Chapter 8
Functions of Anger in the Emotion System

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Abstract This chapter considers the functions of anger as an emotion within an often functional emotion system. It is proposed that emotions are general-purpose coping strategies, usually comprising phenomenological, physiological, expressive, behavioral, and emotivational goal components, each of which fulfills specific functions within an emotion's strategy. For example, typical instances of anger involve thoughts about undeserved harm, feeling hot and ready to explode, activity in circuits running through the medial amygdala and hypothalamus, lowered brows and squarish mouth, readiness to attack, and a goal of hurting its target or compelling change in the target's behavior. Together they implement a strategy of interpersonal coercion. Emotions are typically elicited by combinations of appraisals about significant changes in motive-attainment (e.g., goal blockage caused by other persons, when there may be something that can be done about it, eliciting anger) and function to provide alternative ways to attain one's motives (alternative to each other and to action governed by what have traditionally been considered motives, such as hunger and the need for achievement) in particular types of situations. The Emotion System theory offers an account of why people and other organisms have emotions and why they have the particular emotions that they do. Explanations for emotion dysfunctions, such as anger disorders, are also discussed. Finally, the theory is applied to examine anger in the political domain.

I have spent years overcoming the issues that have surrounded my abandonment by [identity withheld]...I'm angry because he will not simply acknowledge that what he did was wrong and take his responsibility for it. I'm angry because of everything I had to go through because of his choices. [He] will not claim responsibility for his choices. He acts like he has no blame in the situation and that it was entirely my fault, even though I was a child. He refuses to acknowledge that him kicking me out with nowhere to go was neglect and abandonment…It is an almost uncontrollable feeling. I feel like I have no control. I feel like breaking things, hurting things, yelling, and screaming. I want desperately to make [him] feel what I felt because I feel that is the only way he will understand what he put me through

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and maybe that would make him take responsibility. I want him to hurt. At the same time, I don't want him in my life. I want him gone.

[What thoughts is anger making you think?]

That he needs to suffer. That I didn't deserve this. That it's unfair. That he needs to be punished.

[What physical sensations is anger making you feel?]

I feel hot, perspiring a little. My body is shaking, my hands trembling.

[What is anger making you feel like doing?]

Hurting something; breaking something; yelling; screaming; calling him to yell and scream.

[What is anger making you want?]

It makes me want some kind of justice, some kind of amends, some kind of closure. It also makes me want to hurt those who hurt me so that they know what it was like.

-Research participant describing something that is causing anger right now more than any other emotion (Roseman, Steele, & Goodvin, 2017)

What Is an Emotion: A Functional Approach

Like a number of other concepts in the social sciences, such as culture (e.g., Jahoda, 2012), leadership (Northouse, 2016), and religion (Hill et al., 2000), and in the natural sciences, such as the limbic system (Kotter & Stephan, 1997), autism (Rutter, 2005), and arousal (Jing, Gilette, & Weiss, 2009), there are varying definitions of emotion. Building on prior theory and research (e.g., Averill, 1980; Kleinginna & Kleinginna, 1981; Lazarus, 1991; Roseman, 2011; Scherer, 2009), emotions are conceptualized here as alternative, general-purpose response syndromes that have evolved as strategies to cope adaptively in reaction to specific perceptions about the fate of motives. The following sections elucidate this conceptualization, with special attention to anger.

Elicitors of Anger and Other Emotions in the Emotion System

To understand the functions of emotions, it is necessary to specify when they typically occur. Many contemporary theories maintain that emotions are usually evoked by appraisals, rather than by events themselves (e.g., Arnold, 1960; Roseman & Smith, 2001), and most appraisal theories hold that particular emotions are elicited by *combinations* of appraisals (e.g., Lazarus, 1991; Roseman, 2001; Scherer, 2009; Smith & Kirby, 2011). The Emotion System theory (Roseman, 2013) proposes that 7 appraisals combine to elicit 17 distinct emotions (16 positive or negative emotions, plus the neutral-valenced emotion of surprise).

These appraisals are:

1. *Unexpectedness: not unexpected/unexpected*—whether the event violates the expectations of the person feeling the emotions (cf. Reisenzein, 2000)

2. *Situational State*: *motive-consistency/inconsistency*—whether the event is wanted vs. unwanted by the person (cf. Frijda, 1986, concern match vs. mismatch; Scherer, 2009, goal conducive vs. obstructive; Smith & Kirby, 2011, goal congruent vs. incongruent)
3. *Motivational State*: *appetitive/aversive*—whether the event is related to a motive that seeks more of something pleasant vs. less of something unpleasant (cf. Carver & Scheier, 2012, goals vs. anti-goals)
4. *Probability*: *uncertain/certain*—whether the occurrence of motive-relevant aspects of the event is possible vs. definite (cf. Scherer, 2009, outcome probability)
5. *Agency*: *unspecified or impersonal/other person/self*—what or who, if anyone, is seen as causing the motive-relevant event (cf. Scherer, 2009, agent, intention; Smith & Kirby, 2011, accountability)
6. *Control Potential*: *low/high*—whether there is nothing one can do vs. something one can do about the motive-relevant aspects of negative events (cf. Scherer, 2009, control, power; Smith & Kirby, 2011, problem-focused coping potential)
7. *Problem Type*: *instrumental/intrinsic*—whether a motive-inconsistent event is unwanted because it has negative effects (e.g., blocks attainment of a goal) vs. unwanted because of some inherent attribute (cf. Janoff-Bulman, 1979, behavioral vs. characterological blame)

Hypothesized relationships between appraisals and emotional responses, and the place of anger in the system, are shown in Fig. 8.1.

The Emotion System theory proposes that anger is elicited by appraising an event as having motive-inconsistent effects (e.g., a goal blockage), caused by another person, when one's control potential is seen as relatively high. Research has found support for motive-inconsistency (e.g., Frijda, Kuipers, & ter Schure, 1989; Roseman, Antoniou, & Jose, 1996; Scherer & Fontaine, 2013), goal blockage (e.g., Ceulemans, Van Mechelen, & Kuppens, 2012), and other-person-agency (e.g., Frijda et al., 1989; Roseman et al., 1996; Tong, 2010) as involved in eliciting anger. Regarding the latter, Averill's (1982) survey of community residents and students found that anger was felt toward other persons in the vast majority of instances; a small number of exceptions involved treating a nonhuman target "as if it were a person" (p. 166; cf. Fernandez & Wasan, 2010). Ellsworth and Tong (2006) studied cases of anger at the self. I suggest that these are instances in which the self is chastised as if it were another person ("Dammit, why did you leave your briefcase in the middle of the floor!") co-occurring with other emotions—guilt, shame, and regret were also elevated in this study, along with appraisals of self-responsibility.

There have been mixed results regarding appraisals of power or control potential contributing to anger elicitation (e.g., Frijda et al., 1989; Kuppens, Van Mechelen, Smits, & De Boeck, 2003; Roseman et al., 1996). This may reflect a dual relationship of control or control potential to anger (Roseman & Fischer, 2017): the angry individual lacked sufficient control to prevent the angering event, but may have enough potential control to do something about it. Consistent with this view, Litvak, Lerner, Tiedens, and Shonk (2010) suggest that anger is unpleasant looking back on

