

Crowds and collective behaviour

John Drury (University of Sussex)

j.drury@sussex.ac.uk

&

Stephen Reicher (University of St Andrews)

sdr@st-andrews.ac.uk

To appear in M. A. Hogg (Ed.), *Oxford research encyclopedia of psychology*. OUP.

Table of Contents

1. Introduction

2. A history of crowd psychology

2.1 Classical crowd psychology: From Taine to “de-individuation”

2.2 Norms and rationality in theories of crowd behaviour

3. The social identity approach

3.1 The concept of social identity

3.2 The three transformations of crowd psychology

3.2.1 Cognitive transformations

3.2.2 Relational transformations

3.2.2.1 Relational transformations in emergencies and disasters

3.2.2.2 Relational transformations in mass gatherings

3.2.3 Emotional transformations

3.3. Processes of change

3.3.1 Change in events - The Elaborated Social Identity Model of crowds (ESIM)

3.3.2 Change between events

3.3.3 Change beyond events

4. Extensions and applications

4.1 'Public order' policing

4.2 Crowd safety and emergency management

4.3 Computer simulation of pedestrian movement

4.4 Mass gatherings medicine

5. Conclusions

Article summary

The challenge for a psychology of crowds and collective behaviour is to explain how large numbers of people are, spontaneously, able to act together in patterned and socially meaningful ways and, at the same time, how crowd events can bring about social and psychological change.

Classical theories, which treat crowd psychology as pathological, deny any meaning to crowd action. More recent normative and rationalist models begin to explain the coherence of crowd action but are unable to explain how that links to broader social systems of meaning. In both cases, the explanatory impasse derives from an individualistic conception of selfhood which denies any social basis to behavioural control. Such a basis is provided by the social identity

approach. This proposes that crowd formation is underpinned by the development of shared social identity whereby people see themselves and others in terms of membership of a common category. This leads to three psychological transformations: members perceive the world in terms of collective values and belief systems; they coordinate themselves effectively; and hence they are empowered to realize their collective goals. This explains the social form of crowd action. At the same time crowd events are intergroup phenomena. It is through the intergroup dynamics between the crowd and an outgroup (typically the police) - more specifically the way the social position of crowd members can change through the police officers understand and respond to their actions - that change can occur. The social identity framework helps make sense of a range of phenomena beyond conflict crowds, including behaviour in emergencies and disasters and the psychology of mass gatherings. The practical adequacy of the social identity approach is demonstrated by its use in a number of applied fields, including 'public order' policing, crowd and emergency management, mass gatherings health, and pedestrian modelling.

Keywords: crowd psychology, social identity, riot, mass emergency, mass panic, contagion, mass gathering, social influence, collective behaviour

Introduction

What is a crowd? Beginning with the earliest attempts to provide a scientific account of crowd psychology, scholars have distinguished between those 'crowds' that comprise simply individuals co-present in the same space and those *psychological crowds* that seems to share a purpose or a 'mentality'. While psychological crowds are the main focus of crowd psychology theories, any such theory however also needs to say something about the *relation*

between these two, including how a physical crowd can *become* a psychological crowd (or vice versa).

Like the term ‘crowd’, ‘collective behaviour’ has many referents across the social, behavioural and comparative sciences. We use it here to refer to those phenomena that are forms of psychological crowd, including but not exclusively protest crowds, riots, social movement manifestations, mass emergency behaviour, and the behaviour of crowds at sports, music, religious and ceremonial events.

A useful definition, which captures the psychological problem that theory must address, is as follows: a crowd is *a form of group in which people are interacting face-to-face but where there is no formal means for decision-making or direction* (Reicher, 1984, p. 4). This definition therefore excludes the normal operation of armies and police forces (since these large groups have formal chains of command), dispersed groups (such as online communities, since they are not face-to-face), as well as most small groups (since by their small size they allow for collective decision-making). Yet clearly a theory able to explain collective behaviour in psychological crowds will also be able to explain many features of behaviour in armies, online communities, and small groups.

This chapter begins by tracing the history of theories of crowd psychology, which for a number of years were preoccupied with crowd violence. We then outline the social identity approach to crowds, which provides a general framework for the psychology of collective behaviour. We show how the approach has provided novel insights into a range of forms of collective behaviour and crowd events, including mass emergencies, mass gatherings, and social influence between crowd events, and some of the psychological changes that occur beyond the events themselves. Finally, practical implications of the social identity approach are demonstrated by examples from applied fields, including ‘public order’ policing and emergency and crowd safety management.

A history of crowd psychology

Classical crowd psychology from Taine to “de-individuation”

Research has falsified most of the claims of the early theories of crowd psychology (Postmes & Spears, 1998; Reicher, 1987). However, it is important to consider them, for two reasons. First, these early approaches were extremely influential. Second, they echo many ‘common sense’ assumptions about crowds that have persisted in both popular and high culture for many years.

The emergence of scientific crowd psychology in late nineteenth century France was prompted by ‘social problems’ in which the crowd was central (Van Ginneken, 1985). There had been revolutions in 1789, 1830, and 1848. Industrialization meant both ‘mass’ urbanization and strikes. From the perspective of the first crowd psychologists, the most shocking of all these events was the Paris Commune of 1871, in which workers in Paris violently rose up and constituted the city as an independent socialist republic (and were even more violently put down by troops).

Horrified by the Commune, Hippolyte Taine began his monumental history of the decline of civilization in France. What was novel in Taine’s (1876) work was the use of concepts from psychology and medicine to analyse the “bestial” behaviour of the crowd (Stott & Drury, 2017). Subsequent crowd psychologists (most notably Fournial, Tarde and Sighele) developed these ideas, but only one of them achieved popular success: Gustave Le Bon. More than analysis of the supposed rise of mass irrationality, Le Bon (1895) presented his crowd psychology as a practical guide for combatting and harnessing the power of the crowd. He saw in the crowd a reversion to the most primordial state of a “race” or “people” (referred to as the “group mind”, or “racial unconscious” in modern commentaries). The

fundamental characteristic of the psychology of crowds is their stupidity, according to Le Bon; in crowds, even the most intelligent and civilized individuals regress to the stage of “barbarians”. This regression is said to occur through three psychological mechanisms: submergence (loss of personality through anonymity in the crowd), suggestibility (similar to a hypnotic state, and based on submergence), and contagion (uncritical social influence of any passing sentiment or behaviour, which is caused by suggestibility).

In the first part of the twentieth century, the major challenge to Le Bon’s (1895) “group mind” approach was Floyd Allport’s (1924) behaviourist individualism. Allport argued that the individual should be the proper unit of analysis in the study of crowd psychology. The arbitrary violence of people when they were in crowds, Allport argued, reflected a combination of individual predispositions (both innate and learned) and simple stimulation of other co-present individuals, which causes “fundamental drives” (self-protection, hunger, sex) to overcome the civilized values that normally control behaviour.

As well as sharing Le Bon’s assumption that the psychology of crowds is inherently primitive and instinctual, Allport’s approach also shared some essential problems with him. Both relied on fragmentary, selective, secondary examples, rather than systematic studies of crowd events. Le Bon, Allport and the others in the classical tradition described incidents of crowd violence shorn of their historical and intergroup contexts (Reicher, 1987). We know that the crowds Le Bon and Allport were referring to were revolutionary crowds or crowds involved in industrial disputes, and we know that where there was violence most of this was meted out by the forces of the state on the crowd, and that crowd violence – even the most brutal – was often in response to a long sequence of attacks (Barrows, 1981). But all this disappears in the accounts of the classical crowd psychologists, and crowd violence appears instead as a meaningless spasm.

After disappearing from the textbooks for several decades, classical crowd psychology flourished again from the late 1960s in the form of “de-individuation” theories. While “de-individuation” retained key features of Le Bon’s framework – anonymity/submergence, loss of self, loss of behavioural control, reduction in critical judgement, and antisocial behaviour – the notion of a group mind was dropped (e.g., Zimbardo, 1970). The use of the laboratory experiment in “de-individuation” studies allowed for the systematic testing -- and ultimately clear debunking -- of some of the distinctive claims of classical crowd psychology. A comprehensive meta-analysis found little evidence that anti-normative behaviour was a generic effect of anonymity - rather the content of behaviour depended more on which identity and group norms were salient; and there was little evidence for loss of self as an underlying mechanism (Postmes & Spears, 1998). In conceptual replications of well-known “de-individuation” experiments, Reicher, Spears, and Postmes (1995) demonstrated that “immersion” in a group leads not to abandonment of norms but more *conformity* to those norms, particularly where the means of immersion itself (such as most of the manipulations used in “de-individuation” experiments) reduce cues for personal identity and instead make salient the group context.

A basic limitation of all classical crowd psychology, from Taine to “de-individuation”, is that it does not have the concepts adequately to explain the fact that the vast majority of psychological crowds are not violent. Likewise, these approaches cannot explain patterns of behaviour in those crowds that *are* violent. A prediction easily derived from the classical tradition is that the violence of the crowd would be indiscriminate. Some of the best evidence against this claim came from historians. Thus E. P. Thompson’s (1971) study of the “moral economy” of the crowd in the eighteenth-century food riot showed that for all the hunger and anger, targets of the crowd were highly selective and constrained by shared notions of legitimacy.

