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TRANSFORMATION

Why the psychology of collective action requires qualitative transformation as well as

quantitative change.

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Abstract

The argument of this paper is that social psychological models of collective action do not (and cannot) adequately explain social change and collective action through models based on shared variance between variables. Over and above the questions of *why* and *how* collective action and social change occur, such models do not adequately address the question of *when* they occur: At what point on a measure of perceived illegitimacy – or any other predictor – does a person decide that enough is enough, and at what point do shared grievances transform into mass protest? Instead, it is argued that the transition from inaction to action at the level of both the individual and the group is better conceptualised as a qualitative transformation. A key agenda for the social psychology of collective action should therefore be to conceptualise the link between quantitative variation in predictors of action, and the actual emergence of action.

Why the psychology of collective action requires qualitative transformation as well as quantitative change.

"Relatively few phenomena are that orderly or well behaved; on the contrary, the world is full of sudden transformations and unpredictable divergences" (Zeeman, 1976, p.65).

"The 'transformation of quantity to quality' defends a systems-based view of change that translates incremental inputs into alterations of state" (Gould, 1987, p.154).

The aim of this paper is to critically consider whether social psychological models of collective action adequately explain the *emergence* of collective action and protest. Its core argument is that these models, to the extent that they focus on shared variance between variables, underplay the qualitative transformations involved when people decide as individuals and communities that enough is enough. That is, as with any action, there is a *point at which* it emerges, both at the level of the individual and at the collective level of a community or social movement. In other words, the emergence of action involves a transformation of *form*; a transition that involves discontinuous change as one acts by signing a petition, attending a rally or smashing a window, rather than doing nothing or doing something else. The question posed in this article is whether social psychological models sufficiently address this aspect of collective action – that is, can they tell us something about the point at which protest emerges?

While it touches upon a number of different perspectives and academic disciplines, the initial impetus for this article actually came from media coverage of collective action, and particularly the way in which journalists so frequently employ metaphors of heat and temperature when describing collective action and mass events. This is especially so when these events involve physical confrontation and violence.

Accordingly, tensions between groups 'simmer' before 'boiling over'; anger 'explodes'; violence 'erupts'; riots are 'sparked'. Correspondingly, tensions 'cool' as the likelihood of confrontation dissipates. The metaphor is also extended into discussions of the underlying structural, economic, cultural, political and historical conditions of conflict, which turn a region or a situation into a 'powder keg' or a 'tinderbox', ready to burn or explode should someone be so careless or cruel as to 'light the fuse'.

Social psychological predictors of collective action

As a social psychologist with a dedicated interest in understanding the causes and consequences of collective action, it is tempting to dismiss these journalistic tropes as the clichéd language of individuals who have little grasp of (or worse, no inclination to grasp) the complexity, meaning, and *explicability* of social action (Bassel, 2012; Philo & Berry, 2004). This is especially so in view of the recent proliferation of research into the social psychological predictors of collective action, which has advanced our understanding of the factors that lead people to engage in protest. Much of this work draws on classic theories in intergroup relations which emphasise the role of perceiving our group as being relatively deprived (relative deprivation theory; Crosby, 1976; Walker & Mann, 1987; Walker & Smith 2002) or as having lower status (social identity theory; Tajfel & Turner, 1979) compared to a relevant outgroup. Importantly, this disadvantage must be appraised in terms of group memberships and social identification, rather than in terms of interpersonal comparison. That is, our relatively deprived position must be fraternal, rather than egoistic (Crosby, 1976).

When group-level social comparison does reveal a deficit, a number of factors help to determine whether we seek to engage in action that will rectify it. For example, partaking in collective action is more likely when we subjectively *identify* with the group in question (Kelly, 1993; Simon et al., 1998). This is especially so when the identity relates to a specific social movement rather than the more abstract social

category (Simon et al., 1998), and when the identity has been 'politicised' (Simon & Klandermans, 2001). Other appraisals of the nature of the status difference are also important, not least of all in terms of whether it is perceived as fair or unjust (see Van Zomeren et al., 2008). Thus, researchers drawing on social identity theory have emphasised the importance of the perceived illegitimacy of an ingroup's low status (e.g., Ellemers, Wilke, & Van Knippenberg, 1993; Bettencourt, Dor, Charlton, & Hume, 2001), while relative deprivation theory emphasises the importance of felt entitlement as a driver of action against one's relative deprivation (Crosby, 1976).