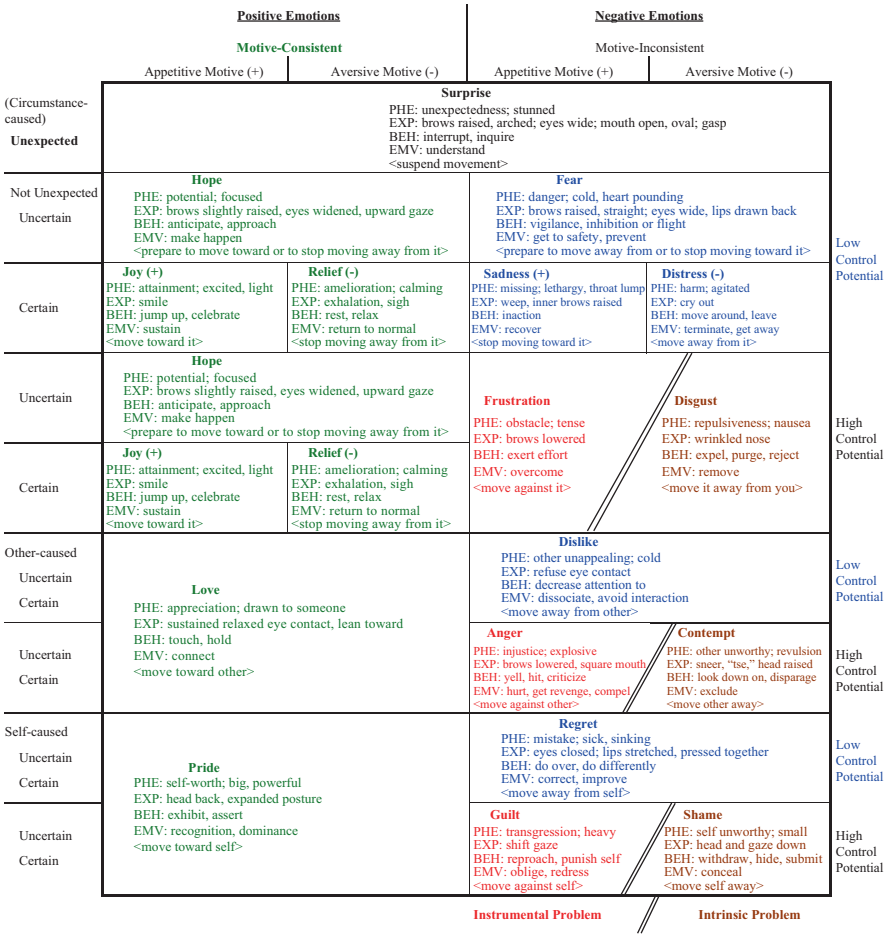

Fig. 8.1 Hypothesized structure of the Emotion System, showing appraisals and some resulting emotional responses. (Adapted and revised from Roseman, 2013) (Note: Emotion components: *PHE* phenomenological, *EXP* expressive, *BEH* behavioral, *EMV* emotivational goal. Strategies integrating the response components for each emotion are given in angle brackets. Appraisal combinations eliciting each emotion are found by proceeding outward from an emotion box to its borders around the chart)

eliciting events, but pleasant when one looks forward, anticipating overcoming obstacles and opponents, or taking revenge. Such envisioned outcomes indicate appraised control potential. Keltner, Young, Heerey, Oemig, and Monarch (1998) found that fraternity members in positions of greater power showed more angry facial expressions in teasing interactions than members in lower power positions.

In two studies of recalled anger experiences, Lemay, Overall, and Clark (2012) found that anger intensity was significantly correlated with appraisals of control.

In addition, appraisals of injustice or unfairness correlate with anger (Averill, 1982; Kuppens et al., 2003; Shaver, Schwartz, Kirson, & O'Connor, 1987; Tong, 2010) and can provide a measure of control potential (French & Raven, 1959, "legitimate power"). Lerner (2015) has described how people become committed to the belief that one will "most of the time, and in most part," get what one deserves (p. 211) and has detailed much research supporting the existence of (an often preconscious) belief in a just world across many contexts. This provides strong evidence that perceived injustice will often confer control potential—a sense that ultimately wrongs will be righted. Having justice on one's side may also enable one to influence a harm-doer's behavior or recruit assistance from third parties (Roseman, 1984). Perceived unfairness may not be a *necessary* determinant of anger, given anger-related responses in animals (e.g., Blanchard & Blanchard, 2003) and 4- to 8-month-old infants (Lewis, Alessandri, & Sullivan, 1990). Instead, infants show such reactions when they learn that they can exercise control over events (Lewis et al., 1990).

Even when control potential is objectively lacking, perceiving that a person should not have done something, or an event should not have happened, may create at least a primitive or temporary sense of control potential (a sense that one *should* be able to do something about the situation; cf. "arrogant entitlement," Kuppens et al., 2003). Appraisals of control potential may help explain why children's "protest" reactions to separation (Bowlby, 1969), including temper tantrums, precede "despair" reactions, which are characterized by despondency (Simpson & Belsky, 2008) as a caregiver's continued absence eventually erodes the child's sense that something can be done to bring him/her back at that time. Among adults, data fitting the J-curve theory of revolutions (Davies, 1962) indicate that protests, riots, and rebellions (which, as discussed below, often involve anger) are likely to occur not when oppression is most intense but rather when a downturn follows a period of improvement. In such instances, the history of rising expectations may suggest that change is possible.

There is controversy about whether any or all of these appraisals are necessary or sufficient to elicit emotions, including anger (Kuppens et al., 2003). As Izard (1993) observed, claims of appraisal necessity are challenged by instances of non-cognitive emotion generation, such as from physiological manipulations (e.g., psychoactive drugs; brain stimulation), enacted expressions (e.g., Ekman, Levenson, & Friesen, 1983), or emotion contagion (Hatfield, Cacioppo, & Rapson, 1994). However, insofar as there can be more than one cause of an effect, such findings are not incompatible with appraisal being the typical elicitor of anger and other emotions.

More problematic is evidence that the specified appraisal combinations can occur without the consequent emotions. For example, in a careful investigation of "pure" experiences of anger, sadness, fear, and guilt, Tong (2010) found that each of the appraisals that he studied was associated with greater likelihood of experiencing the theoretically linked emotions, but the appraisal-emotion relationships were probabilistic. Nevertheless, this study found that anger became more likely as the

number of its measured determinants increased. The conditional probability of experiencing anger given an appraisal of unfairness was 0.21; given the combination of unfairness and unpleasantness, 0.33; and given unfairness, unpleasantness, and responsibility of others, 0.39 (the addition of an appraisal of obstacles did not increase the conditional probability above 0.39). This raises the possibility that adding other key appraisals could further increase the likelihood of experiencing the hypothesized emotions, and Tong (2010, p. 699) notes that "this study might have overlooked critical appraisals." The Emotion System theory suggests that control potential may be such a key appraisal determinant, e.g., in cases where unfairness yields insufficient expectation of countering a negative outcome. Wortman and Brehm (1975) concluded that expectations of control differentiated depression-like learned helplessness vs. more anger-like reactance in response to non-contingent outcomes.

Anger and Other Emotions as Response Syndromes

How are the responses of anger similar to and distinct from those of other emotions in the emotion system? Different theorists and researchers have focused on different responses as characteristic of emotions, including subjective feelings (e.g., Davitz, 1969; Barrett, Mesquita, Ochsner, & Gross, 2007), thoughts (e.g., Lerner & Tiedens, 2006; Ortony, Clore, & Collins, 1988), physiological responses (e.g., Kreibig, 2010; Panksepp, 2017), facial expressions (e.g., Ekman, 2003; Keltner, Tracy, Sauter, Cordaro, & McNeil, 2016), behaviors (e.g., Frijda, 1986; Plutchik, 1980), and motivations (e.g., Izard, 1991; Tomkins, 1970).

Many see emotions as encompassing multiple response sytems. The conceptualization proposed here, like that of Scherer (2009), includes all five of the above response types as components of emotion syndromes. Note that appraisals (perceptions of the fate of motives, such as in anger, undeserved harm caused by another person) can be antecedent causes of emotions and also part of the phenomenology of an emotion once it occurs. But the phenomenological component also includes thoughts other than appraisals, that arise when an emotion is triggered (e.g., in anger, thoughts about hurting the target). Conceptualizing emotions as syndromes (Averill, 1980) indicates that specified properties of an emotion tend to co-occur, but no particular property is essential for the emotion to be present (cf. Fehr & Russell, 1984; Shaver et al., 1987). It is also possible that a modified syndrome conceptualization (e.g., with some common neural circuitry variably expressed in other components; see Potegal & Stemmler, 2010) will better characterize emotions, though a number of researchers maintain that meta-analytic evidence for unique brain-emotion patterning is lacking (e.g., Clark-Polner, Wager, Satpute, & Barrett, 2016).

The *phenomenological* component includes thoughts and feelings that are typical of an emotion, such as in anger, thoughts about injustice (Averill, 1982), appraisals of certainty (Lerner & Keltner, 2001), and ruminations about revenge

(Sukhodolsky, Golub, & Cromwell, 2001); and feeling aroused, hot, and as if one would explode (Kövecses, 2010; Roseman, Wiest, & Swartz, 1994; Scherer & Wallbott, 1994). For example, in the deidentified sample narrative that began this chapter, the research participant says that his suffering was underserved and unfair, is sure of what the target of his anger will not "acknowledge," "can't seem to let go of that anger," and thinks that the target "needs to be punished." He also reports that his anger is making him feel hot, perspiring a little.