While classical crowd psychology initially focused on crowd violence, it was also applied to another social problem -- that of collective behaviour in emergencies and disasters. The concept of 'mass panic' suggested that in such events the crowd is again a conduit of mindlessness and hence loss of behavioural control. In this view, the threat of danger causes an abandonment of existing bonds (Freud, 1921/ 1985) leading to both individual selfishness and self-defeating irrational behaviour, causing trampling, blocked doors and so on. In addition, such crowds are said to be liable to contagion, meaning that 'panic' reactions spread easily (e.g., Ross, 1908).

As a claim about default collective behaviour in an emergency, the concept of mass panic first came under attack from disaster researchers in the 1950s (see Fritz, 1996, and Quarantelli, 2001), for three main reasons. First, the criteria for reasonable behaviour is often unclear in emergencies since there is usually limited information available to those affected (Sime, 1990). Second, numerous case studies (Sheppard et al. 2006) and reviews of the literature (Quarantelli, 2001) concluded that panic is "rare". Third, while some emergencies are indeed characterised by individualistic behaviour (Chertkoff & Kushigian, 1999), most damning for the predictions of "panic" is the consistent evidence that social support and cooperation are remarkably common amongst those affected (Drury, 2018).

Overall, then, classical explanations, which rely on concepts such as "loss of self" and "fundamental drives", cannot explain meaningful crowd behaviour. They cannot easily explain cooperation or culturally defined limits to behaviour. Put differently, they cannot explain the *social form* of crowd behaviour -- why, for example, the food rioters targeted millers and merchants and the crowd in the French Revolution targeted the aristocrats. Similarly, concepts like "contagion" cannot explain limits to social influence - such as why the influence of the crowd demagogue does not extend to the riot police present in the same

crowd (Milgram & Toch, 1969). To explain all these features, different kinds of concepts were needed.

Norms and rationality in theories of crowd behaviour

R. H. Turner and Killian's (1957) emergent norm theory (ENT) was an important attempt to break from the limitations of classical crowd psychology. In bringing the concept of *social norms* into the study of crowds, their work suggested that crowd behaviour was structured by shared understandings of appropriate conduct, specifying limits to behaviour. Thus, there was no "spiral of contagion" (R. H. Turner, 1964). Rather, borrowing from the work of Sherif (1936), they suggested that social influence was to an important degree a shared sense-making process, that developed through interpersonal interaction in the form of milling, rumour, and 'keynoting' (defined as crystalizing the sentiment of the crowd).

The use of the concept of social norm served to suggest that normal social life and crowd behaviour operated by the same processes. It is perhaps both a measure of the theory's success that it has been applied to a wide variety of crowd events - and to disasters more than riots in recent decades (Lemonik, 2013). However, its distinctive claims were watered down as it attempted to accommodate criticisms (McPhail, 1991), such as evidence that the behaviours observed in many disasters are often based on existing social norms rather than "emergent" ones (Johnson, 1988). In addition, the idea of a long process of milling to develop a norm for the situation has been shown empirically to be unnecessary (Reicher, 1984).

A different criticism of emergent norm theory came from some social movement sociologists, who argued that the assumptions of "breakdown" implicit in Turner and Killian's notions of the "extraordinary situation" and initial "normlessness" kept alive the

spirit of Le Bonian irrationalism. Thus Berk's (1974) "gaming" approach agreed with emergent norm theory that collective behaviour was shaped by meanings which people shared in interpersonal interaction. It added that in crowd events individuals always act on the basis of cost-benefit calculations which take into account their existing "tastes" and individual interests. This would appear to account for patterns of targets in urban riots, such as white-owned and high-end stores (Berk & Aldrich, 1972).

While rationalist approaches like game theory rightly criticize emergent norm theory for failing to expunge traces of classical crowd psychology, they have their own limitations. Classical crowd psychology presumes the individual self as the only self and as the sole basis for rational action, but the gaming approach makes the same assumption when it refers to "interests" and "tastes". A key point here, then, is that different models of the crowd turn on different models of the self, and both gaming and emergent norm theory fail to properly theorise the self or identity. What was still needed was a theory of the "social individual", to explain why some behaviours (not others) become normative, and how interests can be collective -- or, put differently, a theory of the psychological mechanism through which the social can shape crowd action. That theory is described in the next section.

The social identity approach to crowd psychology

The concept of social identity

The argument thus far can be simply summarised. The limitations of the approaches we have considered above turn on their individualistic conception of the self. The crowd setting is either seen as erasing the self (in which case behaviour becomes mindless and uncontrolled), as accentuating the self (in which case behaviour amplifies the idiosyncrasies of crowd members), or else as leaving the self untouched (in which case there is no distinctive crowd psychology). In all three cases, there is an inability to explain one of the core features of crowd action – what we call its *spontaneous sociality*. That is, as historical studies in

particular have revealed, the behaviour of crowd members has a socially meaningful pattern even in the absence of prior planning or formal leadership. To quote the historian William Reddy who studied riots in Rouen over a 100-year period: “the targets of these crowds thus glitter in the eye of history as signs of labourers’ conception of the nature of society” (1977, p. 84). What is more, as the great chronicler of the French Revolution, Georges Lefebvre suggests, this spontaneous sociality is something that is distinctive to the crowd. He argues: “in the mass, the individual, escaping the pressure of the small social groups which constitute the framework of everyday life, becomes much more sensitive to the ideas and emotions belonging to the larger collectivities of which he is also a part” (1954, p. 277).

The challenge for psychology, then, is to explain this distinctive sensibility of crowds. How is it that we shift, not from mindful to mindless behaviour, but from behaviour based on individual or small group concerns to behaviour based on the perspective of large-scale collectivities such as nation or ‘race’ or class? This is precisely the issue addressed by the work of Henri Tajfel and John Turner on social identity theory (Tajfel & Turner, 1979) and its subsequent development in Turner’s self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) – which, jointly, are termed the social identity approach (see Reicher, Spears, & Haslam, 2010, for an overview).

The starting point for the social identity approach lies in a radical shift in the way the self is conceptualised – from an entity to a system. That is, it is certainly true that there are times when we define our self in terms of what makes me, as an individual, distinct from other individuals. This is our personal identity. But equally, there will be times where we define our self in terms of our group memberships (‘I am British’, ‘I am a Catholic’, ‘I am a Conservative’) and what makes our group distinct from other groups. These are our social identities – and we generally have multiple social identities associated with the different groups to which we belong. While these social identities are deeply meaningful to us

personally (if not more so – after all, people may be prepared to die for their country in a way that would be unthinkable for their individual interests), the meanings associated with them cannot be reduced to the person but rather are defined historically and collectively. In this way, when social identity is salient, individuals come to act in terms of social values, norms and beliefs.

More formally, then, the self-system is made up of relations between self and other defined at different levels of abstraction, the main ones being personal ('I' vs. 'you') and social ('we' vs. 'they'). At different times and in different contexts, different parts of the self-system will be psychologically salient and will shape behaviour. Early on, social identity theory, which focussed on the dynamics of intergroup behaviour, proposed that the shift from interpersonal to intergroup behaviour is underpinned by the shift from personal to social identity (Tajfel, 1978). Subsequently, self-categorisation theory, which sought to develop social identity concepts into a more general model of group process, proposed that social identity is the psychological construct that makes group behaviour possible (Turner, 1982, p. 21).

Equally, then, the starting point for social identity approaches to crowd psychology is the contention that selfhood is neither lost in the psychological crowd, nor is it simply accentuated. Rather, there is a shift in salience from personal identity to the relevant social identity. Indeed, one of the most constant findings of recent research is that, when referring to themselves, members of psychological crowds – whether demonstrators, protestors, sports fans, pilgrims or festival-goers – invoke their category membership rather than their individuality (e.g., Hopkins et al., 2019; Reicher, 1984; Neville & Reicher, 2011). Correspondingly, rather than understanding crowd psychology in terms of a simple binary of loss or else continuity of its psychological underpinnings, we need to address the various psychological transformations that occur when people shift from personal to social identity.

The three transformations of crowd psychology

The first study of crowds from a social identity perspective was an analysis of the St Pauls Riot of April 1980 (Reicher, 1984). Similar to the historical studies described in the section on classical crowd psychology, this revealed a social pattern to the targets of crowd violence: the police, financial institutions and shops owned by outsiders were attacked, others were left alone or else, if targeted by individuals, were actively defended by crowd members. This pattern reflected the collective understandings of the St Pauls community who (even if not all Black) saw themselves in racialised terms as a group subjected to state repression and economic exploitation by external bodies.

Drawing on the influence processes posited by self-categorisation theory ('referent informational influence' - see Turner et al., 1987), it was argued that once people defined themselves in terms of their St Pauls category membership, they sought to act in terms of the norms, values and beliefs associated with that category. Unlike everyday groups, however, the situation was unprecedented and there was no formal organization to guide the group. Therefore, there were no pre-existing guides as to exactly how to act. Hence, participants had to elaborate the implications of their broader category membership for how they should behave in the proximal situation, inferring this from the behaviours of other typical crowd members. Where someone threw a stone at the police this was seen to enact an anti-police norm and led to a hail of stones. However, when someone threw a stone at a bus, this was seen to be at odds with group norms and did not generalise – or even invoked active disapproval. In this way, the process of identity elaboration allowed for a changing spectrum of action, but always within clear collectively defined limits – and this then explained the socially intelligible pattern of crowd action.

In this analysis, then, the emphasis is on the cognitive shifts that flow from a shift to social identification in the crowd. Instead of being controlled by individual understandings,

the behaviour of crowd members is controlled by social category-based understandings: we see the world, and what matters in the world, through a collective lens.