While legitimacy and entitlement reflect a sense that collective action is *proper* or *appropriate*, other factors relate to whether such action is seen as *possible*. Relevant concepts here include the perceived stability of status differences from social identity theory (Tajfel & Turner, 1979; Ellemers et al., 1993), and the perceived feasibility of challenges to inequality from relative deprivation theory (Crosby, 1976; Walker & Smith, 2002). Within models of collective action, a sense of collective (as opposed to individual) efficacy has been found to increase collective action tendencies (see Van Zomeren et al., 2008 for a review), while research on the elaborated social identity model of crowd behaviour (Reicher, 1996) has highlighted the importance of experiences of empowerment in collective behaviour, both as a dynamic outcome of participation in collective action and as a driver of future participation (Drury & Reicher, 1999; 2005).

In addition to drawing on classic theories of intergroup behaviour, social psychological models of collective action have also provided a fresh take on predominant 'rationalist' accounts of motives for collective action participation, based on cost-benefit calculations (see Olson, 1965). Klandermans (1997) differentiates between a *reward* motive for collective action participation, reflecting the expected value and cost of participation for the individual, and a *social* motive for participation.

This social motive is conceptualised in terms of the expected reactions of important others (family; friends) to one's participation – a distinct set of concerns to those based on individual utility.

Finally, the development of intergroup emotion theory (Smith, 1993; see Iyer & Leach, 2008 for a review) has further stimulated the integration of emotion into social psychological theories of collective action (see also Runciman, 1966). Drawing on appraisal theories of emotion (e.g., Lazarus, 1991), various studies have shown how different appraisals of a context give rise to particular emotions. Appraising one's ingroup's disadvantage as illegitimate thus gives rise to anger (Van Zomeren et al., 2004), while appraising an ingroup's past actions as illegitimate can give rise to collective guilt or shame (Iyer, Schmader, & Lickel, 2007). These group-based emotions in turn influence specific action intentions: for example, anger predicts a desire to engage in collective action (Van Zomeren et al., 2004), shame predicts a desire to withdraw from a conflict (Iyer et al., 2007), and contempt predicts an orientation towards more radical or illegal forms of protest (Tausch et al., 2011). Other emotions shape collective action by *inhibiting* tendencies towards protest. These inhibitory emotions include both negative emotions such as fear (Miller, Cronin, Garcia, & Branscombe, 2009), and positive emotions such as admiration (Sweetman, Spears, Livingstone, & Manstead, 2013).

Temperature gauge? Quantifying collective action.

Of particular relevance to the present argument is that most of the developments described above have, with some exceptions (e.g., Drury and Reicher, 1999; 2005), involved methods and data that are amenable to quantitative analyses. This has numerous benefits, not least of all in allowing complex models to be tested, and the contribution of individual factors to be pinpointed. The result is that we have a sense not

only of the range of factors that matter in predicting collective action, but also of their relative predictive value when taking other factors into account.

It is helpful to illustrate this in relation to perceived illegitimacy, one of the most prominent factors in models of collective action. Many studies have found a direct association between illegitimacy perceptions and collective action tendencies (e.g., Ellemers et al., 1993; Livingstone et al., 2009). As noted above, illegitimacy is also the main appraisal which has been found to produce intergroup anger, which in turn predicts collective action tendencies and behaviour (Mackie et al., 2000; Van Zomeren et al., 2004). Other research has examined how the strength of the link between illegitimacy and anger also depends on other concurrent appraisals, such as a perceived threat to one's ingroup's identity (Livingstone et al., 2009).

Quantifying illegitimacy has also allowed its role across a large number of studies to be assessed. Van Zomeren et al.'s (2008) meta-analysis found support for their social identity model of collective action (SIMCA), in which illegitimacy is rooted in social identity, and plays a distinct predictive role to that played by collective efficacy. Moreover, as is clear in the model illustrated in Figure 1, this quantitative synthesis allows specific effect sizes to be estimated for each link in the model, providing a clear indication of the *magnitude* of the association between illegitimacy and its antecedents and consequences. When used to predict similarly-measured outcomes such as collective action tendencies, a continuous measure of illegitimacy (or any construct) enables us to gauge whether it is a statistically significant predictor of the outcome, the magnitude of its effect (e.g., the effect of a unit increase in illegitimacy on collective action tendencies), and the amount of variance in the outcome that is explained by illegitimacy.