The *physiological* component encompasses central and peripheral patterns of neural, chemical, and muscular responses. For example, it has been proposed that the physiology of anger or rage includes activity in neural circuits running from the medial amygdala (Potegal & Stemmler, 2010) through the hypothalamus and midbrain periaqueductal gray (Blair, 2016; Panksepp, 2017), increases in both adrenaline and noradrenaline levels (Stemmler, 2010), increased general peripheral resistance (due to vascular constriction) but vasodilation in active muscles (Goldstein, Edelberg, Meier, & Davis, 1989) and facial skin (Stemmler, 2010), and increased muscle tension (Ax, 1953).

The *expressive* component consists of facial, vocal, and postural responses, as well as movements, that signal one's emotion to others. According to Matsumoto, Keltner, Shiota, O'Sullivan, and Frank (2008), research indicates anger is associated with the following action units from the Facial Action Coding System (Ekman, Friesen, & Hager, 2002): 4 (eyebrows lowered and drawn together, forming a furrowed brow); 5 (upper eyelid raised, widening the eyes, and creating the appearance of a fixed stare) or 7 (upper and lower eyelids tightened, narrowing the eyes); 23 (tightened lips, making their red parts seem narrower); and 22 (funneled lips which can expose teeth, as in Fig. 8.2a, similar to the squarish mouth associated with anger in Izard's, 1983 MAX coding) or 24 (lips pressed together). Vocalizations that research participants identify as anger tend to be loud, fast, and rising in pitch (Green, Whitney, & Gustafson, 2010). A stance with the head bent back, shoulders straight, and arms raised forward and upward (resembling a fighting pose) was differentially identified as anger in a study by Coulson (2004; Fig. 8.2b). Across

Fig. 8.2 (**a**) Facial expression of anger (from Matsumoto & Hwang, 2011). (**b**) Posture most reliably identified as anger (from Coulson, 2004)

American, British, and Kreung cultures, Parkinson, Walker, Memmi, and Wheatley (2017) found that fast movement with arms thrust forcefully downward distinguished anger from disgust, fear, sadness, and happiness.

The *behavioral* component comprises tendencies and readiness to take particular actions when feeling an emotion. Anger has been associated with readiness to engage in aggressive behaviors (e.g., Berkowitz, 2012; Frijda et al., 1989). Averill's (1982) landmark study found that 93% of community residents and students reported feeling like acting aggressively in anger incidents in the week prior to filling out his survey and that 83% actually did so. More than twice as many (82%) felt like aggressing verbally as compared with those who felt like engaging in physical aggression (40%; see also Kassinove, Sukhodolsky, Tsytsarev, & Solovyova, 1997). Non-aggressive responses, such as talking about the angering incident with the instigator or a neutral third party, were reported by 75% of respondents (though at least some of these could be attempts to reduce the anger). Shaver et al. (1987) found a majority of anger incidents characterized by verbal attack and shouting. Similarly, Roseman et al. (1994) found recalled anger experiences differentiated from other negative emotions by the items "say something nasty" and "feel like yelling." The research participant in the anger narrative quoted at the start of this chapter felt like breaking something, yelling, and screaming.

The *emotivational* component consists of goals that people want to pursue when experiencing an emotion (Roseman, 1984; cf. De Rivera, 1977; Frijda, 1986), as distinct from goals (e.g., maintaining self-esteem; completing a task) whose blockage may have elicited the emotion (though blockage of emotivational goals can elicit additional emotions). Goals proposed as characteristic of anger include removal of an obstruction (e.g., Frijda, 1986; cf. Lench & Levine, 2008), correcting some injustice (e.g., Averill, 1982), or getting revenge (e.g., Aristotle, 1966; Roseman, 2011). If aggression involves intent to harm (e.g., Anderson & Bushman, 2002) and readiness for aggression is associated with anger, then hurting in some way (even if it only involves making the target feel bad) seems at least one short-term goal of anger (Roseman, 2011). For example, Roseman et al. (1994) found that participants recalling anger experiences agreed they wanted to hurt someone and get back at someone. In the anger narrative above, among other goals, the participant says he wants the target of his anger "to hurt."

However, while hurting the target in some way can be a salient immediate goal in anger, it is unclear whether it is a primary or ultimate emotivational goal of anger. Our research participant said "I want to hurt those who hurt me so that they know what it was like." He wants that "because I feel that is the only way [the harm doer] will understand what he put me through and maybe that would make him take responsibility." He also reports wanting "some kind of justice, some kind of amends, some kind of closure." The goal of revenge suggests not merely harm, but a connection or calibration of harm inflicted to harm returned (see Frijda, 1994). Perhaps harm-seeking should be understood as an intermediate goal of anger—a means to making the target change behavior and deterring similar instances of harm (Fessler, 2010).

Gollwitzer, Meder, and Schmitt (2011) found that research participants who take revenge against a partner's unfair actions feel more satisfied, or feel that everyone got what they deserved, if offenders acknowledge having done harm and admit fault (rather than merely suffering, which would have been consistent with a harm-seeking goal). Though felt satisfaction in their studies was not empirically related to anger, such findings raise the possibility that revenge-seeking in anger also aims at (a) restoring status lost through victimization, and/or (b) obtaining reason to believe the offensive conduct will not be repeated (Gollwitzer et al., 2011).

The goal of *compelling others' behavior* may also better encompass instances of anger felt toward friends and loved ones (in Averill's, 1982 survey, a loved one or friend was the target in 54% of anger instances). Coding narratives of emotions in marital relationships, Fitness and Fletcher (1993) found an urge to physically hurt the partner in only 7% of anger incidents, and an impulse to revenge in only 2%. Parent-child anger may be similar, with instances of actually wanting to hurt the target being relatively rare. Similarly, although revenge may sometimes be desired in parent-child anger, there are many cases in which it seems to play no part. If a parent is angry at a child for not cleaning his room, or a child at a parent for refusing to allow her to go to a party, the goal seems often to be influencing the target's behavior (and if the behavior changes, anger is likely to diminish). Consistent with this view, Fischer and Roseman (2007) found that anger was more associated than contempt with a goal they called "coercion." Three of the four items measuring this goal ("I wanted the other not to do this again," "I wanted the other to realize that he/she has gone too far," "I wanted the other to apologize") specify or imply seeking behavior change (the fourth item, "I wanted to get even with this person," seems to tap revenge). Smetana, Daddis, and Chuang (2003) found that parent-adolescent conflicts in middle-class African-American families were typically resolved by adolescents giving in and occasionally by compromise (and in resolved conflicts parental use of punishment was lower).

In Fig. 8.1 "compel" is proposed as a characteristic goal in anger, rather than "coerce," as the angry person may not want to utilize threats to induce behavior change. Again, it is considering anger at friends or loved ones which suggests that threatening may not be integral to the goals of angry persons—making the target act (or not act) in a certain way seems more characteristic across instances. It is also possible that "impel" is a better description than "compel" of the typical goal pursued in anger. According to grammarist.com (n.d.), "A person who is *impelled* has been persuaded to do something (perhaps based on moral grounds) and does so at least partially of his or her own volition. *Compel* implies that the person being compelled has no choice in the matter and is being coerced. For the person being compelled, the coercion is so strong that choice and morality don't enter into it." However, insofar as—at least in some instances—the angry person wants to influence the target's action whether or not the target is willing, "compel" may be the more generally applicable formulation. Three studies by Lemay et al. (2012) found that in recalled experiences relevant to anger, anger intensity was correlated with the goal of changing the target's behavior.

An alternative hypothesis is that a goal when experiencing anger is to make the target feel bad (more or rather than to inflict physical harm). Pursuing that goal would fit with the proposed strategy and function of anger (discussed below). As already noted, the literature on hostile aggression shows there are instances in which people do intend to harm the targets of their rage. Research is needed to elucidate the conditions under which anger results in intent to harm or, if harm is generally intended in anger, to identify the determinants of the degree of harm sought (from making the target feel bad to inflicting physical injury). In recognition of this gap in knowledge, Fig. 8.1 retains revenge and hurting (with degree unspecified) as emotivational goals, along with the goal of compelling the target's behavior.