Over time, however, analysis has both broadened our understanding of how cognition changes in the crowd and also pointed to additional shifts in social relations between people in crowd settings and in emotional experiences of crowd members. Together, these cognitive, relational and emotional changes constitute the three transformations of crowd psychology.

Cognitive transformations

By now, a large number of studies on a wide range of different types of crowd event have shown that the way we think about the world and the way we think about ourselves shifts in the crowd as social identities become salient. We define self and other not in terms of their individual characteristics but in terms of the groups they belong to and, accordingly, we stereotype both ingroup and outgroup members in terms of the characteristics we associate with these respective groups (Reicher & Stott, 2011; Stott, Hutchison & Drury, 2001; Stott & Reicher, 1998). Crowd members behave, not in terms of individual level understandings but in terms of group level understandings, thus placing normative limits on crowd action (Reicher, 1987; Stott, Drury & Reicher, 2017) – and, correspondingly, members are only influenced by messages that are consonant with group norms (Reicher, 1996). The interests we pursue in the crowd are not our individual interests but rather those of the group as a whole; hence an injury to a fellow group member is an insult to our (collective) self; and the success of the group is our own success, even if we individually suffer in achieving it (Stott & Drury, 2000).

However, as a number of recent studies have emphasised, social identity is not only the basis of social perception. Rather it provides a framework through which we make sense of, and evaluate all experience, including basic somatic and sensory experiences (Hackel, Coppin, Wohl, & van Bavel, 2018; Reicher & Hopkins, 2016). Similarly, in crowd settings,

even our evaluations of basic physical conditions are transformed. Thus, in a series of studies of the Magh Mela, a huge annual Hindu festival in North India, Hopkins and colleagues have shown how physical experiences that would normally be experienced as unpleasant (such as extreme cold and loud noise) are evaluated more positively to the extent that they are seen as affirming pilgrim identity (Pandey, Stevenson, Shankar, Hopkins & Reicher, 2014; Shankar, Stevenson, Pandey, Tewari, Hopkins & Reicher, 2013).

Relational transformations

The second transformation that social identity processes bring about is a shift in social relations between crowd members towards greater intimacy. This is not simply a matter of social identification ('I see myself as a member of this social category') but of *shared* social identification ('we see each other as members of this social category') whereby people come to consider that members of the crowd think of themselves as constituting a common 'we' (Hopkins et al., 2019; Neville & Reicher, 2011). Or, to put it slightly differently, shared social identity involves crowd members ceasing to think of their fellows as 'other' but rather as part of a common extended self. In this situation, what happens to other members happens to one's (social) self. Their fate is my fate. Moreover, there is also an assumption that others will likewise respond to my fate as if it were their fate.

In the general group literature, there is a growing body of work showing the consequence of such a sense of 'we-ness' on social relations. It leads to a sense of trust and respect between people (Tyler & Blader, 2001), to greater mutual support and helping (Levine, Evans, Prosser & Reicher, 2005), and to reduction of disgust at sensual contact with them (Reicher, Templeton, Neville, Ferrari & Drury, 2016). In crowds, in contrast to the assumption that density is always aversive and that spatial needs always personal (Sommer, 1969), a sense of we-ness leads to greater tolerance for physical proximity to others (Novelli, Drury & Reicher, 2010) and enjoyment of being in the most dense locations (Novelli, Drury,

Reicher, & Stott, 2013). The culmination of all this is that shared social identity enables group members better to coordinate, cooperate and co-act with each other. They become a more coherent and potent unit.

Evidence for such cooperation and coordination was apparent from some of the first social identity analyses of crowd events. For instance, Reicher (1996) shows how strangers in a student protest would intervene to stop others getting arrested by the police even at the risk of being arrested themselves. But only more recently have such phenomena become a focus of crowd research – and in two areas in particular. One is the study of collective behaviour in emergencies and disasters, and the other is the study of mass gatherings.

Relational transformations in emergencies and disasters

As we have seen, a fatal flaw of ‘mass panic’ as an explanation of default behaviour in emergencies and disasters is the consistent evidence of social support and cooperation amongst survivors. Three kinds of explanations have been offered for this evidence. First, *normative* explanations suggest that people continue to conform to the same rules, roles and schemas that shape their behaviour in everyday life (e.g., Donald & Canter, 1992; Johnson, 1988). However, people have many different norms they might conform to, and without further psychological specification, a social norm explanation merely re-describes behaviour.

A second explanation is in terms of *existing relationships*, reflecting the extensive evidence that people orient first to family members and friends in emergencies (Mawson, 2007). However, this explanation is also insufficient given the evidence of widespread solidarity with *strangers*, even in the presence of threat and in the absence of attachment figures (e.g., Bartolucci & Magni, 2017).

A third explanation focuses on the emergent groups that arise from perceptions of common fate (Fritz, 1996) and suggests that shared social identity among survivors is the crucial mediating mechanism between such perceptions of common fate and cooperative

behaviour in emergencies (Drury, Cocking, & Reicher, 2009ab). Sometimes existing group boundaries are dissolved in such events (Fritz, 1996). But at other times there are no salient group memberships immediately prior to the emergency. This was evident in a study of the July 7th 2005 London bombings, in which the survivors were commuters who described a lack of connection with those around them in normal circumstances but a new sense of togetherness immediately following the explosion, leading some of them to take personal risks to help strangers (Drury et al., 2009b).

In emergencies and disasters, people not only give support but also perceive and expect it (Kaniasty, 2019), enabling anticipation of others' actions and hence facilitating coordination. A survey of survivors of an earthquake and tsunami in Chile in 2010 found that common fate predicted social identification with others affected by the disaster which in turn predicted both giving emotional social support and (indirectly, through expected support) participation in coordinated support activities for the whole community (Drury, Brown, González, & Miranda, 2016).

The evidence from emergencies and disasters therefore turns early crowd theory on its head. Rather than the stress of emergencies reducing sociality and increasing danger, in many emergencies there is an emergent shared social identity which is the basis of mutual support and hence collective resilience (Drury, 2018).

Relational transformations in mass gatherings.

Considering mass gatherings, especially religious mass gatherings, we also see the emergence of a sense of 'we-ness' amongst pilgrims. This again leads to multiple forms of cooperation and support amongst crowd members – albeit that the forms of cooperation that are appropriate in a religious festival are very different from those necessary in a disaster. Thus, in a study of the Magh Mela, it was found that people sometimes show active forms of cooperation by commission (such as physically supporting the elderly during rituals of

bathing in the Ganges) but also by omission (avoiding gossip and giving others space to pursue their spiritual activities). Similar intimacies are found in studies of the Hajj (the pilgrimage to Mecca) (Alnabulsi, Drury, & Templeton, 2018). Moreover Alnabulsi and Drury (2014) found that, to the extent that people identified with the rest of the crowd they were more comfortable in dense physical proximity to others which they saw as providing them with support in a potentially dangerously crowded situation.

Emotional transformations

Thus far we have seen how social identity provides crowd members with a common understanding of their social world and a common sense of their interests in this world. We have also seen how shared identity allows crowd members to act together more effectively in the pursuit of these interests. That is, in the crowd people shift from acting individually for different ends to acting together for the same end. This makes them far more able to overcome obstacles that stand in the way of them achieving these ends. Indeed, one of the most striking features of crowd events is the sense of *empowerment* amongst participants as they develop a sense of shared identity and begin to become aligned psychologically and behaviourally. Thus, Drury and Reicher (1999) describe a demonstration in which an initially disparate set of protestors come to see themselves as a single group and thereby feel better able to break through a police cordon and reach their goal of entering a Council meeting and registering their dissent.

Such empowerment, then, increases the ability of crowd members to enact their social identity and to shape the world according to their own collective vision. To build on Lefebvre (1954), cited above, it is not just that we act as a social subject in the crowd, the crowd is one of the few places where we feel and are able to make our own world. Most of the time, we live in a world and according to rules made by others. In crowds, we are better able to make our own rules and others must dance to our tune (Reicher, 2015).

We have variously called this phenomenon of social identity enactment ‘collective self-realisation’ (CSR: Khan, Hopkins, Reicher, Tewari, Srinivasan & Stevenson, 201); Reicher & Haslam, 2006) and ‘collective self-objectification’ (CSO: Drury & Reicher, 2005, 2009). It has important conceptual ramifications. For the root of anti-collectivistic and anti-crowd sentiment is the notion that people lose agency and subjecthood in the mass, becoming more like automata than persons. The evidence suggests the precise opposite. It is perhaps only in the crowd that most people are agentic, that they can act on their own terms and make their own history, that they cease to be objects of others control, and that they achieve full subjecthood.¹

And for this reason, CSO/CSR is experienced as intensely positive. Many researchers have noted positive sentiment as a key characteristic of crowds (e.g., Páez, Rimé, Basabe, Włodarczyk, & Zumeta, 2015; Sullivan, 2018). Durkheim (1912/1995) captured this bubbling excitement in the term ‘effervescence’.