Quantitative change and qualitative transformation

On the basis of this brief review, it is tempting to assert that social psychological models have done a very good job of explaining collective action, especially relative to lay characterisations of protest and collective conflict as abrupt, out-of-nowhere eruptions of frustration. From here on, however, I want to suggest that there is another sense in which these models have *not* done such a good job at explaining collective action.

The issue here is that the statistical association between illegitimacy and intentions to protest (for example) begs a number of other questions about the emergence of collective action. Not least of these is that of *how much* illegitimacy is required for a person to go from abstaining to engaging in an act of protest. At what point on a scale of illegitimacy would a person go from doing nothing to doing something? When is a unit increase in perceived illegitimacy *enough* to instigate an act of protest? The same question can be asked in relation to genuinely collective behaviours: At what point in their emerging sense of injustice does a community or nascent social movement go from not acting to acting? The more general point is that for any collective action – and indeed, for any intentional act at all – there is *a point at which* it emerges, when an individual goes from doing nothing to doing something, or shifts from doing one thing to doing something else. Likewise, the development and behaviour of social movements and less structured groups involves not just variance in their collective action intentions and behaviour, but the transition from not acting to acting, and transitions between different types and targets of action.

These points also echo the apparent abruptness with which events such as the recent revolutions in Tunisia, Egypt and Libya, or the riots in England in 2011 developed. These events were clearly precipitated by much longer term structural factors, coupled with the preparedness of activist individuals and networks – however

loosely constituted and otherwise invisible to outsiders – to seize opportunities to act (Reicher & Stott, 2011). The psychological factors discussed above – collective identity; disadvantage; illegitimacy; emerging efficacy; emotions – are also quite clearly central to explaining such events. Nevertheless, to frame an explanation of such events in terms of high levels of illegitimacy, or any other variable or combination of variables, is to dodge other important questions: Why *there*? Why *then*?

The key argument of this paper is therefore that social psychological models of collective action in one sense offer compelling explanations for collective action and protest, but in another sense explain little about the actual *emergence* of action. That is, they say little about when *qualitative*, discontinuous change occurs in the outcome. The very fact of the transition between inaction and action (or vice versa) indicates that such discontinuous change is a fundamental feature of collective action both at the level of the individual and the group, yet the relationship between this change and underlying psychological variables has largely been ignored in favour of analyses that focus on explaining quantitative variance in measures of collective action (a point that echoes the more general limitations of 'arbitrary metrics' – measures whose meaning is unclear in terms of *absolute* levels of a variable – in psychology; Blanton & Jaccard, 2006). In short, at some point on our scales of illegitimacy or any other predictor, something *happens*.

It is probably useful at this point to be clear about what this argument is *not*. For one thing, it is not a simple call for greater statistical sophistication, at least not in and of itself (the potential contribution of complex modelling will be discussed further below; see Smith & Conrey, 2007). This is important because it could be countered that quantitative analyses of collective action are more nuanced and sophisticated than the sketch presented here. One might argue, for example, that the link between perceived illegitimacy and collective action can be more fully articulated through examining

moderation (interaction) effects, non-linear effects, and effects on behavioural outcomes rather than measured intentions to engage in protest. However, far from addressing the issue of how quantitative variation translates into qualitative transformations in outcomes, these practices in and of themselves only recapitulate it in different terms. For example, one might specify that the linear effect of illegitimacy (or whatever) might be different depending on another variable (e.g., Ellemers et al., 1993; Livingstone et al., 2009; Tajfel & Turner, 1979; Turner & Brown, 1978), but this again fails to identify the *point at which* action emerges on any of the simple regression slopes that could be drawn. Likewise, a curvilinear effect simply suggests that the effect of a unit change in a predictor is different at different levels of itself, producing increasingly or decreasingly large quantitative change in the outcome without specification of *where* on the outcome scale (or indeed, the predictor scale) action might be expected to emerge.

Lastly, while behavioural measures, such as whether or not a participant signed a petition (e.g., Sweetman et al., 2013), are something of a gold standard when it comes to gauging outcomes, their relation to predictors is usually indicated by an odds ratio which indicates the *probability* that a individual falls into one category or another (i.e., whether they signed the petition or not). An odds ratio can thus indicate the likelihood that an individual will engage in a behaviour following a unit increase in a predictor (see Tabachnik & Fidel, 2012), but not *how much* of that predictor is necessary to engender a *shift* from one outcome category to another – that is, to go from not signing a petition to signing a petition, or from performing a legal act of protest to performing an illegal act of protest.