Fischer and Roseman (2007) also found that, compared with contempt, anger was more associated with reconciliation ("making up," "talking it over," "solving the problem"). This finding could be interpreted as indicating that one of the emotivational goals of anger is to maintain a relationship with the target of the emotion (e.g., de Vos, van Zomeren, Gordijn, & Postmes, 2016). However, the score for anger on Fischer and Roseman's (2007) reconciliation index was below the scale midpoint, suggesting that anger is associated with reconciliation only in comparison to contempt. Moreover, the targets of the recalled anger incidents were relatively intimate with the angry person, and the desire for reconciliation was reported as a reaction after some days, whereas the immediate response involved attack (confrontation, tough language, unfriendly remarks, and criticism). These considerations all call into question whether reconciliation and relationship maintenance are part of anger or rather separate goals operative especially when the target of anger is someone with whom one already has a close relationship—goals that can follow or coexist with anger more easily than with contempt. Fischer and Roseman (2007) proposed that reconciliation may occur especially if undesired outcomes are altered.

De Vos, van Zomeren, Gordijn, and Postmes (2013, Study 1) found that Dutch students perceived German students as wanting a relationship with the Dutch more if the Germans communicated anger about discrimination than if they did not mention anger. However, in that experiment, the ascribed goal of having a relationship may be attributable to the context (a fictitious newspaper story described the German students as having come to the Netherlands to study, and reacting to Dutch students who were arguing they should stay in Germany instead) rather than to anger itself. Anger in that case may be compatible with the desire for a relationship, and even arise from perceiving the Dutch students as blocking this goal. Analogously, anger in attachment relationships (Bowlby, 1973, p. 278, cited in de Vos et al., 2016) may arise when proximity-seeking or other relationship goals are thwarted. But the relationship goals are separable from the anger (they exist prior to and subsequent to the anger response) and indeed may be diminished when one is feeling anger, as when some infants temporarily refuse to interact with an attachment figure after separation (as with the "insecure resistant" group in Waters, 2002), or adults feel a lessening of closeness and desire for intimacy when angry at a romantic partner (see Bozman & Beck, 1991).

Emotions as Coping Strategies: The Functions of Emotions

As discussed in Roseman (2011), examining the constituents of emotion syndromes suggests that the various responses characteristic of each particular emotion appear to be related to each other, forming distinctive strategies for coping with particular types of situations (see also Lazarus, 1991). These emotional coping strategies, like reproductive strategies (Kenrick & Keefe, 1992), have been shaped through natural selection and need not be consciously pursued by the person feeling an emotion. Each emotion's strategy fulfills the functions of that emotion.

Tolman (1923) observed that emotions are not just reactions to events, but responses that "act back" on those events, in order to influence them. Response syndromes in positive emotions function to "get more" of something, such as by moving toward something (an emotion-eliciting stimulus), by forming a relationship with someone (when motive fulfillment may be provided by another person), or by exhibiting characteristics and actions of the self (when outcomes are self-caused). Response syndromes of negative emotions function to "get less of something" by moving away from something, by moving something away the self, or by moving against something (see Fig. 8.1). According to the Emotion System theory, the strategy of anger is to *move against another person*.

Functions of the Emotion Components within an Emotion Strategy

Within emotion syndromes, each response component has a functional role to play in implementing the strategy of the emotion (here, moving against the target of one's anger). The emotivational component comprises goals that motivate and guide instrumental behavior. For example, in anger, the goal of hurting the target in some way (Roseman et al., 1994), or compelling the target's actions, motivates behaviors aiming to create some negative consequence (e.g., guilt, shame, regret, physical pain, loss of some benefit, or fear of any of these) for the target's unwanted actions. The behavioral component suggests behaviors that evolutionary history or experience has indicated may succeed in furthering the emotion's strategy. For example, in anger, protesting, yelling, and hitting (e.g., Potegal & Qiu, 2010) are behaviors that move against the target and could pressure the target to act or to refrain from acting in a particular way. The expressive component transmits communications that can lead perceivers to act in ways consistent with the expresser's strategy. Facial, vocal, and postural responses of anger communicate strength (Sell, Cosmides, & Tooby, 2014) and threaten aggressive behavior (e.g., Eibl-Eibesfeldt, 1989).

The phenomenological component primes potentially relevant thoughts, makes salient important features of situations, and cues retrieval of other experiences of the emotion and associated information. Prototypical thoughts in anger focus attention on injustices and harms perceived as caused by the target, and ways of preventing,

halting, or avenging them (Sukhodolsky et al., 2001). Labeling one's state as anger, and feeling hot and ready to explode, connect current instances to previous experiences of anger, also potentially priming relevant behaviors and enhancing access to information about responses that have or have not achieved emotivational goals in similar situations–thereby helping to guide goal-directed emotional behavior.

The physiological component prepares for, organizes, facilitates, and provides the physical substrate for the various responses within an emotion's strategy. In anger, particular patterns of neural activity in the amygdala-hypothalamus-PAG circuits mentioned previously–perhaps modulated by the ventromedial prefrontal cortex calculating potential rewards of aggression and the orbitofrontal cortex processing potential punishments (Potegal & Stemmler, 2010)–may motivate, organize, and shape aggressive action; increases in respiration and blood pressure increase energy available for attack; facial muscle movements and flushing signal and communicate anger; and afferent feedback from such processes to the cerebral cortex contributes to the emotion's phenomenology. White, Brislin, Sinclair, and Blair (2014) found that in response to unfair offers in the Social Fairness Game, there was increased activity in the PAG and decreased activity in the vmPFC, both associated with increased punishment of the partner making the unfair offer.

From Emotion Strategies to Emotion Functions

Emotion strategies exist within a functional context, connecting situation types to coping responses, within a set of available coping alternatives. Thus the function of an emotion may correspond to the likely effect of an emotion strategy in the type of situation which elicits that emotion.

Various functions have been proposed for anger. Some identify relatively specific functional effects, such as:

- *Safeguarding physical survival* by removing threats to the self (Keltner & Haidt, 2001)
- *Terminating and deterring transgressions* by the target and other people (Fessler, 2010)
- *Redressing injustice* (Solomon, 1990)
- Motivating the angry person to avoid negative outcomes by *averting subordination* and *gaining superiority* (Stemmler, 2010)
- *Decreasing willingness to cooperate with* and *increasing willingness to impose costs upon the target*, thus increasing the target's willingness to cooperate and decreasing the target's willingness to impose costs upon the angry person (Tooby & Cosmides, 2008)

Others are more general:

- *Confrontationally increasing short-term social distance* between the self and the target (Fischer & Manstead, 2016)

- *Overcoming obstacles to goals* (Lench, Bench, Darbor, & Moore, 2015)
- *Mobilizing resources* (both physical and psychological) to cope with adversity, *energizing aggressive action* to correct a problem, and *conveying displeasure* (thus *promoting conflict resolution*; Novaco, 2010)

Each of these theories makes a contribution to understanding anger's functions. Transgressions and injustices are prototypical causes of anger (Kuppens et al., 2003), subordination predicts vulnerability to future harm, and threats to survival are of ultimate importance. Yet, anger can be elicited by and cope with challenges to *any* motive (as will be discussed below). Obstacles to goals can elicit anger (Ceulemans et al., 2012), and the overcoming function encompasses instances of anger at inanimate objects and the self. But typical responses of anger (e.g., threatening expressions, readiness for and actual verbal or physical aggression, seeking to make the target feel bad) are especially suited to dealing with other people, who can understand communications of displeasure, protest, and threat, and experience the psychological and physical pain of criticism, animus, and aggression.

Anger does function to change targets' behavior but so do other negative emotions, such as sadness (soliciting assistance) or shame (avoiding censure), and even positive emotions, such as joy (encouraging continued provision of reward). Indeed it is plausible that *all* human emotions have evolved in part to influence others' actions within the species' social context, which is why emotions have expressions. Thus a more specific account is required for anger. Given anger's distinctive responses (moving against another person by confrontational or aggressive action) and the situations in which they occur (goal blockage or harm, caused by other persons, when there may be something one can do about it), the most precise description of the specific function of anger may be to *coerce another person's action* (forcefully changing it from what it would otherwise have been).