Traditionally – in psychology at least – such strong emotion has been taken as evidence for the loss of rational thought. Studies in very different types of crowds suggest, however, that there are three main reasons why crowds are associated with strong positive emotions. First, the presence of others serves to *validate* the emotions expressed, enhancing their intensity (Neville & Reicher, 2011; Hopkins et al., 2019). Second, because others are understood as an extension of self in such events, they are perceived to provide *support* for one’s needs as a category member (Hopkins et al., 2016). And third for those crowds that act to change features of their world in line with their social identity there is the exhilaration that comes from empowerment, or CSO/CSR. Hopkins et al. (2016) for instance, show intense

¹ Philosophically speaking, the ‘subjecthood’ of the ‘self-realizing’ religious devotee is in fact subsumed within that of God, which is not the case for the action of the group involved in social change, whose collective action negates a relationship of alienation (see Drury, Evripidou, & Van Zomeren, 2015).

positivity amongst pilgrims at the Magh Mela flows in part from the sense of intimacy with their fellows and from the ability to overcome the constraints of everyday life and full devote oneself to the spiritual. Stott and colleagues (Reicher & Stott, 2011; Stott et al., 2017), detail a similar joy amongst urban rioters which flows from a reversal of everyday social relations where they feel controlled by the police to one in which the rioters control events and force the police to be responsive to them.

Processes of change

So far, we have taken social identification along with shared social identity as givens and examined the consequences principally for intra-crowd processes: collective understanding, social relations amongst crowd members, and collective experience. In so doing, we have sought to explain how the shape of crowd action is socially determined. However, it isn't just that crowds bring people together to express pre-defined social identities. As was evident even in the initial social identity study of the St Pauls riot (Reicher, 1984), social identity, the relations between people, and the ways that they act can all be changed in the course of crowd events. The day after the riot, St Pauls residents defined their group as far more confident and worthy of respect, and felt far more able to defy the police. Crowds, then, are characterised not just by social determination but also by psychological change. An adequate psychology of crowds must therefore address processes of change. We address these on three levels: change within events, spread and change between events, and change beyond the crowd itself.

Change in events - The Elaborated Social Identity Model of crowds (ESIM)

In order to complement the study of social determination in crowds with an analysis of psychological change, it is necessary to complement the analysis of intra-group processes with an analysis of intergroup processes. For crowd events do not just involve the crowd, they characteristically involve other groups, notably the police. One cannot understand how

events unfold, then, by limiting the analytic gaze to just one of these parties. One must examine the nature of the interactions between the two. And indeed, ESIM developed from the observation of a particular pattern of interaction which was associated with the emergence of generalised conflict in crowds that were initially opposed to violence.

This pattern, first described in a student demonstration (Reicher, 1996), was subsequently seen in a number of different collective events, from football matches (Stott & Reicher, 1998) to tax protests (Stott & Drury, 2000), to anti-roads campaigns (Drury & Reicher, 2000) to urban riots (Stott et al., 2017). It involved the following stages:

1. A heterogenous crowd gathers, made up of multiple groups, the majority non-confrontational, a minority confrontational
2. The police perceive the crowd as constituting a homogeneous threat and hence respond with actions designed to prevent all crowd members from pursuing their goals (e.g. by setting up cordons; by surrounding and containing the crowd; by charging and dispersing the crowd)
3. A shared sense of identity and of unity emerges amongst the crowd, centred on the perceived illegitimacy of the police outgroup. Such unity produces a sense of empowerment and leads crowd members to challenge the police.
4. The response of the crowd serves to confirm initial police perceptions of crowd danger and leads them to escalate their repressive measures. This leads in turn to an increasingly unified crowd challenge and to an escalating spiral of conflict.

Consequent upon this pattern of interaction, are a number of psychological changes, most comprehensively documented in Drury's series of studies of a campaign against the building of the M11 link road through East London (Drury & Reicher, 2000, 2005; Drury, Reicher & Stott, 2003) During this campaign, the local protesters changed their identity, coming to see themselves as radical and oppositional. They changed their understanding of

the social world and of specific groups such as the police, going from a ‘consensus’ view in which the authorities neutrally manage society to a ‘conflict’ view in which different groups have fundamentally opposed interests and the authorities serve the interests of the powerful. They also changed their views of other groups across time and space – including not only other anti-roads protesters across the country, but also the Ogoni tribe fighting Shell in Nigeria, and striking miners fighting the government in the 1980 – coming to see them as part of a common category of those fighting against injustice, and subject to the same police repression as themselves. They also changed their views concerning the purpose of their campaign, from a narrow defence of their neighbourhood to broad opposition to the government road-building programme and indeed to attacks on the environment. Finally, they changed their criteria for evaluating the success of the campaign, from stopping the link road being built through their neighbourhood to standing up to the police and roadbuilders and exposing their illegitimacy to the wider public.

In order to explain how intergroup dynamics produce such thoroughgoing changes, ESIM interrogates the very nature of social identity. This is conceptualised as a representation of self in social relations (see Elcheroth & Reicher, 2017). Thus, for instance, to define oneself as American is to conceptualise the world as organised in terms of national categories along with the way in which the US relates to other nation states. It follows that any change in one’s social relations to others opens the way to a change in social identity. In interactive contexts, this can happen not only through one’s own actions, but also through the way in which outgroups understand and respond to one’s actions.

Thus, in crowds, where members act on one understanding of their social position (‘we are respectable demonstrators exerting our democratic rights’) but these actions lead to a different understanding by an outgroup such as the police (‘they are a dangerous crowd who constitute a threat to the social order’) and where moreover that outgroup has the ability to

impose their understanding on the crowd (by deploying their resources to contain or disperse the crowd) – if, in other words, the police have the power to reposition crowd members – then the conditions of identity change are produced.

To put the argument more simply, where crowd members see themselves as ‘respectable’ but are treated by the police as oppositional then they will begin to see themselves as oppositional. They will become more sympathetic to those radical voices in the crowd which characterise the police as an opposition. Moreover, to the extent that the actions imposed by the police are seen as illegitimate this legitimizes resistance to them (which may include violent conflict); and to the extent such police actions are seen as indiscriminate they create a sense of common fate and hence unify a previous disparate crowd; in which cases people will feel both more willing and more empowered to express their oppositionalism in action (Drury et al., 2015; Drury & Reicher, 2009).

It is clear from this, that, for crowd members, reconstruing their own identity is bound up with reconstruing the identity of the police. It is also clear that change in identity is bound up with a changing worldview, in this case towards a world rooted in social antagonisms. Thus, others standing in opposition to the police will become part of an extended ingroup. And success in such an antagonistic world starts with confronting the power of the authorities. If identity is bound up with a broader understanding of social relations, this explains why the processes which bring about identity change will also bring about a series of changes in one’s understanding of how one relates to others and how one should act in the world.

There is one final point that needs to be stressed. Although, to date, the emphasis in empirical studies has been about changes towards radicalism and escalation of conflict in crowd events, ESIM is not simply a model of radicalisation and nor is it simply a model of change. On the one hand, then, if crowd members see themselves as in opposition to the

police but are repositioned as ‘respectable’, then one would expect deradicalization of identity. This is precisely what Stott has found in his studies of football crowds, where the police altered their focus towards respecting fans and facilitating their collective goals. In such contexts, fans reconstrue the police as allies, reject confrontation, and indeed collectively self-regulate in cases where individuals act in confrontational ways (Stott, Adang, Livingstone & Schreiber, 2008).

On the other hand, ESIM dynamics require a number of conditions for the production of change. These include (a) an asymmetry of perception in the way crowd members see themselves and the way they are perceived by the police; (b) the use of police power to constrain the crowd; (c) sufficient empowerment in the crowd to challenge police constraint. These conditions are relatively rare. In most cases the police will see crowds as crowd members see themselves and their actions will confirm the ways crowd members understand themselves and their world. Even if they don’t, the police won’t often consider it necessary to act against the crowd (say, when there are no sensitive targets nearby). And even if they do act against the crowd, crowd members won’t often feel able to challenge them (say, where their numbers are too low; Drury & Reicher, 2005). In other words, ESIM may well specify when change occurs, but equally it explains when (and why) it does not.

Change between events

Most research on crowds has been restricted to the study of single events or else, as in the No M11 Link Road campaign we have just been discussing, to multiple events involving the same pool of people. However, often, crowd events come in waves involving entirely different participants. This is particularly true of urban riots, whether in the US in the 1960s (National Advisory Commission on Civil Disorders, 1968), the UK in the 1980s (Waddington, Jones and Critcher, 1989) or, more recently, the UK riots of 2011 (Reicher & Stott, 2011). In each case, an initial riot quickly led to riots elsewhere across the whole

country. Indeed, the intensity of previous riots is among the most important predictors of when and where further riots occur, over and above other important factors such as deprivation (Myers, 2010). How, then do we explain the nature of this spread?

Both descriptively and in explanations of the spread of riots, one concept has dominated: contagion, the notion that psychological states are transmitted automatically between people like a disease, a concept that goes back as far as the works of Espinas on sociality in animals (Barrows, 1981). Writing of the 2011 riots, Slutkin (2011) suggests: “That violence is an epidemic is not a metaphor; it is a scientific fact... Once the event is triggered, it moves from person to person, block to block, town to town. This pattern is not unique to London: it is evident in past riots throughout the US, from Cincinnati to Crown Heights in New York to the Los Angeles riots ignited by the Rodney King beating.”

However, there are two major problems with such an argument. On the one hand, it does not explain why different places, though equally exposed to an earlier riot, respond in different ways. In some places people do riot, in other places they do not, in yet others they turn out to prevent riot or else to clean up the damage that previously occurred. On the other hand, it does not explain the differing nature of the riots in different places. As has been noted, for instance, the initial riot of 2011, in Tottenham, North London, was principally an anti-police event. That was also true of some of the ensuing riots, but others were more centred on looting (commodity riots) and yet others were aimed at symbols of wealth and privilege (class riots) (Ball & Drury, 2012).