If statistical sophistication does not provide an easy way to address the relationship between quantitative change and qualitative transformation, it is because the issue is as much a question of theory as it is a question of method. That is, the roots of the issue lie in conceptual treatments of collective action which do not pay sufficient

attention to the *points of transition* involved in the phenomena that interest us. It should be made clear at this stage that the problem is not inherent to the use of the statistical tests discussed above. In fact, they could all be used to meaningfully help in identifying the point(s) at which transitions to and between action occur. The key issue, as I will discuss in more detail below, is the willingness to conceptualise and to try to identify points of transition in the first place, and to try to relate them to underlying predictors such as perceptions of illegitimacy.

Quantitative change and qualitative transformation beyond social psychology

Whatever the reason for the failure to address the emergence of collective action in terms of a transition or qualitative change in form, a particularly striking thing about that failure is just how *unusual* social psychology is amongst academic disciplines in neglecting the link between quantitative change and qualitative transformation. Turning first to the 'hard' sciences, a simple example is the notion of *phase transitions* between states of matter as a function of temperature. To state the obvious, substances not only get warmer or cooler: at certain points on the temperature scale, unit changes in temperature result in qualitative transformation as the substance boils, melts or freezes.

Taking the freezing process from a micro to a macro level, climate change theory has also posited that qualitative transformation can occur in the climate as a result of quantitative unit changes in an input or inputs. Specifically, some theorists have suggested that climate change cycles occur because the equilibrium between positive (cooling) and negative (warming) feedback effects is altered by changes in the planet's pattern of orbit (e.g., Milankovitch, 1941). The result is that at some point, a unit change in the planet's orbit (however that is quantified) means that ice spread not only increases, but acquires a *self-sustaining momentum* even in the absence of change in the input (i.e., the pattern of orbit) – the ice-albedo feedback effect (Cubasch & Cess, 1990).

The idea that large-scale transformations in phenomena can be understood in terms of disturbed equilibria between competing forces can also be found in other fields such as evolutionary biology. The theory of punctuated equilibria (Eldredge & Gould, 1972; Gould & Eldredge, 1977) posits that evolution is characterised less by smooth, incremental change, and more by long periods of stasis punctuated by short, rapid bursts through which 'branching' – the emergence of new species – occurs. This pattern, according to the theory, reflects the negation of opposing pressures during periods of stasis (equilibrium) and the breaking of that equilibrium during periods of rapid change. At a higher level still, science itself has been characterised by Kuhn (1996) as developing not through steady incremental gains but through periods of stability followed by rapid periods of revolution – so-called 'paradigm shifts'.

Attempts to address sharp, qualitative change in the form of our objects of study are thus quite apparent in the 'hard' or physical sciences. Turning in the opposite direction from the vantage point of social psychology, it is also apparent that social sciences are marked by efforts to address such transformations. The notion of a 'tipping point' is a prime example. Although popularised as a metaphor for understanding the rapid social transmission of ideas and trends (see Gladwell, 2000), tipping points were initially conceptualised as a point at which a (small) input change leads to a change in process with self-sustaining momentum, and transformative outcomes – even in the absence of further changes in input. As a concrete example, tipping points were invoked by scholars such as Grodzins (1958) and Schelling (1971) to understand the dynamics of racial (de)segregation in housing in the USA. The utility of the tipping point analysis was in identifying that so-called 'white flight' did not just increase as a function of the number of black families moving into a predominantly white neighbourhood. Rather, according to Schelling, there was a point at which one additional black family moving into the neighbourhood would trigger a process that ultimately led to complete racial

segregation as white families moved out of the area, *irrespective* of whether more black families moved in.

Turning closer to the topic of this special issue, the idea that there is a point at which transformative outcomes start to emerge has also characterised a number of approaches to the study of collective action. A case in point is the development of threshold models (Granovetter, 1978) which attempt to model the point at which individuals choose to perform a behaviour in the collective interest, as a dynamic function of the number of others performing the behaviour in a particular context. Again, the implication is that there is *a point at which* individuals start to act. Similar points can be made in relation to other sociologically-oriented theories of collective action, such as critical mass theory (Marwell & Oliver, 1993) or the processes of 'frame alignment' emphasised within framing theory (Benford & Snow, 2000).

Even within social psychology itself, the issue of qualitative transformation – such as sudden 'jumps' in the occurrence of behaviours of interest – has been broached. For example, Klaus Scherer (2000) has argued that the link between specific emotions and their underlying appraisals is neither straightforward nor linear. Instead, Scherer argues, an important aspect of emotional phenomena such as the relationship between anger and frustration is instead that "with increasing frustration there may be a point where anger will, in a dramatic fashion, jump to a considerably higher level rather than continue to increase in a linear fashion" (2000, p. 89).