According to the American Heritage Dictionary (n.d.), coerce means "to pressure, intimidate, or force (someone) into doing something." It is an intended effect of the strategy of moving against another person, and it makes functional sense in situations that are accurately appraised as involving relatively high control potential. As will be discussed in more detail in the section on appraisal-emotion relationships, the hypothesized coercion function fits both the response profile of anger and the situations in which it typically occurs.

Variability in Emotional Response

It is important to acknowledge that manifestations of an emotion syndrome may differ across individuals, time, and situations (Barrett, 2009; Roseman, 2011). For example, an angry facial expression may include pressed together lips as well as bared teeth (Matsumoto, Keltner, Shiota, O'Sullivan, & Frank, 2008), and anger may occur without facial expression (Ekman, 1972; Kerr & Schneider, 2008). Angry behavior can involve verbal aggression (e.g., hostile comments), physical aggression (e.g., hitting, kicking), indirect aggression (e.g., spreading malicious rumors),

passive aggression (e.g., giving the silent treatment), and even non-aggressive attempts to resolve a conflict (Averill, 1982).

There are at least seven explanations for such variability (cf. Roseman, 2011). First, variation in emotion intensity can affect whether a facial expression (e.g., an angry glare) or action tendency (e.g., yelling) will be manifest (these are more likely as intensity increases; Frijda, Ortony, Sonnemans, & Clore, 1992), and perhaps which action it will be (e.g., stamping at lower intensity and screaming at higher intensity; Potegal & Qiu, 2010).

Second, emotional responses are often modulated by emotion regulation processes, which differ among individuals and over time (John & Gross, 2004). For example, people may intensify, dampen, or mask their expressions of anger (Ekman, 1972). Attempts to talk over an angry incident with the instigator (Averill, 1982), or reconcile after a confrontation (Fischer & Roseman, 2007), may reduce or control (rather than manifest) the emotion.

Third, multiple patterns of action readiness may be potentiated by a given emotion (Frijda, 1986), such as yelling at versus hitting someone in anger. While each of these may be more likely to occur than if the emotion were not being felt, the specific action prompted may also depend on situational variables, such as the angry person's power relative to the target, and the relationship, if any, that exists between them (e.g., strangers; friends; parent and child). Moreover, the multiple patterns of action readiness that are characteristics of emotions are not fixed action patterns, but rather are complex suites of interrelated responses (Frijda, 1986; Lazarus, 1991) that vary depending on changing external stimulus conditions (e.g., the physical distance between the angry person and the target), feedback from prior actions (e.g., the target's response), and internal determinants (e.g., SNS arousal; testosterone and serotonin levels). In an angry confrontation, whether or how to yell or hit can be continually recalculated as conditions change.

Fourth, apart from (relatively impulsive) action tendencies, the particular *instrumental* action that is taken in pursuit of emotivational goals likely depends on situational conditions. For example, whether yelling versus giving the silent treatment is more likely to make a target of anger feel bad may depend on the number and identity of other people present, as well as the goals and sensitivities of the target.

Fifth, multiple emotions (e.g., fear, anger, and guilt, each with differing effects on action) may be elicited by the same event (e.g., disobedience that puts one's child in danger) and occur simultaneously or in rapid succession.

Sixth, emotions can co-occur with motives, cognitions, and other nonemotional determinants of behavior, which may modify emotional and nonemotional responses taking place at the same time. For example, high need for approval (Taylor, 1970), normative beliefs about anger expression (Gibson & Callister, 2010), and ongoing action sequences such as eating or driving can each alter the facial expressions and actions of anger, as well as other simultaneously occurring behavior.

Finally, insofar as all behaviors, expressions, and other manifest responses are organized and carried out by the brain and body, each of these variations will correspond to variations in physiology occurring in an emotion episode. If, for example, refusing to speak to someone, yelling at, and hitting the person are all anger

responses, and such responses may be regulated or combined with other emotions and nonemotional responses, it should come as no surprise that there are few if any single neural, chemical, or muscular signatures found in all instances of anger.

Yet despite such variability, different instantiations of anger are recognizable as alternative means to attaining the emotivational goals of making the target feel bad, or compelling the target's action. All may be understood as in some way manifesting anger's function of coercing the target to change behavior from what it would otherwise have been.

Emotions as General-Purpose Coping Strategies

Which behaviors of a target person does anger coerce? Any action of another person, or the failure of a person to take any particular action, could become the focus of someone's anger. For example, various research participants describing angry incidents (in Scherer, 1988) "tried to make [the target] compare me with others of my age," "make [the target] stick to his word," or get the target to stop "excessive drinking" (Appendix E, participants 26, 28, and 30). That is, each emotion is a general-purpose coping strategy, applicable to an infinite variety of specific situations of a particular type (in the case of anger, as indicated above, some motive-inconsistency appraised as caused by other persons, when one has potential to do something about it).

Emotions as Alternatives to Motives

The anger incidents just described involved the blockage of diverse goals: going out to a party with friends, co-authoring a seminar report, reducing drinking by a relationship partner (Scherer, 1988). Indeed, there is no limit to the varieties of motive-inconsistency that can elicit anger. Each of these could be pursued in motive-specific ways (e.g., asking a parent's permission, meeting to divide up report responsibilities, pointing out harmful effects of excessive alcohol consumption). In contrast, reacting with anger may coerce a target's behavior in (and thus be useful in coping with) any of these or other situations. Emotions are thus *general-purpose* responses that function to provide alternative ways to attain whatever one's motives may be.

Why should humans and other organisms have two systems—motives and emotions—to energize and direct behavior? According to Tomkins (1970), motives ("drives" such as hunger) direct behavior toward relatively specific ends (e.g., edible objects), whereas emotions ("affects") are more general with respect to their object (e.g., the limitless variety of behaviors people may attempt to compel in anger, and outcomes one may try to avoid in fear or celebrate in joy). Tomkins also proposed that affects have primacy over drives in influencing behavior.

It is proposed in this chapter that the generality and primacy of emotions are related—the emotion system has evolved to preempt the relatively specific-purpose

pursuit of motives with the general-purpose coping strategies of emotions when fast action may be needed (Roseman, 2008; cf. the "control precedence" of emotional action tendencies in Frijda's 1986 theory). Motivated behavior is often more deliberative (though much "deliberation" may occur unconsciously), as executive functions process whether particular responses will result in rewarding or aversive consequences and may compare the relative efficacy of different instrumental actions (e.g., taking food from the refrigerator, preparing a meal, or going to a restaurant to satisfy one's hunger). In contrast, emotional behavior is often more impulsive, involving greater reliance on relatively pre-specified patterns of action readiness (e.g., yelling or hitting in anger, freezing or running in fear). Though some motive-linked behavior is habitual or automatic, people seem more able to deliberatively consider how to get food when hungry than how to attack when angry (see Lerner & Tiedens, 2006).

However, emotional behavior is not always so impulsive (as in cyberstalking triggered by anger over a breakup; Strawhun, Adams, & Huss, 2013). In addition to readiness for specific actions, the emotivational goals of emotion syndromes (e.g., getting revenge, or making the target feel bad, in anger) can prompt an infinite variety of instrumental actions (e.g., insulting, threatening, revealing private information) whose likely effects can be evaluated in light of situational conditions. As will be discussed below, behavior governed by emotivational goals may typically have more control precedence than other motivated behavior (because emotivational goals have higher priority or urgency than other goals), but less than behavior governed by emotional action tendencies.

Emotions as Alternatives to Each Other

In addition to being alternatives to motives, particular emotions are alternatives to each other, forming coherent sets of coping options that shed light on why the human species has particular emotions (discussed in more detail in Roseman, 2011). Fig. 8.1 includes four *emotion families*, each of which contains related emotions that have evolved to cope either with motive-relevant events in general (surprise, hope, joy, relief, fear, sadness, distress, frustration, and disgust), events caused by other people (love, interpersonal dislike, anger, and contempt), or events caused by the self (pride, regret, guilt, and shame). The five positive emotions (shown in green in Fig. 8.1) comprise a family of *contacting emotions*, whose strategies increase proximity to or interaction with impersonal, interpersonal, or intrapersonal stimuli. Fear, sadness, distress, interpersonal dislike, and regret constitute a family of *distancing emotions*, which move the self away from emotion elicitors. Disgust, contempt, and shame are *rejection emotions*, which move eliciting stimuli away from the self. Frustration, anger, and guilt are *attack emotions*, which move against impersonal elicitors, other persons, and the self, respectively. Surprise, which is not inherently positive or negative, and whose status as an emotion is thus controversial (e.g., Ortony, Clore, & Collins, 1988), suspends action and seeks information.