Today, many sociologists and criminologists reject the irrationalist associations of the term ‘contagion’, redefining it as rational choice based on individual participants’ judgement and communication (e.g., Myers, 2010). In a similar way to the "contagion" concept, however, rational choice and communication require more social psychological specification

to explain both why people in some locations and not others join in with rioting and why some people are more influential than others.

From a social identity perspective, influence and the process of spread is neither automatic nor indiscriminate. Mere exposure to others rioting is not enough to make others more likely to react themselves. Rather one must look at the categorical relations between those involved in earlier riots and those who observe them. However, that covers both the relationship of observers to the rioters and to the authorities. What is more, the observers can be either local community members in different places or else the authorities. Taking these distinctions into account suggests a number of processes of spread.

Starting with community members as observers, a first process is based on common identification with those rioting elsewhere. The Tottenham riot was very much centred on a shared understanding of racist policing, having developed from a police shooting of a local young Black man (Stott et al., 2017). A common identification as both anti-police and linked to Tottenham was especially apparent in Brixton, another relatively Black area of London. The fact that Brixton residents saw themselves in the Tottenham rioters and that these latter provided a normative frame for their own action was critical to the onset and development of the riot in this locality (Drury et al., 2020).

The second process involves observers who don't necessarily perceive the rioters as part of a common ingroup but who do see the police as a common outgroup and, who, in witnessing the vulnerability of the police, feel empowered to act in ways that would normally be prevented by police action. This was the case in Croydon and Clapham, other districts in South London, where rioters expressed less shared identification with the Tottenham rioters than was the case for Brixton participants, but who felt able to defy the police. However, the police themselves were often not their primary target. Rather, they defied the police in order to loot and attack property. In this way, as the riots came to involve different groups with

different collective grievances, it did not just spread but also change its character (Drury et al., 2020).

Finally, shifting from the community to the police as observers, previous riots can make officers more sensitive to the possibility of further disturbances and more concerned with the consequences (in the aftermath of the Tottenham riot, the police came under sustained political attack from the government for failing to intervene quickly or strongly enough).² Such circumstances will make the police alter their criteria for intervention and make them more likely to intervene earlier and more force even under conditions of limited threat (Cronin & Reicher, 2009). Moreover, following the dynamics of ESIM described above, such intervention may produce a sense of police illegitimacy and collective empowerment amongst crowd members, leading to an escalation of violence which might not otherwise occur. An example of these dynamics comes from Salford, where strong police action against a relatively minor incident drew in more crowd members and led to a significant conflict (Drury et al., forthcoming).

Change beyond events

Until very recently, the study of crowd dynamics has been restricted to what happens in crowds. But a number of studies have begun to ask the question ‘does what happens in the crowd stay in the crowd?’. If not, in what ways and through what processes do crowd events have impacts beyond the crowd? These questions are of considerable significance because they speak to the overall importance of crowds and crowd studies (Reicher, 2017). Are crowd events relatively rare and exceptional phenomena that tell us little about everyday psychology and society, and hence can never be more than a niche interest? Or do they play an important

² ‘Riots: Police defend handling of crisis after criticism’ <https://www.bbc.co.uk/news/uk-14501236>

role in shaping everyday psychology and society, in which case crowd analysis acquires much greater significance?

Returning to the topic of mass pilgrimages, it is known that attendance at these events can change attitudes and identities for some time afterwards (e.g. Clingingsmith, Khwajam, & Kremer, 2009). Recent research has evidenced the social identity basis of such changes. Khan et al.'s (2016) longitudinal study of the Magh Mela found that pilgrims' shared social identity with the crowd predicted increased social identification as a Hindu. Alnabulsi, Drury, Vignoles, and Oogink (2019) found evidence of more positive attitudes among Hajj pilgrims towards non-Muslims as well as other Muslim groups. Less expectedly perhaps, attendance at the Mela has been found to increase both physical and mental well-being (Tewari, Khan, Hopkins, Srinivasan & Reicher, 2012).

When it came to how these changes were brought about, overlapping but distinct processes were involved. Thus, in the case of enhanced identification, the critical precursor was the sense of collective self-objectification/realisation, itself contingent on shared social identity amongst crowd members (Khan et al., 2016). That is, insofar as social identity is understood as a representation of how the world is, or should be, then experiencing the reality of such a world makes the identity more viable and meaningful to people. For changed attitudes to other groups, contact and shared identity with the crowd were the crucial factors (Alnabulsi et al., 2019). In the case of well-being, the critical precursor was 'relationality' – the shift towards intimate and supportive social relations amongst crowd members, though this too was contingent on social identification and shared social identity. More specifically, such relationality provided people with a sense that they would be supported by other group members. And if those group members were present when they returned home, they felt better able to deal with the challenges posed by everyday life, hence impacting their physical and their mental well-being (Khan, Hopkins, Reicher, Tewari, Srinivasan & Stevenson,

2015). In the case of protest crowds, the changes in identity towards a ‘radicalized’ self (Drury & Reicher, 2000), and the behavioural consequences of this (including lifestyle changes in terms of diet, friendship groups, and consumption), have been shown to be sustained similarly by relational factors such as perceived social support in the campaign ingroup (Vestergren, Drury & Chiriac, 2018).

There is, however, one serious limitation to all this work on change beyond events. That is, if the impact of crowd events on everyday life applies only to the actual participants, then this impact will always be severely limited for even the largest events only involve a small proportion of the members of the society as a whole. Critically, then, we need to address whether crowd events impact non-participants as well as participants. Drawing on Anderson’s (1983) work which analyses the nation as an ‘imagined community’, Reicher (2017) proposes a possible mechanism. That is, Anderson argues that we can never assemble the entire nation in one place and observe it directly. Rather we have to imagine ourselves as a nation and also imagine what our nationhood means. So how do we do that? To the extent that a crowd is representative of the broader category, it becomes the imagined community made manifest. Through observing a national crowd, we can see ourselves mirrored and observe who we are and where we stand in the world. This is true not only of nationhood, but also of other broad social categories – our gender, our religion and so on.

There is some evidence to support this view. For instance, Lowery (2016) shows how crowd events following the killing of Black men in Ferguson and elsewhere played an important role in redefining how Black people saw themselves in the US and how they conceptualised their relation to the police and place in US society. There is also more systematic evidence to show how observing protest crowds can affect the extent to which people support their demands and construe the stability of society (Jimenez-Moya, Miranda, Drury, Saavedra & Gonzalez, 2019). Clearly, though, this is just a starting point. Crowds are

clearly a significant factor in shaping and reshaping individuals and societies. But exactly how widespread these changes are remains to be investigated.

Extensions and applications

Theories of crowd psychology have often been applied to practical social problems. In this section, we summarize established impacts of the social identity approach to crowds in two areas where crowd psychology has previously had a malign and dangerous influence – ‘public order’ policing and emergency and crowd safety management. We also indicate the promise of the social identity approach in two further areas – computer simulation of pedestrian movement and mass gatherings medicine.

‘Public order’ policing

Police methods of crowd control, based on assumptions that crowds are mindless and liable to violence, reflect the long-standing anti-crowd discourse going back many years (e.g., McClelland, 1989). In addition, rationales for certain police practices have sometimes been explicitly derived from the work of Le Bon and others in classical crowd psychology (Waddington & King, 2005; see Reicher et al., 2007). These practices include mounted charges and other forms of coercion against the whole crowd. ESIM research has demonstrated that these constitute the perceived illegitimate and indiscriminate police actions that lead to the escalation of conflict in many cases (Stott, 2009).

However, while UK and European police forces had been aware of the ESIM research since the early 2000s, it wasn’t until UK police were faced by a highly damaging crisis of public order policing, when a member of the public was killed, that the assumptions of classical crowd psychology were removed from the official guidance and training materials (Hoggett & Stott, 2012). In its place were recommendations derived from the ESIM that, instead, would minimise the potential for collective conflict. This included the principles of education (i.e. know your crowd’s identity and norms), facilitation (support the crowd’s

legitimate aims), communication (talk to people in the crowd), and differentiation (avoid methods that are indiscriminate) (Reicher et al., 2007). Among the changes that have subsequently been implemented are the introduction of protest liaison officers who use dialogue-police techniques to build rapport with protesters (Stott Scothern & Gorringe, 2013). There have been parallel developments in the context of policing football crowds, where for example the efficiencies of the new form of policing (reducing conflict and arrest) have saved thousands of pounds in police overtime (Stott, West, & Radburn, 2018).

It is fair to say that that the application of principles derived from ESIM to public order policing have been controversial at times. Some police are critical, arguing that the ESIM underestimates the potential for crowd violence and the need for coercion as a principal tool. Others argue that the “dialogue” approach amounts to a more subtle form of coercion (see Stott et al. 2013), and that it excludes those forms of protest (such as disruption and violence) that may be necessary to bring about social change.³ From the 2010s onwards, principles based on ESIM were written into key official public-order guidance manuals and College of Policing training modules. The effects on policing represent perhaps one of the biggest impacts social psychology has had on policy and practice in the last 20 years.

Crowd safety and emergency management

In the field of emergency management, practices based on assumptions of ‘mass panic’ prevailed for a number of years. Yet critics argue that such practices can *create* the very psychological vulnerability they are intended to mitigate. For example, the imperative “don't tell them—they'll only panic” leads response agencies to restrict information, and a perceived

³ While these criticisms of protest liaison police focus on the intended functions of dialogue policing, others focus on their use by police for more traditional goals (e.g., Out of the Woods, 2019)

lack of information increases public anxiety and distress and reduces efficacy (Drury et al., 2019).