In order to explain (or at least to appropriately describe) this aspect of the phenomenology of emotions such as anger, Scherer suggests that the relationship between appraisals and emotions can be represented by a particular type of non-linear curve characterised by *hysteresis* – a concept that constitutes a key element of catastrophe theory (Thom,1975; Zeeman, 1976), discussed further below. Figure 2 provides an example of such a function in the case of the frustration-anger relationship.

As Scherer suggests, "whereas a linear function would predict steadily rising anger with increasing frustration, the hysteresis function, containing a folded-back, nonaccessible region, suggests that the intensity of anger will change abruptly for specific degrees of frustration" (2000, p.88-89).

Clarifications

It should be made clear at this juncture that in very briefly reviewing the various theories above, there is no claim that all (or any) of them are necessarily *right*. Indeed, many have been subject to sustained critique and remain controversial in their fields. But independently of their specific *explanatory* value, their value in the present context is quite simply that in their different ways, they directly address a fundamental feature of the phenomena under study: the existence of points of transition or qualitative change in form, and their relationship to incremental quantitative variation in inputs.

Another point to make clear here is that in arguing for the need to study points of qualitative transformation in order to adequately explain collective action, it is not the case that this should necessarily supersede or replace the linear, quantitative, shared variance approaches reviewed at the beginning of this article. More generally, it is not a question of competing perspectives or levels of analysis. This should be quite evident from the range of approaches covered above, each of which is underpinned by the quantification of inputs and (statistical) analysis of their relation – linear or otherwise – to the object of study. The point is that in doing so, they also recognise the existence of, and are theoretically concerned with, points of transition in those phenomena and their relationship to quantitative change in the inputs. In relation to collective action, the message is not that analyses based on shared variance are somehow misguided or necessarily of limited value. Rather, it is that such analyses signal a pre-occupation with the question of *why* collective action occurs, and that the challenge they face is to address the question of *when* it happens, as a function of explanatory factors. While it

was argued earlier in this article that interactive, non-linear and/or behavioural effects are not the answer, it should be clear that they are very much *part* of the answer – just not in and of themselves.

The transformation of quantity to quality in collective action: Setting an agenda

Having disparaged the journalistic cliché of heat metaphors at the outset of this paper, there is perhaps now a case for admitting that the implicit equation of the emergence of protest with a phase transition signals (unwittingly, for sure) an important blind spot in the social psychology of collective action. In doing so, it also sets the challenge of addressing that blind spot. So how can the study of collective action address this challenge? I have no intention of trying to offer a confident answer to this question here. Instead, the aim of the remainder of this article is simply to offer some thoughts on how to at least go about asking the right sorts of questions.

Sticking for the moment with the applicability of heat metaphors to collective action, it might be tempting to treat the emergence of action in the individual and in groups as a simple phase transition that occurs at identifiable points on measures of illegitimacy, efficacy, anger etc. In short, can such measures be used as thermometers to indicate the 'boiling point' of an individual or a society? Unfortunately, the shift from inaction to action or from one action to another is unlikely to be tied to specific points on our measurement scales, or at least not straightforwardly. The issue here is that even for something as inanimate as water, the relationship between its boiling point and temperature is variable, contingent on factors such as atmospheric pressure. In the case of a psychological construct such as illegitimacy, its contingency on other variables is profound (Livingstone et al., 2009; Van Zomeren et al., 2008). Added to this is the fact that we are agentic and sense-making beings, and always *interpret* and *react* to self-report measures. The very act of trying to measure an individual's subjective sense of illegitimacy can thus lead to unexpected and highly varied responses, further muddying

the link between any specific point on the scale and specific outcomes (see Blanton &
Jaccard, 2006).

A more fruitful approach may be to draw more general conceptual guidelines
from other approaches that that have addressed the quantity-quality transition. For
example, as noted above, the hysteresis concept employed by Scherer (2000) in relation
to emotions is a key element of catastrophe theory (Thom, 1975; Zeeman, 1976). As the
quote from Zeeman (1976) at the beginning of this article indicates, this mathematical
approach was concerned with mapping precisely the sorts of transitions discussed here.
Mapping these transformations as a function of underlying variation in predictors
involves, in the simplest instance, the specification of a *bifurcation set* or *cusp*, such as
the beginning of the fold-back curves in Figure 2. This represents the threshold(s) at
which transformations occur. According to Zeeman, this provides a way of reconciling
the observations that sometimes behaviour varies smoothly as a function of underlying
predictors, but also sometimes undergoes sudden change. Importantly, more complex
arrays of bifurcation sets can be produced as the number of inputs rises, modelling
multiple points of transition that can occur depending on the specific levels of the
inputs.