Among the attack emotions, anger's threatening facial expressions, behaviors such as criticizing or hitting, and goals of revenge or harm-seeking are specialized ways of moving against animate agents who can understand hostile communications, feel pain, and anticipate negative consequences. The self-reproach, self-punishment, and reparative responses (e.g., apology) of guilt (Roseman et al., 1994) are specialized for moving against the self, compelling changes in one's own behavior. Responses in frustration, which involve increased effort and forcefully overcoming obstacles (e.g., Amsel, 1992; Roseman et al., 1994), are suitable for moving against all types of interference with one's motives, including those impersonally caused.

Anger can also be contrasted with interpersonal dislike and contempt, two alternative negative emotions felt toward other people. Responses of interpersonal dislike move away from (rather than against) people in physical and social space, e.g., by avoidance, decreasing interaction, and dissociation (Feldman, 1969; Roseman et al., 1994), which function to get away from negative consequences others might cause. Responses in contempt (e.g., condescension, gossiping about, social exclusion, and social rejection; Fischer & Roseman, 2007) move target persons both physically and socially away from the self, which can reduce their impact.

Functional Relationships between Eliciting Appraisals and Emotions

According to the Emotion System theory, appraisals encode key properties of situations and events that predict–typically without the necessity for complex deliberative calculation–whether non-affective, motivational, or emotional responses are likely to be adaptive; and if the latter, which particular emotion strategy is most likely to succeed in coping adaptively.

Appraisals Influencing Non-affective Vs. Motivated Vs. Emotional Behavior The prevailing system of behavior governance at a given time appears to be determined at least in part by appraisals of a situation's *degree of consistency and inconsistency* with various motives (which can be conceptualized as biological and psychological reference states that function as goals or anti-goals; Carver & Scheier, 2012). For example, an individual may have a characteristic set point, range, or responsiveness to the peptide hormone ghrelin (Buss et al., 2014) or a particular level of success (or failure) that he or she seeks to approach (or avoid; Elliot & Church, 1997). Greater distance from goals or greater closeness to anti-goals may shift control away from non-affective (e.g., cognitive) processes and produce more intense motivation and more motivated action (e.g., food-seeing, achievement attempts).

Change in motive-consistency generates emotions (Frijda, 1986, cf. Scherer, 2009), with increases producing positive emotions and decreases (i.e., change in the direction of motive-*in*consistency) producing negative emotions (Roseman,

Antoniou, & Jose, 1996). Inconsistency with expectations (i.e., the occurrence of unexpected events) elicits surprise (Reisenzein, 2000).

The more important the motive and the greater the change in motive-consistency (e.g., from an average grade to a failing grade, rather than from an average to a just-below average grade; or from outstanding success to total failure, rather than from outstanding success to an intermediate outcome), the more intense the emotional reaction is likely to be (Roseman, 2008, 2017).

The importance and extent of change in consistency with motives and expectations influence which system of behavior governance is dominant because they predict the potential urgency of rapid response. The larger and more important the change, the more quickly one may need to cope with the situation. Large changes in the degree to which important motives are or may be fulfilled are therefore appraised as crises or potentially time-limited opportunities, which may make more deliberative processes of action production too costly.

Each system of behavior governance is comparatively likely to be functional under the conditions of its characteristic elicitation by these appraisals. If there is little inconsistency with goals and little consistency with anti-goals, *non-affective* processes can allow relatively unconstrained behavior generation, by situational cues, response tendencies or hierarchies, or automatic or deliberative cognition. Larger degrees of goal inconsistency or anti-goal consistency engender *motivations* (e.g., hunger; competence; achievement motivation), which produce action that is still quite flexible, though influenced by the perceived or associated likelihood of moving in the direction of greater motive-consistency. (Note that instrumental behavior, such as food-seeking, can be variable, even if consumption behaviors, such as eating, are stereotypic).

As actual or potential *change* in motive-consistency is perceived (and increases), *emotions* such as those in Fig. 8.1 are elicited (and intensify), and their emotivational goals become increasingly salient and influential. Emotional intensity is also greater the more important the motive, the greater the rate of change in motive-consistency, and the more imminent the change (Roseman, 2008). Increasing emotion intensity reduces action flexibility by increasingly constraining goal selection to correspond to the general-purpose emotivational goals of the emotion (e.g., making target others feel bad or compelling their behavior in anger) in place of more time-consuming processing of multiple specific-purpose goals, although the latter may remain operative subordinately. For example, other conditions being equal, the longer participant 26 in Scherer (1988, Appendix E) waited for his seminar partner to show up for their appointment, the angrier he was likely to become, with the goal of making the target "stick to his word" becoming increasingly prominent in consciousness. When the partner ultimately did not come to the seminar, forcing the participant to present alone, he is likely to have gotten even angrier.

As perceived change in motive-consistency and consequent emotion intensity increase still further, behavior may become increasingly constrained toward emotional action readinesses, such as yelling in anger, perhaps via interference with deliberative processing of alternative instrumental actions (Easterbrook, 1959; Gable, Poole, & Harmon-Jones, 2015). Here, consideration of fewer actions permits

faster response. At the time of writing about his experience, participant 26 said of the target of his anger "If I saw him now, I guess I wouldn't be able to keep control over myself" (Scherer, 1988, p. 232).

Appraisals Influencing which Emotion Occurs in Emotion-Eliciting Situations Given sufficient perceived change in motive-consistency (heightened or diminished by greater or lesser motive importance, rate of change, and imminence of change), the seven appraisals specified earlier combine to influence which particular emotion (e.g., from Fig. 8.1) will be elicited. The function of these particular appraisals is to sort situations into categories for which particular emotions are most likely to be adaptive, due to their different response strategies (Roseman, 1984).

As shown in Fig. 8.1, the Emotion System model proposes that anger is elicited by appraising an event as a motive-inconsistent effect or goal blockage, caused by another person, when one's control potential is seen as relatively high. Given this combination of appraisals, the response strategy of anger—attacking to coerce the behavior of another person—is relatively likely to succeed (compared with the strategies of other emotions in the emotion system). Let us compare the theoretically specified appraisal-emotion relationships to those that would pertain if any one of the appraisals in the anger-eliciting combination were altered (while holding the others constant), in order to better understand the functional dynamics (see also Roseman, 2013, for additional discussion of these seven appraisals and their functional connections to each of the 17 emotions encompassed within the Emotion System theory).

If an event caused by another person is *not* motive-inconsistent, the effort required to coerce someone's behavior would be unnecessary. Indeed, if another person is causing motive-*consistent* events, the emotion predicted in Fig. 8.1 (some form of liking or love, whose strategy involves moving toward that person, e.g., by forming or strengthening an interpersonal relationship) is much likelier to be adaptive than angry attack.

If motive-inconsistency is due to an *intrinsic* quality of another person (e.g., the person's character or a personality trait or genetic attribute), rather than a goal blockage or negative effect produced by the person, changing this is likely to be more difficult, if not impossible. Holding the other typically anger-eliciting appraisals constant, the emotion predicted to result from another person's motive-inconsistent intrinsic quality is the rejection emotion of contempt. Its strategy of moving the contemptible person away from the self (implemented through derogation and disparagement, and other behaviors pursuant to the goal of social exclusion; Fischer & Roseman, 2007; Roseman, in press) would be more likely to successfully minimize that person's impact on attainment of one's motives.

If appraisal indicates that one *lacks* potential to control the motive-relevant aspects of the emotion-eliciting event, attacking would be unlikely to succeed in coercing the target to alter the behavior. Moreover, if the angry person is weaker than the target, and has no legitimate claim that could prospectively influence the target, enlist the aid of others, or suggest ultimate redress, then moving against the target in anger could result in injurious retaliation. Given such low potential to con-

trol motive-inconsistency caused by another person, the distancing emotion of interpersonal dislike would more likely be adaptive. As shown in Fig. 8.1, the strategy of dislike involves moving away from the disliked person. Moving away from someone (e.g., by avoiding interaction) limits one's freedom of action and is likely to be more disruptive than moving the person away from the self (e.g., via social exclusion). However, this method of creating distance may be more likely to succeed in reducing the other's negative impact when one is relatively weak.