The research on emergent social identity in crowds in emergencies (Drury et al. 2009ab) is consistent with some of the principles of the community resilience programmes that developed after 9/11 – in particular the notion that crowds of strangers are capable of forming bonds in emergencies, which allow them to respond in an adaptive way (i.e. evacuate, coordinate, care for each other), independent of the emergency services. The social identity approach has therefore provided the rationale for interventions designed to support and build upon survivors' collective psychological capacities in these events, rather than substitute for them. These interventions include prioritising communication to give survivors the efficacy to deal with the situations they face. In numerous official guidance documents and training programmes on crowd safety management at sports and live events worldwide, assumptions of 'mass panic' have been replaced by references to social identity, group norms, and communication (Drury et al., 2019).

Perhaps the most concrete example of the social identity approach transforming practices in emergency response is the case of mass casualty decontamination in the event of chemical, biological, radiological and nuclear (CBRN) incidents (Carter, Drury, Rubin, Williams, & Amlôt, 2015; see Drury et al., 2019). As the decontamination procedure involves removing clothes, the public can experience it as more threatening than the CBRN incident itself. Previous guidance had either neglected psychology or referred to 'mass panic' and 'disorder'. The result has been poor public compliance with the decontamination procedure, increasing contamination risk both for those affected and for the wider public. Standard training for UK Fire and Rescue Service personnel has now changed to foreground communication techniques that convey legitimacy (i.e., being treated fairly and reasonably in the decontamination process) and which thereby build shared social identity between

responders and members of the public. Such shared social identity reduces anxiety and increases cooperation and compliance with the procedure.

Computer simulation of pedestrian movement

Computer models of pedestrian flow are have become a standard tool in planning for events, buildings, and transport hubs. However, until recently modellers' assumptions about the psychology of crowds has lagged behind what is known in social psychology (Sime, 1985). Simulations often treat crowds as consisting of either an aggregate mass where every person is allocated identical properties and goals, or as individuals with different individual qualities. Other types of simulation acknowledge the fact that group psychological bonds exist between people in crowds but conceptualize the group only as a small group of individuals, without any capacity for identification with the rest of the crowd (see Templeton, Drury, & Philippides, 2015). Research on pedestrian movement demonstrates that as well as the influence of small group formations (Moussaïd, Perozo, Garnier, Helbing, & Theraulaz, 2010), if people are members of psychological crowds they walk more closely to others in the crowd, which slows down the total walking speed for the crowd as a whole (Templeton Drury, & Philippides, 2018).

Templeton et al. (2015) specify some of the psychological properties needed for agents in computer simulations to properly capture some basic features of crowd psychology. These include the ability of an individual to know their own group identity and perceive the group identities of others. While modellers increasingly refer to the social identity literature, few pedestrian models so far have implemented basic social identity principles (see von Sivers et al., 2016, for a notable exception).

Mass gatherings health

The discipline of mass gatherings medicine has, historically, tended to emphasise the negative effects of attendance on health -- principally via increased susceptibility to

infectious diseases (e.g., Memish, Stephens, Steffen, & Ahmed, 2012). The recent research on the crowd psychology of mass gatherings complements this by demonstrating not only that psychological crowd membership can have benefits for health and wellbeing (as described above). As a result of this, following the 3rd International Conference on Mass Gatherings Medicine in 2017, the whole field was renamed Mass Gatherings Health (Yezli et al., 2018). Indeed, a fundamental message of the psychological research is that, even if certain risks are increased, overall, mass gatherings have a positive health impact and should be encouraged as a public health intervention (Hopkins & Reicher, 2016).

However, besides this general message, Hopkins and Reicher (2017) provide more detailed analysis of the ambivalent health effects of the three psychological transformations of crowd psychology. Thus, the cognitive transformation can, depending on the normative content of the relevant social identity, either lead to positive behaviours (say, abstinence from rich foods at the Magh Mela) or negative behaviours (substance abuse at music festivals). Equally, the relational transformation can alternatively lead to unsafe health practices (such as loss of disgust leading to sharing food and drink, hence increasing disease transmission) or positive practices (such as supporting people in need). And, finally, the emotional transformations can alternatively attenuate what might otherwise be stressors (such as loud noise and crowding) or lead people to expose themselves to greater risks (such as going into densely crowded spaces).

In practical terms, this has important implications in terms of health promotion and health communication at mass gatherings. On the one hand, it is important to tailor advice to the particular identities of the groups involved. There is no point urging people to act in ways that are at odds with collective beliefs. Rather messages must be made congruent with group norms. So, for instance, rather than urging people not to share food (which goes against a communal ethos) one might stress the need to show concern for others well-being.

On the other hand, it is important to ensure that advice comes from, or has the blessing of, ingroup sources rather than outgroup experts who might be seen as having different values and priorities to their audience.

Conclusions

This chapter has covered a wide range of collective phenomena, but, for reasons of space, there are some we have not mentioned - including mass psychogenic illness, 'crazes', 'stampedes', and those crowds where shoppers compete physically for bargains (during Black Friday and similar sales events). However, we suggest that the social identity framework described here provides the tools and concepts for addressing these and other crowd behaviours. In short, those crowds where there is competition between individuals are likely to be physical crowds, where there is low or no shared social identity, or where there is a shared norm of competition; and those crowds where there is coordination, synchrony and social influence and other evidence of relationality are likely to be psychological crowds where there is a sense of 'we-ness'.

More generally, what we have sought to do in this chapter is to develop an analysis of the psychological consequences of we-ness and how this provides not only the inclination, but also the practical capability to act as social subjects - and therefore to act in ways that are coherent and socially meaningful. Moreover, if we complement this analysis of intra-group processes in the crowd with an analysis of the inter-group dynamics of crowd events, we are able to explain not only how crowds act to express social identities but also how social identities themselves can be formed and reformed in the crowd. In sum, we are able to explain both social determination and social change.

This helps us answer a final, fundamental, question. Why research the crowd? For many years, crowds were ignored by psychologists - as indexed by its neglect in social

psychology textbooks - or at most seen as a spectacular but peripheral phenomenon. The neglect might seem surprising to the lay person. The crowd is at the centre of social life: national and international events, civic celebration and major incidents, everyday experiences of sports, music, shopping, and travel. But it is also key to periods of fundamental social change. But also, as we have argued throughout this chapter, the crowd is equally relevant to our academic concerns. It is a place where core phenomena can be investigated and understood (Reicher, 2011, 2017) – identity, influence, social relations, power, emotion, social change. While it is sometimes relegated to the margins, we suggest that the crowd should be at the core of social psychology and indeed of the social sciences.

References

- Allport, F. H. (1924). *Social psychology*. Boston, NJ: Houghton Mifflin Co.
- Alnabulsi, H., & Drury, J. (2014). Social identification moderates the effect of crowd density on safety at the Hajj. *Proceedings of the National Academy of Sciences*, *111*(25), 9091-9096.
- Alnabulsi, H., Drury, J., Vignoles, V., & Oogink, S. (2019). Understanding the impact of the Hajj: Explaining experiences of self-change at a religious mass gathering. *European Journal of Social Psychology* DOI: 10.1002/ejsp.2623
- Alnabulsi, H., Drury, J., & Templeton, A. (2018). Predicting collective behaviour at the Hajj: Place, space, and the process of cooperation. *Philosophical Transactions of the Royal Society B*. *373*: 20170240.
- Anderson, B. (1983). *Imagined communities: Reflections on the origin and spread of nationalism*. London: Verso
- Ball, R., & Drury, J. (2012). Representing the riots: The (mis)use of statistics to sustain ideological explanation. *Radical Statistics*, *106*, 4-21.

- Ball, R., Stott, C., Drury, J., Neville, F., Reicher, S., & Choudhury, S. (2019). Who controls the city? A micro-historical case study of the spread of rioting across North London in August 2011. *City*, 23(4-5), 483-504.
- Barrows, S. (1981). *Distorting mirrors: Visions of the crowd in late nineteenth century France*. Yale, CT: Yale University Press.
- Bartolucci A., & Magni, M. (2017). Survivors' Solidarity and Attachment in the Immediate Aftermath of the Typhoon Haiyan (Philippines). *PLOS Currents Disasters*. Edition 1. doi: 10.1371/currents.dis.2fbd11bd4c97d74fd07882a6d50eabf2.
- Berk, R. (1974). A gaming approach to crowd behaviour. *American Sociological Review*, 39, 355-373.
- Berk, R., & Aldrich, H. E. (1972). Patterns of vandalism during civil disorders as an indicator of selection of targets. *American Sociological Review*, 37, 533-547.
- Carter, H., Drury, J., Rubin, G. J., Williams, R., & Amlôt, R. (2015). Applying crowd psychology to develop recommendations for the management of mass decontamination. *Health Security*, 13, 45-53.
- Clingingsmith, D., Khwajam, A. I., & Kremer, K. (2009). Estimating the impact of the Hajj: Religion and tolerance in Islam's global gathering. *The Quarterly Journal of Economics*, 124, 1133-1170.
- Chertkoff, J. M., & Kushigian, R. H. (1999). *Don't panic: The psychology of emergency egress and ingress*. Westport, CT: Praeger.
- Cronin, P., & Reicher, S.D. (2009). Accountability processes and group dynamics: a SIDE perspective on the policing of an anti-capitalist riot. *European Journal of Social Psychology*, 39(2), 237-254.