Outside of the mathematical complexity of catastrophe theory, the principle that
can be extracted for present purposes is actually quite simple: That no matter how
quantitatively complex or nuanced our model of inputs may be, its utility is only as
great as our concurrent description of the nature of the phenomena we seek to explain –
including acknowledgement of its sudden transformations as well as its smooth
variation. That is, we need to have a grasp of the form of the behaviour surface (the
forms that protest behaviour and collective action may take, including the nature of their
emergence), as well as the underlying variables that shape it (the underlying control
surface, in catastrophe theory terms). As Aubin (2004) puts it, the goal of catastrophe

theory "was to understand natural phenomena by approaching them directly" (p.98), rather than beginning with the underlying inputs and inferring the form of phenomena from them (a one-way street to reductionism in Thom's [1975] view). In short, there is value in starting with a fuller and franker characterisation of collective action and protest – when it happens, what happens, when it doesn't happen, and where it all happens (or doesn't happen) – and working backwards to develop an adequate (descriptive) model of *the phenomena as they exist*, in addition to the hypothetico-deductive process that leads us to start with theoretical principles and work forward.

It is worth noting at this point that several researchers have begun to advocate complex modelling techniques developed in relation to theories of complex/dynamic systems (e.g., Thagard & Nerb, 2002), such as agent-based modelling (e.g., Smith & Conrey, 2007). At a basic level, such techniques allow complex interactions between large numbers of autonomous agents within an environment – and their interactions *with* their environment – to be modelled over time. As these advocates point out, this has major advantages over what Smith and Conrey (2007) term variable-based modelling (the more traditional covariance-based approach described briefly above), including that it allows the incorporation of qualitative effects, such as a threshold point at which an individual agent switches behaviour.

Approaches such as agent-based modelling clearly show the availability of analytic techniques that can help to address the issues raised thus far in this paper, signalling that theories of collective action that do directly address qualitative transformations are not placed beyond the bounds of quantitative analysis. Indeed, agent-based modelling is championed as a tool of theory *development,* in the sense that it allows examination of dynamics and outcomes that emerge over time given a specific set of parameters. That is, it is an inductive enterprise that is shaped by the assumptions and descriptions that are used to define the parameters of a model, for example through

the production of cognitive-affective maps (Thagard, 2010; see Schröder & Thagard, 2013 for an example). There is therefore a significant caveat to the potential value of complex modelling techniques when it comes to accounting for the points of transition identified here: The quality of such models is only as good as the quality of the inputs, in terms of measurement and in terms of conceptualisation and description (see Bonabeau, 2002). Indeed, the development of appropriate inputs and parameters within such models can involve drawing on embedded, 'thick' descriptions of phenomena using techniques such as participant observation and interviews, or detailed descriptive surveys. This again leaves us with important conceptual and descriptive work to do regarding the nature of collective action and protest, and the place of qualitative transformation within them.

As a starting point, it is worth noting that the principle that quantitative variation translates into qualitative transformation is also recognisable in strands of philosophy, and particularly as a principle of Hegel's (1830/2009) dialectical reasoning, later developed by Engels as the second principle of dialectical materialism. The utility of the principle of quantity-into-quality in explaining social change is tied to another of the principles of dialectics, one which resonates with a number of the scientific and social scientific approaches mentioned above. The principle is that any object of study – say, the climate, or the relationship between different individuals or between different groups – is best conceptualised as a system or process that consists of a set of opposing forces. Stability or stasis in that system therefore does not necessarily indicate the *absence* of factors that would precipitate change, such as the perceptions of illegitimacy that might instigate collective action (see Stewart, Leach, & Pratto, 2013). Rather, these factors are neutralised by countervailing forces; for example, emotions such as fear (Miller et al., 2009), or practical barriers to collective organisation or expression (Klandermans, 1997). The reason that the accumulation of quantitative changes can lead

to qualitative transformations – when people act on their perceived illegitimacy – is that at a certain point, the quantitative change breaks the equilibrium between the opposing forces, allowing abrupt change to occur in the system as one force suddenly overwhelms the other, at least until new, countervailing forces emerge in response to the abrupt change. This philosophy of change is applied quite directly in the theory of punctuated equilibria, as noted earlier. In fact, while primarily concerned with questions within evolutionary biology, the quote from Gould (1987) at the beginning of this article offers an agenda for studying change that should resonate with collective action researchers, as part of "a holistic vision that views change as interaction among components of complete systems, and sees the components themselves not as *a priori* entities, but as both products and inputs to the system." (p154).