Finally, if the motive-inconsistency is not caused by, and could not be remedied by, another person taking action or refraining from some action, then attacking to coerce that person's behavior would be ineffective in promoting one's motive-attainment. For example, if harm was caused by inanimate objects or impersonal forces and could not be remedied by other persons, then the emotion of "frustration" (which is similar to what Smith & Kirby, 2009, refer to as "challenge") seems likelier to be adaptive. Its strategy, as shown in Fig. 8.1, involves increasing effort to overcome obstacles. If the self is causing motive-inconsistent effects (e.g., by harming others or thwarting one's own goals or values), the self-directed attack emotion of guilt would be more likely to result in motive-attainment. As shown in Fig. 8.1, guilt moves against the self (e.g., by self-reproach) to compel one's own behavior.

Anger Dysfunction

The discussion to this point has focused on ways that emotions are often functional in the situations within which they occur. Yet the extensive literature on emotional disorders (e.g., American Psychiatric Association, 2013; Rottenberg & Johnson, 2007) provides abundant evidence of emotional dysfunction.

Types of Emotion Dysfunction Prototypical examples of emotional disorders involve too much emotion, as in phobias (excessive fear) or bipolar disorder (which involves successive episodes of excess positive and negative emotion). However, there are also disorders that involve too little emotion (e.g., psychopathy) or emotion that is inappropriate to the situations in which it occurs, even if its frequency or intensity is within the normal range (e.g., reactive attachment disorder).

Historically, and still today, individuals with dysfunctional anger often wind up interacting with the police and justice system (e.g., after assault or murder) rather than psychologists. But psychologists and psychiatrists have increasingly concluded that some cases should be viewed as instances of anger disorders (e.g., DiGiuseppe & Tafrate, 2007; Kassinove, 1995; Novaco, 2010). According to a review by Fernandez and Johnson (2016), DSM-5 recognizes anger as a key criterion in five disorders: intermittent explosive disorder (IED), oppositional defiant disorder (ODD), disruptive mood dysregulation disorder (DMDD), borderline personality disorder (BPD), and bipolar disorder (BD).

According to the DSM-5 definitions of these disorders, they vary in the way anger is manifested and in additional diagnostic criteria. For example, DSM-5 iden-

tifies IED with repeated angry or aggressive episodes that are sudden and impulsive; ODD with irritability, defiance, and vindictiveness; DMDD with severe temper outbursts and persistent irritability or anger; BPD with affective lability, fears of abandonment, and suicidality; and BD with irritable mood, especially in the context of a manic episode.

Fernandez and Johnson (2016) also discuss hypotheses about distinctive etiologies for different anger-related disorders. For example, IED has been associated with low central serotonin activity and childhood maltreatment, particularly physical (but not sexual or emotional) abuse; ODD with the long form of the serotonin transporter gene and caretaker hostility; BPD with an invalidating childhood environment, disturbed attachment, and prefrontal cortex deficits; and BD with heightened approach motivation, frustration, and diminished executive functioning.

However, Fernandez and Johnson (2016) suggest that there may be significant transdiagnostic similarities across the disorders. These include excessive attention to and rumination about negative events; tendencies to perceive wrongdoing, blame others, and interpret their behavior as antagonistic; and deficits in executive function that may underlie impulsivity and poor emotion regulation.

In light of the existing literature, it seems that anger is likely to become dysfunctional if it results from inaccurate or distorted appraisals (such as hostile attribution bias, Dodge, 2006–a dysfunction in the emotion generation process); or if its expression, action tendencies, or emotivational goals are insufficiently constrained by situational contingencies (e.g., likely negative consequences), norms, or other goals and priorities of the angry individual, indicating dysfunction in the emotion regulation process. And although anger can be adaptive in all the ways discussed above (defending against threats, deterring transgressions, redressing injustice, etc.), frequent anger also puts one at risk for cardiovascular disease (e.g., Williams, 2010), generalized anxiety and depressive disorders (Stringaris, Cohen, Pine, & Leibenluft, 2009), and interpersonal difficulties (such as decreased marital satisfaction; Renshaw, Blais, & Smith, 2010).

Is Anger Relevant to Politics?

This section examines the literature on anger in the political domain, to see whether or not it corresponds to the functional account of anger presented here and whether it provides additional insights into the functions of anger. Anger has been front and center in descriptions of recent political events and developments in the United States and elsewhere (e.g., Banks, 2014; Cloninger & Leibo, 2017; Hochschild, 2016; Zernike, 2010).

In a Pew Research Center (2016) survey conducted during the US presidential primaries, nearly half of all Republican and Democrat respondents (and nearly 60% of those high in political engagement) reported that the opposition party makes them feel angry. Shortly before the election, data from a Cooperative Congressional Election Study module showed anger to be the negative emotion experienced at

least some of the time by the largest number of Democrats, Independents, and Republicans toward both Hillary Clinton and Donald Trump (Roseman, Redlawsk, Mattes, & Katz, 2017). The American National Election Studies (2016) yielded similar data on Clinton and Trump in its whole sample, though a larger number of respondents reported feeling "disgusted" (a term whose lay meaning reflects anger as much as repulsion; Nabi, 2002) toward Trump, and nearly as many reported feeling afraid ("because of the kind of person he is or something he has done"). Indeed, the importance of anger as a political emotion has long been recognized (in his *Rhetoric*, Aristotle discussed it as an emotion that orators could employ).

Appraisals As in other domains, anger is felt toward political actors seen as causing or responsible for harm to oneself or one's group. For example, in the 2005–2010 British Election Survey, respondents who blamed someone for the financial crisis reported more anger than respondents who blamed no one or did not know whom to blame (Wagner, 2014).

Consistent with the Emotion System theory's analysis of anger's appraisal determinants, there is also some evidence that being in a position of strength increases the likelihood of political anger. For example, seeing newspaper headlines supportive of one's group's opinion increases anger felt toward members of an opposing group (Mackie, Devos, & Smith, 2000). Americans' self-rated group efficacy was correlated with anger in response to viewing photographs of the September 11 terrorist attacks (Cheung-Blunden & Blunden, 2008). Having confidence in the government's ability to respond to the threat of terrorism was correlated with anger felt toward terrorists (Musgrove & McGarty, 2008). An item measuring "internal efficacy" (believing one is able to understand what is going on in politics and government) predicted anger toward the two candidates in the 1992 US presidential election (Valentino, Gregorowicz, & Groenendyk, 2009). Perceived efficacy in preventing tuition fees contributed to students' anger regarding rejection of an argument against the fees (Tausch & Becker, 2013).

However, as in non-political domains, there are also conflicting findings. In an earlier paper, Tausch et al. (2011) found that anger was positively correlated with group efficacy in one study, was not correlated with it in another, and inversely correlated with political efficacy in a third. Group efficacy and expectation to win the wars in Afghanistan and Iraq were not significantly related to anger when other variables were taken into account in path analyses conducted by Cheung-Blunden and Blunden (2008).

It is noteworthy, however, that anger was predicted by perceived injustice in all three studies by Tausch et al. (2011) and by negative attitudes toward terrorism (including items indicating that terrorism is unjustified) in the studies by Cheung-Blunden and Blunden (2008). For example, Tausch et al. (2011) found that perceiving British government foreign policy in the Middle East, Iraq, and Afghanistan as immoral and illegitimate was associated with greater anger among Muslims living in the United Kingdom. Indeed, much evidence indicates that perceptions of unjust treatment contribute to feeling anger about political events. Garrett and Bankert (2018) have also found that basing issue opinions on moral values is associated with greater anger at opposing partisans.

As discussed above, legitimacy (e.g., perceiving one has justice on one's side) may confer power (French & Raven, 1959) or control potential (Roseman, 1984) and thereby contribute to eliciting anger. A similar view has been articulated in the political domain by Huddy (2013, p. 756) who contends that "Group strength does not just lie with military might or an electoral victory, it also includes a sense of moral strength" and leads to anger. Klandermans, van der Toorn, and van Stekelenberg (2008) found that immigrants who thought they were discriminated against felt angry if they also perceived themselves as efficacious (and felt fear in the absence of perceived efficacy). This supports the hypothesis that while perceived injustice can contribute to an appraisal of control potential, the latter is the more proximal determinant leading to attack emotions such as anger (rather than distancing emotions, such as fear; Roseman, 1984).

