Watson, P., Bell, C. C., Bryant, R. A., Brymer, M. J., Friedman, M. J., & Ursano, R. J. (2007). Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. *Psychiatry*, *70*, 283-315. doi:[10.1521/psyc.2007.70.4.283](https://doi.org/10.1521/psyc.2007.70.4.283)
- Jasper, J. M. (1998). The emotions of protest: Affective and reactive emotions in and around social movements. *Sociological Forum*, *13*, 397-424. doi:[10.1023/A:1022175308081](https://doi.org/10.1023/A:1022175308081)
- Javaloy, F., Rodríguez, A., & Espelt, E. (2001). *Comportamiento colectivo y movimientos sociales* [Collective behavior and social movements]. Madrid, Spain: Prentice Hall.
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ, USA: Erlbaum.
- Kawakami, K., & Dion, K. L. (1993). The impact of salient self-identities on relative deprivation and action intentions. *European Journal of Social Psychology*, *23*, 525-540. doi:[10.1002/ejsp.2420230509](https://doi.org/10.1002/ejsp.2420230509)
- Kessler, T., & Hollbach, S. (2005). Group-based emotions as determinants of ingroup identification. *Journal of Experimental Social Psychology*, *41*, 677-685. doi:[10.1016/j.jesp.2005.01.001](https://doi.org/10.1016/j.jesp.2005.01.001)
- Kirschner, S., & Tomasello, M. (2010). Joint music making promotes pro-social behavior in 4-year-old children. *Evolution and Human Behavior*, *31*, 354-364. doi:[10.1016/j.evolhumbehav.2010.04.004](https://doi.org/10.1016/j.evolhumbehav.2010.04.004)
- Klandermans, B. (1988). The formation and mobilization of consensus. In B. Klandermans, H. Kriesi, & S. Tarrow (Eds.), *From structure to action: Comparing movement participation across cultures* (pp. 173-196). Greenwich, United Kingdom: Jai Press.
- Klandermans, B. (1997). *The social psychology of protest*. Cambridge, United Kingdom: Blackwell.

- Klandermans, B., van Stekelenburg, J., van Troost, D., van Leeuwen, A., Walgrave, S., Verhulst, L., ... Wouters, R. (2011). *Manual for data collection on protest demonstrations. Caught in the act of protest: Contextualizing contestation (CCC-project). Version 3.0.* Amsterdam and Antwerp: VU University and University of Antwerp.
- Laraña, E., & Diez, R. (2012). Las raíces del movimiento 15-M: Orden social e indignación moral [The roots of the movement 15-M: Social order and moral indignation]. *Revista Española del Tercer Sector*, 20, 105-144. Retrieved from www.fundacionluisvives.org/rets/20/articulos/83812/index.html
- Larsen, K. S., Groberg, D. H., Simmons, D. D., & Ommundsen, R. (1993). Authoritarianism, perspectives on the environment, and work values among social science students in former socialist and western societies. *Social Behavior and Personality*, 21, 251-263. doi:10.2224/sbp.1993.21.3.251
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY, USA: Oxford University Press.
- Leach, C. W., Snider, N., & Iyer, A. (2002). "Spoiling the consciences of the fortunate": The experience of relative advantage and support for social equality. In I. Walker & H. J. Smith (Eds.), *Relative deprivation: Specification, development, and integration* (pp. 136-163). New York, NY, USA: Cambridge University Press.
- LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York, NY, USA: Simon and Schuster.
- Livingstone, A. G., Spears, R., Manstead, A. S. R., Bruder, M., & Shepherd, L. (2011). We feel, therefore we are: Emotion as a basis for self-categorization and social action. *Emotion*, 11, 754-767. doi:10.1037/a0023223
- Loewenstein, G. F., Weber, E. U., Hsee, C. K., & Welch, N. (2001). Risk as feelings. *Psychological Bulletin*, 127, 267-286. doi:10.1037/0033-2909.127.2.267
- Loewenstein, G., & Lerner, J. (2003). The role of affect in decision making. In R. J. Davidson, K. R. Sherer, & H. H. Goldsmith (Eds.), *Handbook of affective science* (pp.619-642). Oxford, United Kingdom: Oxford University Press.
- Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology*, 79, 602-616. doi:10.1037/0022-3514.79.4.602
- Magaletta, P. R., & Oliver, J. M. (1999). The hope construct, will, and ways: Their relations with self-efficacy, optimism, and general well-being. *Journal of Clinical Psychology*, 55, 539-551. doi:10.1002/(SICI)1097-4679(199905)55:5<539::AID-JCLP2>3.0.CO;2-G
- Maitner, A. T., Mackie, D. M., & Smith, E. R. (2006). Evidence for the regulatory function of intergroup emotion: Emotional consequences of implemented or impeded intergroup action tendencies. *Journal of Experimental Social Psychology*, 42, 720-728. doi:10.1016/j.jesp.2005.08.001
- Mazzoni, D., van Zomeren, M., & Cicognani, E. (2015). The motivating role of perceived right violation and efficacy beliefs in identification with the Italian water movement. *The Journal of Positive Psychology*, 36, 315-330. doi:10.1111/pops.12101
- McCarthy, J. D., & Zald, M. N. (1977). Resource mobilization and social movements: A partial theory. *American Journal of Sociology*, 82, 1212-1241. doi:10.1086/226464
- McGarty, C., Thomas, E. F., Lala, G., Smith, L. G. E., & Bliuc, A.-M. (2014). New technologies, new identities, and the growth of mass opposition in the Arab Spring. *Political Psychology*, 35, 725-740. doi:10.1111/pops.12060
- McGeer, V. (2004). The art of good hope. *The Annals of the American Academy of Political and Social Science*, 592, 100-127. doi:10.1177/0002716203261781

- Musgrove, L., & McGarty, C. (2008). Opinion-based group membership as a predictor of collective emotional responses and support for pro- and anti-war action. *Social Psychology, 39*, 37-47. doi:10.1027/1864-9335.39.1.37
- Muthén, L. K., & Muthén, B. O. (2010). *Mplus* (Version 6) [Computer software]. Los Angeles, CA, USA: Author.
- Novelli, D., Drury, J., Reicher, S., & Stott, C. (2013). Crowdedness mediates the effect of social identification on positive emotion in a crowd: A survey of two crowd events. *PLOS ONE, 8*(11), Article e78983. doi:10.1371/journal.pone.0078983
- O'Brien, W. (2008). Exercise of hope. In J. McDonald & A. M. Stephenson (Eds.), *The resilience of hope* (pp. 33-34). Amsterdam, Netherlands: Rodopi.
- Páez, D., Javaloy, F., Włodarczyk, A., Espelt, E., & Rimé, B. (2013). El Movimiento 15-M: Sus acciones como rituales, compartir social, creencias, valores y emociones [The 15-M movement: Actions as rituals, social sharing, beliefs, values and emotions]. *Revista de Psicología Social: International Journal of Social Psychology, 28*, 19-33. doi:10.1174/021347413804756078
- Páez, D., Rimé, B., & Basabe, N. (2005). Un modelo socio-cultural de los rituales: Efectos de los traumas colectivos y procesos psico-sociales de afrontamiento con referencia a las manifestaciones del 11-M [A social-cultural model of rituals: Effects of collective traumas and psychosocial processes of coping concerning March 11 demonstrations]. *Revista de Psicología Social: International Journal of Social Psychology, 20*, 369-385. doi:10.1174/021347405774277703
- Páez, D., Rimé, B., Basabe, N., Włodarczyk, A., & Zumeta, L. (2015). Psychosocial effects of perceived emotional synchrony in collective gatherings. *Journal of Personality and Social Psychology, 108*, 711-729. doi:10.1037/pspi0000014
- Pearlman, W. (2013). Emotions and the micro foundations of the Arab uprisings. *Perspectives on Politics, 11*, 387-409. doi:10.1017/S1537592713001072
- Perugorria, I., & Tejerina, B. (2013). Politics of the encounter: Cognition, emotions, and networks in the Spanish 15M. *Current Sociology, 61*, 424-442. doi:10.1177/0011392113479743