- Donald, I., & Canter, D. (1992). Intentionality and fatality during the King's Cross underground fire. *European Journal of Social Psychology, 22*, 203-218.
- Drury, J. (2018). The role of social identity processes in mass emergency behaviour: An integrative review. *European Review of Social Psychology, 29*(1), 38-81.
- Drury, J., Brown, R., González, R., & Miranda, D. (2016). Emergent social identity and observing social support predict social support provided by survivors in a disaster: Solidarity in the 2010 Chile earthquake. *European Journal of Social Psychology, 46* (2), 209–223.
- Drury, J., Carter, H., Cocking, C., Ntontis, E., Tekin Guven, S., & Amlôt, R. (2019). Facilitating collective psychosocial resilience in the public in emergencies: Twelve recommendations based on the social identity approach. *Frontiers in Public Health, 7* (141) doi: 10.3389/fpubh.2019.00141
- Drury, J., Cocking, C., & Reicher, S. (2009a). Everyone for themselves? A comparative study of crowd solidarity among emergency survivors. *British Journal of Social Psychology, 48*, 487-506.
- Drury, J., Cocking, C., & Reicher, S. (2009b). The nature of collective resilience: Survivor reactions to the 2005 London bombings. *International Journal of Mass Emergencies and Disasters, 27*, 66-95.
- Drury, J., Evripidou, A., & Van Zomeren, M. (2015). Empowerment: The intersection of identity and power in collective action. In D. Sindic, M. Barreto, & R. Costa-Lopes (Eds.), *Power and identity* (pp. 94-116). London: Psychology Press.
- Drury, J. & Reicher, S. (1999). The intergroup dynamics of collective empowerment: Substantiating the social identity model. *Group Processes and Intergroup Relations, 2*, 381-402.

- Drury, J., & Reicher, S. (2000). Collective action and psychological change: The emergence of new social identities. *British Journal of Social Psychology*, 39, 579-604.
- Drury, J., & Reicher, S. (2005). Explaining enduring empowerment: A comparative study of collective action and psychological outcomes. *European Journal of Social Psychology*, 35, 35-58.
- Drury, J., Reicher, S., & Stott, C. (2003). Transforming the boundaries of collective identity: From the 'local' anti-road campaign to 'global' resistance? *Social Movement Studies*, 2, 191-212.
- Drury, J., & Reicher, S. (2009). Collective psychological empowerment as a model of social change: Researching crowds and power. *Journal of Social Issues*, 65, 707-725.
- Drury, J., Stott, C., Ball, R., Reicher, S., Bell, L., Barr, D., & Neville, F. (forthcoming). The role of police perceptions and practices in the spread of riot events.
- Drury, J., Stott, C., Ball, R., Reicher, S., Neville, F., Bell, L., Biddlestone, M., Lovell, M., Choudhury, S., & Ryan, C. (2020). A social identity model of riot diffusion: From injustice to empowerment in the 2011 London riots.
- Durkheim, É. (1912/1995). *The elementary forms of religious life*. (K. E. Fields, Trans.). New York, NY: Free Press.
- Elcheroth, G. & Reicher, S.D. (2017). *Identity, violence and power*. London: Palgrave.
- Freud, S. (1985). Group psychology and the analysis of the ego (J. Strachey, Trans.). In A. Dickson (Ed.), *Civilization, society and religion* (pp. 91-178). Harmondsworth, UK: Penguin. (Original work published 1921.)
- Fritz, C. E. (1996). Disasters and mental health: Therapeutic principles drawn from disaster studies. University of Delaware, Disaster Research Center. Historical and comparative disaster series #10. (Written 1961).

- Hackel, L. M., Coppin, G., Wohl, M. J., & Van Bavel, J. J. (2018). From groups to grits: Social identity shapes evaluations of food pleasantness. *Journal of Experimental Social Psychology, 74*, 270-280.
- Hoggett, J., & Stott, C. (2012). Post G20: The challenge of change, implementing evidence-based public order policing. *Journal of Investigative Psychology and Offender Profiling, 9*(2), 174-183.
- Hopkins, N., & Reicher, S. (2016). Adding a psychological dimension to mass gatherings medicine. *International Journal of Infectious Diseases, 47*, 112-116.
- Hopkins, N., & Reicher, S. D. (2017). Social identity and health at mass gatherings. *European Journal of Social Psychology, 47*, 867-877.
- Hopkins, N., Reicher, S. D., Khan, S. S., Tewari, S., Srinivasan, N., & Stevenson, C. (2016). Explaining effervescence: Investigating the relationship between shared social identity and positive experience in crowds. *Cognition and Emotion, 30*(1), 20-32.
- Hopkins, N., Reicher, S., Stevenson, C., Pandey, K., Shankar, S., & Tewari, S. (2019). Social relations in crowds: Recognition, validation and solidarity. *European Journal of Social Psychology*.
- Jiménez-Moya, G., Miranda, D., Drury, J., Saavedra, P., & González, R. (2019). When non-activists care: Group efficacy mediates the effect of social identification and perceived instability on the legitimacy of collective action. *Group Processes and Intergroup Relations, 22*(4), 563–577.
- Johnson, N. R. (1988). Fire in a crowded theatre: A descriptive investigation of the emergence of panic. *International Journal of Mass Emergencies and Disasters, 6*, 7-26.
- Kaniasty, K. (2019). Social support, interpersonal, and community dynamics following disasters caused by natural hazards. *Current Opinion in Psychology*.

- Khan, S. S., Hopkins, N., Reicher, S., Tewari, S., Srinivasan, N., & Stevenson, C. (2015). Shared identity predicts enhanced health at a mass gathering. *Group Processes & Intergroup Relations*, 18(4), 504-522.
- Khan, S. S., Hopkins, N., Reicher, S., Tewari, S., Srinivasan, N., & Stevenson, C. (2016). How collective participation impacts social identity: A longitudinal study from India. *Political Psychology*, 37(3), 309-325.
- Le Bon, G. (1965). *The crowd: A study of the popular mind*. Dunwoody, GA: Norman S. Berg. (Originally published 1895)
- Lefebvre, G. (1954) *Etudes sur al Revolution Francaise*. Paris: Presses Universitaires de France.
- Lemonik, A. M. M. (2013). Emergent norm theory. In D. A. Snow, D. della Porta, B. Klandermans, & D. McAdam (Eds.) *The Wiley-Blackwell encyclopedia of social and political movements*. UK: Wiley-Blackwell.
- Levine, M., Prosser, A., Evans, D., & Reicher, S. (2005). Identity and emergency intervention: How social group membership and inclusiveness of group boundaries shape helping behavior. *Personality and Social Psychology Bulletin*, 31(4), 443-453.
- Lowey, W. (2016). *They can't kill us all*. New York. Little, Brown & Co.
- Mawson, A. (2007). *Mass panic and social attachment: The dynamics of human behavior*. Aldershot, UK: Ashgate.
- McClelland, J. S. (1989). *The crowd and the mob: From Plato to Canetti*. Abingdon, UK: Routledge.
- McPhail, C. (1991). *The myth of the madding crowd*. New York: Aldine de Gruyter.

- Memish, Z. A., Stephens, G. M., Steffen, R., & Ahmed, Q. A. (2012). Emergence of medicine for mass gatherings: Lessons from the Hajj. *The Lancet Infectious Diseases*, *12*, 56-65.
- Milgram, S., & Toch, H. (1969). Collective behavior: Crowds and social movements. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (2nd ed., Vol. 4, pp. 507–610). Reading, MA: Addison-Wesley.
- Mitchell, P. (2012). *Contagious metaphor*. London: Bloomsbury.
- Moussaïd, M., Perozo, N., Garnier, S., Helbing, D., & Theraulaz, G. (2010). The walking behaviour of pedestrian social groups and its impact on crowd dynamics. *PloS one*, *5*(4), e10047.
- Myers, D. J. (2010). Violent protest and heterogeneous diffusion processes: The spread of US racial rioting from 1964 to 1971. *Mobilization: An International Quarterly*, *15*(3), 289-321.
- National Advisory Commission on Civil Disorders (1968). *Report of the National Advisory Commission on Civil Disorders*. New York: National Advisory Commission on Civil Disorders.
- Neville, F., & Reicher, S. (2011). The experience of collective participation: Shared identity, relatedness, and emotionality. *Contemporary Social Science*, *6*, 377-396.
- Novelli, D., Drury, J., & Reicher, S. (2010). Come together: Two studies concerning the impact of group relations on ‘personal space’. *British Journal of Social Psychology*, *49*, 223–236.
- 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): e78983.

Out of the Woods (2019). Extinction Rebellion: Not the struggle we need, Pt. 1.

<http://libcom.org/blog/extinction-rebellion-not-struggle-we-need-pt-1-19072019>

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*(5), 711-729.

Pandey, K., Stevenson, C., Shankar, S., Hopkins, N. P., & Reicher, S. D. (2014). Cold comfort at the Magh Mela: Social identity processes and physical hardship. *British Journal of Social Psychology, 53*(4), 675-690.

Postmes, T., & Spears, R. (1998). De-individuation and anti-normative behaviour: A meta-analysis. *Psychological Bulletin, 123*, 238-259.

Quarantelli, E. L. (2001). Panic, sociology of. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social and behavioural sciences* (pp. 11020 - 11023). New York: Pergamon Press.

Reddy, W. M. (1977). The textile trade and the language of the crowd at Rouen 1752–1871. *Past & Present, 74*(1), 62-89.