A practical agenda for the social psychology of collective action

In this final section, I want to take these principles forward into a slightly more practical research agenda. The first point relates to how external forces, such as an event that evokes a sense of illegitimacy and anger, not only affect the intra-psychic world of individuals who form a 'mobilisation potential' (Klandermans, 1997), but also affects how individuals relate to and interact with one another. Accordingly, an increasing amount of research in social psychology is acknowledging that communication between individuals is crucial to understanding the way in which collective action pans out (Livingstone, Spears, Manstead, Bruder, & Shepherd, 2011; Smith & Postmes, 2009; Thomas, McGarty & Mavor, 2009; Van Zomeren et al., 2004, 2012). Importantly, a shared sense of social identity not only *shapes* our orientations to one another through initial definitions of 'us' and 'them', but in turn *changes* as a result of communication as people engage in shared meaning-making.

While the importance of communication in this dynamic is increasingly being addressed, it is also important to acknowledge that one of the barriers to genuinely

shared representations and co-ordinated action is that precipitating events *happen to and are experienced differently by different individuals.* This is true even in dramatic and intense events such as a police baton charge against a group of protestors: not everyone will be hit, and even those who do get hit will vary in whether they have had previous experiences of such events, or whether it is a shockingly new experience. At the same point in time, many others a short distance away will not even be aware that a baton charge has begun (Stott, Adang, Livingstone, & Schreiber, 2007). The result is that a 'given' event can create *asymmetries* in the experiences and understandings of people who are involved. The extent to which particular points of transition into action are reached – the point at which one flees in fear, or collectively resists – will therefore be a function of whether shared representations and identity emerge *in situ* that both explain and provide a basis for acting in that context. As research on crowd behaviour has shown, the emergence of particular forms of action – a qualitative change in the nature of a collective's behaviour – is unlikely in the absence of shared identity and representations; but can emerge dramatically when such shared representations do develop (Drury & Reicher, 1999, 2005). Thus, the emergence of action is tied to *transformations in self-definition*. Consequently, getting a handle on the emergence of action requires conceptualising and studying identity as a *process* that is dynamically related to unfolding events, not just as a discrete, abstracted input or output.

The preceding discussion also makes it clear that the emergence of collective action, both at the level of the individual and the group, is a process that is embedded within wider, ongoing intergroup relations. This being the case, and in light of the review of catastrophe theory above, the second suggestion is to develop a psychology of *key events or points* in a dynamic – what may be termed points of phase transition – as well as of more abstracted perceptions over time. The importance of specific events is clearly acknowledged in many studies of collective action, both as precipitating factors

that instigate appraisals and emotions (e.g., Iyer et al., 2007), or as intervening factors that affect appraisals and emotions across different time points (Tausch et al., 2011). However psychological impactful these events may be, they are nevertheless still treated as something of a black box whose specific *dynamic* and *content* is not an object of study in itself. What is it about the specific event – materially, temporally, and psychologically – that saw people shift from inaction to action, or between different forms of action? Put more simply, what actually *happened*?

The importance of such an enterprise is brought into focus by another principle that has been central to research on crowd behaviour (e.g., Drury et al., 1999): That one group's actions *create specific material contexts* within which another group can (re)act, facilitating or inhibiting actions that may have or have not occurred otherwise (see also Kriesi, 2007). As Reicher and Stott (2011) have argued in relation to the riots in England in 2011, more abstracted psychological predictors such as illegitimacy, threat, anger and so forth are clearly necessary for the transition to action at an individual and a collective level, but understanding *when* and *how* that happens also requires a focus on how specific events, such as the nature of a police intervention in a particular situation, opens up the material possibilities for these worldviews to be enacted.