- Postmes, T., Haslam, S. A., & Swaab, R. I. (2005). Social influence in small groups: An interactive model of social identity formation. *European Review of Social Psychology, 16*, 1-42. doi:10.1080/10463280440000062
- Postmes, T., Spears, R., Lee, A. T., & Novak, R. J. (2005). Individuality and social influence in groups: Inductive and deductive routes to group identity. *Journal of Personality and Social Psychology, 89*, 747-763. doi:10.1037/0022-3514.89.5.747
- Rimé, B., Páez, D., Basabe, N., & Martínez, F. (2010). Social sharing of emotion, post-traumatic growth, and emotional climate: Follow-up of Spanish citizens' response to the collective trauma of March 11th terrorist attacks in Madrid. *European Journal of Social Psychology, 40*, 1029-1045. doi:10.1002/ejsp.700
- Sabucedo, J. M., Durán, M., Fernandez, C., Romay, J., & Dorna, A. (2007). Mouvements sociaux: Discourse et actions [Social movements: Discourse and action]. In A. Dorna & J. M. Sabucedo (Eds.), *Crises et violences politiques* [Crisis and political violence] (pp. 41-70). Paris, France: Editions In Press.
- Sabucedo, J. M., & Vilas, X. (2014). Anger and positive emotions in political protest. *Universitas Psychologica, 13*, 829-837. doi:10.11144/Javeriana.UPSY13-3.a pep
- Schermelleh-Engel, K., Moosbrugger, H., Müller, H., & Engel, K. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research - Online, 8*(2), 23-74. citeulike-article-id:7222182
- Scioli, A., Ricci, M., Nyugen, T., & Scioli, E. R. (2011). Hope: Its nature and measurement. *Psychology of Religion and Spirituality, 3*, 78-97. doi:10.1037/a0020903

- Slovic, P., Finucane, M., Peters, E., & MacGregor, D. (2002). The affect heuristic. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 397-420). New York, NY, USA: Cambridge University Press.
- Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 297-315). San Diego, CA, USA: Academic Press.
- Smith, E. R., & Mackie, D. M. (2008). Intergroup emotions. In M. Lewis, J. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (pp. 428-439). New York, NY, USA: Guilford.
- Smith, N., & Leiserowitz, A. (2014). The role of emotion in global warming policy support and opposition. *Risk Analysis*, *34*, 937-948. doi:10.1111/risa.12140
- Snyder, C. R. (1994). *The psychology of hope: You can get there from here*. New York, NY, USA: The Free Press.
- Snyder, C. R., Rand, K. L., & Sigmon, D. R. (2005). Hope theory: A member of the positive psychology family. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 257-267). New York, NY, USA: Oxford University Press.
- Stürmer, S., & Simon, B. (2004). The role of collective identification in social movement participations: A panel study in the context of the German gay movement. *Personality and Social Psychology Bulletin*, *30*, 263-277. doi:10.1177/0146167203256690
- Stürmer, S., & Simon, B. (2009). Pathways to collective protest: Calculation, identification, or emotion? A critical analysis of the role of group-based anger in social movement participation. *The Journal of Social Issues*, *65*, 681-705. doi:10.1111/j.1540-4560.2009.01620.x
- Swaab, R. I., Postmes, T., van Beest, I., & Spears, R. (2007). Shared cognition as a product of, and precursor to, shared social identity: Studying the role of communication in negotiations. *Personality and Social Psychology Bulletin*, *33*, 187-199. doi:10.1177/0146167206294788
- Tajfel, H. (2010). *Social identity and intergroup relations*. Cambridge, United Kingdom: Cambridge University Press.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of inter-group conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of inter-group relations* (pp. 33-47). Monterey, CA, USA: Brooks/Cole.
- Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology*, *58*, 345-372. doi:10.1146/annurev.psych.56.091103.070145
- Tausch, N., & Becker, J. C. (2013). Emotional reactions to success and failure of collective action as predictors of future action intentions: A longitudinal investigation in the context of student protests in Germany. *British Journal of Social Psychology*, *52*, 525-542. doi:10.1111/j.2044-8309.2012.02109.x
- Thomas, E. F., Mavor, K. I., & McGarty, C. (2012). Social identities facilitate and encapsulate action-relevant constructs: A test of the social identity model of collective action. *Group Processes & Intergroup Relations*, *15*, 75-88. doi:10.1177/1368430211413619
- Thomas, E. F., McGarty, C., & Mavor, K. I. (2009a). Aligning identities, emotions, and beliefs to create commitment to sustainable social and political action. *Personality and Social Psychology Bulletin*, *13*, 194-218. doi:10.1177/1088868309341563
- Thomas, E. F., McGarty, C., & Mavor, K. I. (2009b). Transforming "Apathy Into Movement": The role of prosocial emotions in motivating action for social change. *Personality and Social Psychology Bulletin*, *13*, 310-333. doi:10.1177/1088868309343290
- Touraine, A. (1978). *La voix et le regard* [The voice and the look]. Paris, France: Ed du Seuil.

- Traïni, C. (2009). *Émotions... Mobilisation!* [Emotions... Mobilization!]. Paris, France: Sciences Po.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, United Kingdom: Blackwell.
- Ullman, J. (2001). Structural equation modeling. In B. G. Tabachnicki & L. S. Fidell (Eds.), *Using multivariate statistics* (4th ed., 653-771). Needham Heights, MA, USA: Allyn & Bacon.
- Valdesolo, P., Ouyang, J., & DeSteno, D. A. (2010). The rhythm of joint action: Synchrony promotes cooperative ability. *Journal of Experimental Social Psychology, 46*, 693-695. doi:10.1016/j.jesp.2010.03.004
- van Stekelenburg, J., & Klandermans, B. (2007). Individuals in movements: A social psychology of contention. In C. M. Roggeband & B. Klandermans (Eds.), *The handbook of social movements across disciplines* (pp. 157-204). New York, NY, USA: Springer.
- van Stekelenburg, J., Klandermans, B., & van Dijk, W. W. (2011). Combining motivations and emotion: The motivational dynamics of protest participation. *Revista de Psicología Social: International Journal of Social Psychology, 26*, 91-104. doi:10.1174/021347411794078426
- van Zomeren, M., Leach, C. W., & Spears, R. (2010). Does group efficacy increase group identification? Resolving their paradoxical relationship. *Journal of Experimental Social Psychology, 46*, 1055-1060. doi:10.1016/j.jesp.2010.05.006
- van Zomeren, M., Leach, C. W., & Spears, R. (2012). Protesters as "Passionate Economists": A dynamic dual pathway model of approach coping with collective disadvantage. *Personality and Social Psychology Review, 16*, 180-199. doi:10.1177/1088868311430835
- van Zomeren, M., Postmes, T., & Spears, R. (2008). Toward an integrative Social Identity Model of Collective Action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin, 134*, 504-535. doi:10.1037/0033-2909.134.4.504
- van Zomeren, M., Spears, R., Fischer, A. H., & Leach, C. W. (2004). Put your money where your mouth is! Explaining collective action tendencies through group-based anger and group efficacy. *Journal of Personality and Social Psychology, 87*(5), 649-664. doi:10.1037/0022-3514.87.5.649
- Vilas, X., & Sabucedo, J.-M. (2012). Moral obligation: A forgotten dimension in the analysis of collective action. *Revista de Psicología Social: International Journal of Social Psychology, 27*, 369-375. doi:10.1174/021347412802845577
- Williamson, I., Sandage, S. J., & Lee, R. M. (2007). How social connectedness affects guilt and shame: Mediation by hope and differentiation of self. *Personality and Individual Differences, 43*, 2159-2170. doi:10.1016/j.paid.2007.06.026
- Wiltermuth, S. S., & Heat, C. (2009). Synchrony and cooperation. *Psychological Science, 20*, 1-5. doi:10.1111/j.1467-9280.2008.02253.x