Reicher, S. (1984). The St Pauls riot: An explanation of the limits of crowd action in terms of a social identity model. *European Journal of Social Psychology, 14*, 1-21.

Reicher, S. (1987). Crowd behaviour as social action. In J. C. Turner, M. A. Hogg, P. J. Oakes, S. D. Reicher & M. S. Wetherell, *Rediscovering the social group: A self-categorization theory* (pp. 171-202). Oxford: Blackwell.

Reicher, S. (1996). 'The Battle of Westminster': Developing the social identity model of crowd behaviour in order to explain the initiation and development of collective conflict. *European Journal of Social Psychology, 26*, 115-34.

- Reicher, S. (2011). Mass action and mundane reality: An argument for putting crowd analysis at the centre of the social sciences. *Contemporary Social Science*, 6(3), 433-449.
- Reicher, S. (2015) 'Tanz in den flamen'. Das handeln der menge under der quell ihrer freude. In A.T. Paul & B. Schwalb (Eds). *Gewaltmassen* (pp. 175-203). Hamburg: Hamburger Edition.
- Reicher, S. (2017). "La beauté est dans la rue": Four reasons (or perhaps five) to study crowds. *Group Processes & Intergroup Relations*, 20(5), 593-605.
- Reicher, S., & Haslam, S. A. (2006). Tyranny revisited. *The Psychologist*, 19(3), 146-150.
- Reicher, S., & Hopkins, N. (2016). Perception, action, and the social dynamics of the variable self. *Psychological Inquiry*, 27(4), 341-347.
- Reicher, S., Spears, R., & Haslam, S. A. (2010). The social identity approach in social psychology. In M. Wetherell & C. T. Mohanty (Eds.), *The Sage handbook of identities* (pp. 45-62). London: Sage.
- Reicher, S., Spears, R., & Postmes, T. (1995). A social identity model of deindividuation phenomena. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology*, 6, 161-98.
- Reicher, S., & Stott, C. (2011). *Mad mobs and Englishmen? Myths and realities of the 2011 riots*. London: Constable & Robinson.
- Reicher, S., Stott, C., Drury, J., Adang, O., Cronin, P., & Livingstone, A. (2007). Knowledge-based public order policing: Principles and practice. *Policing: A Journal of Policy and Practice*, 1, 403-415.
- Reicher, S., Templeton, A., Neville, F., Ferrari, L. & Drury, J. (2016). Core disgust is attenuated by ingroup relations. *Proceedings of the National Academy of Sciences* 113(10), 2631-2635.

- Ross, E. A. (1908). *Social psychology: An outline and source book*. New York: Macmillan.
- Rudé, G. (1964). *The crowd in history: A study of popular disturbances in France and England, 1730-1848*. New York: Wiley.
- Shankar, S., Stevenson, C., Pandey, K., Tewari, S., Hopkins, N. P., & Reicher, S. D. (2013). A calming cacophony: Social identity can shape the experience of loud noise. *Journal of Environmental Psychology*, 36, 87-95.
- Sherif, M. (1936). *The psychology of social norms*. Oxford, UK: Harper Torchbooks
- Sheppard, B., Rubin, G. J., Wardman, J. K., & Wessely, S. (2006). Viewpoint: Terrorism and dispelling the myth of a panic prone public. *Journal of Public Health Policy*, 27, 219-245.
- Sime, J. D. (1995). Crowd psychology and engineering. *Safety science*, 21(1), 1-14.
- Sime, J. D. (1990). The concept of “panic”. In D. Canter (Ed.), *Fires and human behaviour* (2nd ed., pp. 63-81). London: David Fulton.
- Slutkin, G. (2011, August 14). Rioting is a disease spread from person to person – The key is to stop the infection. *Guardian*. Retrieved from <https://www.theguardian.com/uk/2011/aug/14/rioting-disease-spread-from-person-to-person>
- Sommer, R. (1969). *Personal space: The behavioral basis of design*. Englewood Cliffs, NJ: Prentice-Hall.
- Stott, C. J. (2009). *Crowd psychology and public order policing*. Report submitted to the HMIC inquiry into the policing of the London G20 protests.

- Stott, C., Adang, O., Livingstone, A., & Schreiber, M. (2008). Tackling football hooliganism: A quantitative study of public order, policing and crowd psychology. *Psychology, Public Policy, and Law*, *14*, 115–141.
- Stott C., Ball, R., Drury, J., Neville, F., Reicher, S., Boardman, A., & Choudhury, S. (2018). The evolving normative dimensions of ‘riot’: Toward an elaborated social identity explanation. *European Journal of Social Psychology*, *48*(6), 834-849.
- Stott, C., & Drury, J. (2000). Crowds, context and identity: Dynamic categorization processes in the ‘poll tax riot’. *Human Relations*, *53*, 247-273.
- Stott, C., & Drury, J. (2017). Contemporary understanding of riots: Classical crowd psychology, ideology and the social identity approach. *Public Understanding of Science*, *26*(1), 2–14.
- Stott, C., Drury, J., & Reicher, S. (2017). On the role of a social identity analysis in articulating structure and collective action: The 2011 riots in Tottenham and Hackney. *British Journal of Criminology*, *57*(4), 964-981.
- Stott, C., Hutchison, P., & Drury, J. (2001). ‘Hooligans’ abroad? Inter-group dynamics, social identity and participation in collective ‘disorder’ at the 1998 World Cup Finals. *British Journal of Social Psychology*, *40*, 359-384.
- Stott, C., & Reicher, S. (1998). How conflict escalates: The inter-group dynamics of collective football crowd ‘violence’. *Sociology*, *32*, 353-77.
- Stott, C., Scothern, M., & Gorringer, H. (2013). Advances in liaison based public order policing in England: Human rights and negotiating the management of protest? *Policing*, *7*(2), 212-226.

- Stott, C., West, O., & Radburn, M. (2018). Policing football 'risk'? A participant action research case study of a liaison-based approach to 'public order'. *Policing and Society*, 28(1), 1-16.
- Sullivan, G. B. (2018). Collective emotions: a case study of south African pride, euphoria and unity in the context of the 2010 FIFA world cup. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.01252>
- Tajfel, H. E. (Ed.) (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. Cambridge, MA: Academic Press.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict." In W. G. Austin & S. Worchel (Eds.) *The social psychology of intergroup relations* (pp. 33-48). Monterey, CA: Brooks/Cole.
- Taine, H. (1876). *The origins of contemporary France: The Ancien Regime*. (Trans. J. Durand) New York: John F. Trow & Son.
- Templeton, A., Drury, J., & Philippides, A. (2015). From mindless masses to small groups: Conceptualising collective behaviour in crowd modelling. *Review of General Psychology*, 19(3), 215-229.
- Templeton, A., Drury, J., Philippides, A. (2018). Walking together: Behavioural signatures of psychological crowds. *Royal Society Open Science* 5, 180172
- Tewari, S., Khan, S., Hopkins, N., Srinivasan, N., & Reicher, S. (2012). Participation in mass gatherings can benefit well-being: Longitudinal and control data from a North Indian Hindu pilgrimage event. *PloS one*, 7(10), e47291.
- Thompson, E. P. (1971). The moral economy of the English crowd in the eighteenth century. *Past & Present*, 50, 76-136.

- Turner, J. C. (1982). Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.), *Social identity and intergroup relations* (pp. 15-40). Cambridge, MA: Cambridge University Press.
- 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, UK: Basil Blackwell.
- Turner, R. H. (1964). Collective behavior. In R. E. L. Faris (Ed.), *Handbook of modern sociology* (pp. 382-425). Chicago, IL: Rand McNally.
- Turner, R. H., & Killian, L. M. (1957). *Collective behavior*. (Englewood Cliffs, NJ: Prentice-Hall.
- Tyler, T. R., & Blader, S. L. (2001). Identity and cooperative behavior in groups. *Group Processes & Intergroup Relations*, 4(3), 207-226.
- van Ginneken, J. (1985). The 1895 debate on the origins of crowd psychology. *Journal of the History of the Behavioral Sciences*, 21(4), 375-382.
- Vestergren, S., Drury, J., & Chiriac, E. H. (2018). How collective action produces psychological change and how that change endures over time: A case study of an environmental campaign. *British Journal of Social Psychology*, 57(4), 855-877.
- von Sivers, I., Templeton, A., Kunzner, F., Koster, G., Drury, J., Philippides, A., Neckel, T., & Bungartz, H.-J. (2016). Modelling social identification and helping in evacuation simulation. *Safety Science*, 89, 288–300.
- Waddington, D., Jones, K., & Critcher, C. (1989). *Flashpoints: Studies in public disorder*, London: Routledge.

Waddington, D., & King, M. (2005). The disorderly crowd: From classical psychological reductionism to socio-contextual theory—the impact on public order policing strategies. *The Howard Journal of Criminal Justice*, 44(5), 490-503.

Yezli, S., Assiri, A., Nabulsi, H., Awam, A., Blumberg, L., Endericks, T., Stergachis, A., Reicher, S.D., McCloskey, B., Petersen, E. & Alotaibi, B. (2018). From mass gatherings medicine to mass gatherings health: Conclusions from the 3rd International Conference on Mass Gatherings Medicine, Riyadh, Kingdom of Saudi Arabia. *International Journal of Infectious Diseases*, 66, 128-130.

Zimbardo, P. G. (1970). The human choice: Individuation, reason and order versus de-individuation, impulse and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska symposium on motivation 1969* (pp. 237-307). Lincoln, NE: University of Nebraska.