Conclusion

In simple terms, the aim of this paper has been to signal an important blind spot in social psychological models of collective action, and to provide some impetus towards addressing this shortfall. There were three aspects to this. The first was a recognition that the emergence of collective action (or any action) involves discontinuous change or transition as well as smooth, continuous variation, and that this is not sufficiently acknowledged in analyses that solely focus on shared variance between predictors and collective action outcomes. The second was to draw out the principles that (1) transitions *can* conceivably be mapped on to underlying quantitative

change, but only if those transitions are fully acknowledged and appropriately conceptualised; and (2) that an appropriate conceptualisation of such transformations involves seeing social change as a process or system composed of opposing forces that at any point may negate (producing stability) or overwhelm (producing sharp change) one another (see Smith & Conrey, 2007; Stewart et al., 2013). The third step was to advocate a social psychology of points of transition; that is, the study of *in situ* moments of change within and between individuals, and between interacting groups. Hopefully these straightforward, incremental changes in theory and practice can edge us towards understanding the transformative change that characterises the world around us.

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Figure Captions

Figure 1. Van Zomeren et al.'s (2008) social identity model of collective action

(SIMCA). The path weights are standardized effect sizes estimated from their

meta-analysis.

Figure 2. Scherer's (2000) illustration of hysteresis in the relationship between anger

and frustration. The dotted portion of the curve is 'inaccessible', in that no

actual observations occur on it. The arrows represent points at which there is a

'jump' (sharp increase or decrease) in anger as a function of frustration.
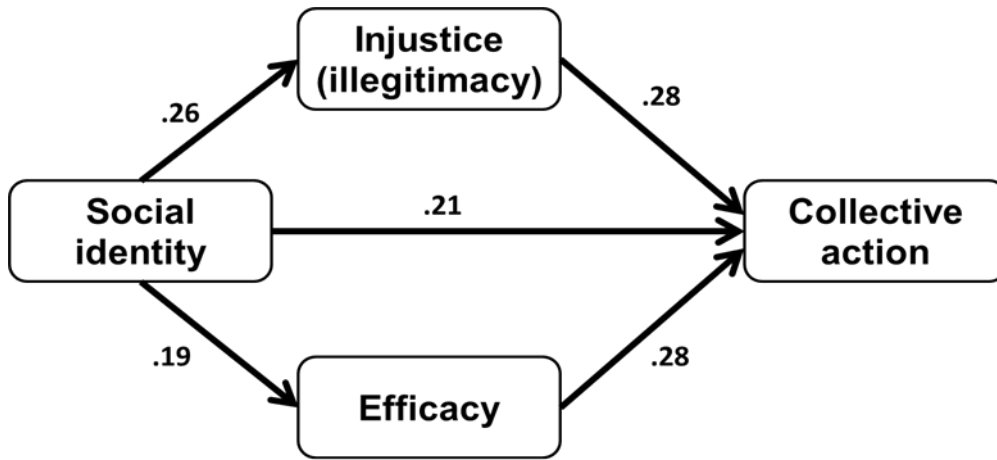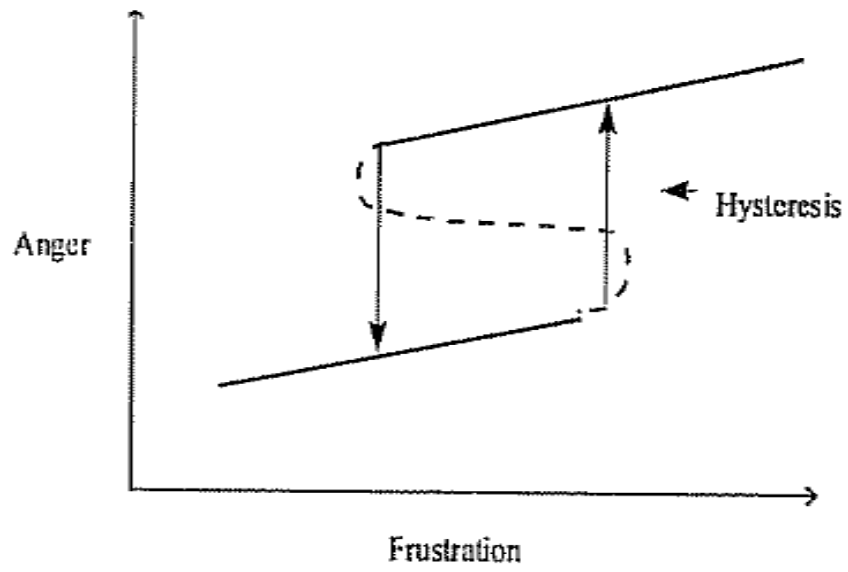
Figure 1

Figure 2

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