Finally, the likelihood of reacting to politically relevant events (such as the September 11 attacks or the prospective loss of an election) with anger is increased by stronger group identification (Brown, Wohl, & Exline, 2008, study 2; Rydell et al., 2008) and greater partisanship (Groenendyk & Banks, 2014; Huddy, Mason, & Aarøe, 2015). Insofar as identification with a group is correlated with endorsement of group goals, and greater partisanship with stronger endorsement of those goals, these findings fit Emotion System theory predictions of greater motive intensity fueling higher emotion intensity (see also Griner & Smith, 2000).

Angry Responses in Politics Are the phenomenology, expressions, behaviors, and emotivational goals of anger manifest in the political domain? Political anger is certainly characterized by unfavorable thoughts and feelings about its targets and opposition to policies associated with them. For example, anger toward presidential candidates predicts unfavorable feelings toward them in multiple elections (Johnston, Roseman, & Katz, 2014; Roseman et al., 2012). Banks (2014, 2016) manipulated emotions by asking research participants to recall and write about things that make them feel anger and fear as depicted in facial expression photographs. He found that anger (more than fear) increased opposition to "Barack Obama and the Democrats' healthcare reform bill" among whites who scored high on a measure of symbolic racism (Banks, 2014) and increased opposition to immigration and affirmative action among whites who were relatively unfavorable to blacks (Banks, 2016). Webster (in press) also manipulated incidental anger and found that this (more than in a control group that was not asked to recall a time they felt very angry about politics) led to perceptions that the government is unresponsive to public interests and concerns.

Many theorists and researchers have linked anger to political *action*. For example, based on a review of sociological research on social movements, Jasper (2014) maintains that perceived injustice ("moral shocks") can elicit anger and thus motivate action. Sparks (2015) argues that anger is a critical resource for mobilizing activists and political movements, and can promote solidarity among people who are united in anger against some target. In elections from 1984 to 2008, Groenendyk and Banks (2014) found that anger has been consistently related to four measures of political participation (talking to people about how they should vote, wearing a

campaign button or displaying a campaign sticker, attending a meeting or rally, and donating to a candidate or party). Anger (but not fear) also mediated the effect of party affiliation strength on these activities.

Consistent with an Emotion System theory analysis, anger is especially linked to negative attitudes and actions that *attack* political targets. Empirically, felt anger toward particular candidates *lowered* the likelihood of voting for 2014 Democratic Party U.S. senate candidates Cory Booker and Bruce Braley (Redlawsk, Roseman, Mattes, & Katz, 2018), and Republican Party U.S. presidential candidates Donald Trump, Ted Cruz, and Marco Rubio in the 2016 Iowa Caucuses (Redlawsk, Roseman, Mattes, & Katz, in press). Tausch et al. (2011) found that feelings of anger predicted British Muslims' willingness to engage in non-violent actions to change British foreign policy toward Muslim countries (e.g., signing petitions, lobbying, or joining a peaceful rally, protest, or demonstration), as well as support for violent actions *against* Western military targets. Contempt rather than anger was associated with support for violence against civilians. Matsumoto, Hwang, and Frank (2014) report that increases in anger, contempt, and disgust in the speeches of leaders in multiple countries preceded acts of *aggression* (e.g., war, invasion, revolution) but not acts of resistance (non-violent protest). In experimental research, Lerner, Gonzalez, Small, and Fischhoff (2003) manipulated whether Americans thought about anger reactions versus fear reactions to the September 11 attacks, and found that anger predicted advocating relatively *punitive* policies.

Smith (1993) proposed that anger is central to prejudice and discrimination, and may be manifested in behaviors that harm an outgroup by taking away benefits perceived as undeserved. This fits with Banks' (2016) finding that anger increased whites' opposition to affirmative action. Though not explicitly measuring anger, a measure of "modern racism" correlated 0.46 with support for Donald Trump (Pettigrew, 2017), and measures of "hostile sexism" and "denial of racism" predicted intention to vote for Trump in the 2016 presidential election (Schaffner, MacWilliams, & Nteta, 2017). In an August 2016 poll (Rasmussen Reports, 2016), 96% of likely voters who supported Trump reported feeling angry at current federal government policies (compared with 36% of Clinton supporters).

Evidence also relates the posited emotivational goals of vengeance or hurting the target to political anger. For example, according to Lickel's (2012) review of the literature on revenge, emotions "lie at the heart of retribution" (p. 90), and anger, "clearly a dominant emotion in response to intergroup provocations" (p. 92), predicts intergroup aggression (and aggression, as noted earlier, is typically defined in terms of intent to harm). In Cheung-Blunden and Blunden's (2008) study, described above, Americans' anger about the September 11 attacks predicted support for the U.S. wars in Afghanistan and Iraq and for killing people in those two countries (Osama bin Laden, Saddam Hussein, their officers and fighters, and perhaps even civilians). Sadler, Lineberger, Correll, and Park (2005) found that self-reported anger in response to video clips of the September 11 attacks predicted Americans' rated acceptability of defacing a mosque, verbally confronting a Muslim person, and leaving a threatening message on a Muslim family's answering machine. In the former Yugoslavia, Spanovic, Lickel, Denson, and Petrovic (2010) found that anger

predicted Serbian undergraduates' self-reported motivation to vote for military action, economic restrictions, and restrictions on the rights of Albanian Muslims.

Garrett and Bankert (2018) measured "affective polarization in everyday life" with a five-item scale that included one question asking how often thinking about the opposition party makes the respondent angry, and another question asking how often the respondent has worn political apparel or merchandise "hoping it would upset" opposition party members. The two items were significantly correlated ($r = 0.5$, $p < 0.05$; K. N. Garrett, personal communication, Nov. 9, 2017), linking anger to the goal of making its targets feel bad. Lambert et al. (2010) manipulated anger (by having participants think of a time they were treated extremely unfairly) and found increased support for politicians who advocated "powerful military action…crushing the known enemies of America" (p. 897).

Are vengeance and inflicting harm the end goals sought in political anger, or are they intermediate objectives aimed at compelling behavior change? According to van Stekelenburg and Klandermans (2013, p. 175), social psychological analyses of emotions view anger as "*the* prototypical protest emotion." Republicans and Republican leaners who agree with the Tea Party in the United States have been angrier than other Americans (Pew Research Center, 2013)—*opposing* high taxes (Arceneaux & Nicholson, 2012) and government spending (e.g., on mortgage "bailouts" and Obama's healthcare proposals; Sparks, 2015; Zernike, 2010). Van Zomeren, Spears, and Leach (2008) found that group-based anger predicts collective action to *stop* increases of college fees in the Netherlands; Tausch and Becker (2013) found it motivated action against the introduction of such fees in Germany. Anger in Study 3 by Tausch et al. (2011) predicted measured willingness to engage in actions "to change British foreign policy toward Muslim countries" and support for violence "to stop Western interference in Muslim countries" (p. 139). The "punitive" policies supported by Americans focusing on anger over the September 11 attacks involved deporting foreigners who lacked valid visas, which could be seen as a means to prevent another terrorist attack. Americans' support for wars in Afghanistan and Iraq and for killing Saddam Hussein, Osama bin Laden, and their supporters (Cheung-Blunden & Blunden, 2008) could be similarly understood. It could even be argued that the acceptability of killing of civilians in that study and confronting and threatening Muslims (Sadler et al., 2005), as well as other acts of revenge, are interpretable as aiming to deter future injurious conduct.

Whether vengeance, inflicting harm, or making targets feel bad are viewed as end goals in these instances of anger or as intermediate objectives aimed at the goal of compelling change, political anger, like anger in other domains, appears to aim at coercing the behavior of other people. As such, it makes functional sense for anger to be elicited by appraising others as causing harm when there is potential to do something about it, in light of one's power in the situation or deservingness predicting that one's cause will ultimately prevail. In fact, the observed manifestations of anger in politics highlight the importance of power and legitimacy appraisals in generating this attack emotion, as well as the coercive function of anger's strategy of moving against its targets to force change in their behavior.

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