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An Appraisal Theory of Empathy and Other Vicarious Emotional Experiences

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Empathy, feeling what others feel, is regarded as a special phenomenon that is separate from other emotional experiences. Emotion theories say little about feeling emotions for others and empathy theories say little about how feeling emotions for others relates to normal firsthand emotional experience. Current empathy theories focus on how we feel emotions for others who feel the same thing, but not how we feel emotions for others that they do not feel, such as feeling angry for someone who is sad or feeling embarrassed for someone who is self-assured. We propose an appraisal theory of vicarious emotional experiences, including empathy, based on appraisal theories of emotion. According to this theory, emotions for others are based on how we evaluate their situations, just as firsthand emotions are based on how we evaluate our own situations. We discuss how this framework can predict empathic emotion matching and also the experience of emotions for others that do not match what they feel. The theory treats empathy as a normal part of emotional experience.

Keywords: empathy, emotion, appraisal, vicarious emotion

We feel sad when a crying friend's father has passed away. We feel embarrassed for our colleague when he blunders and blushes. We feel joy for our smiling friend when she succeeds. *Empathy*, feeling what another person feels, is pervasive, and it is a problem.

Empathy is a problem because it defies our assumption that emotions are about our own personal goals (Frijda, 1988; Lazarus, 1991; Moors, 2010; C. A. Smith, Haynes, Lazarus, & Pope, 1993). Indeed, empathic emotions are described as more appropriate for someone else's situation than for our own (Hoffman, 2000; Preston & de Waal, 2002). Yet just as we feel emotions when we see a great work of art or step outside on a sunny day, we feel emotions for others when our personal goals are not involved.

Emotion and empathy have been studied in isolation from each other. Theories of emotion neglect empathic emotions, and theories of empathy are full of special explanations for empathic emotions that are different from explanations for personal emotions. Nevertheless, empathic emotions are real emotions. They strike us quickly and redirect our attention just as any other emotion does and there is no reason to think that they are different from normal emotion processes. Bringing theories of empathy and emotion together explicitly can advance our understanding of both.

What Is Empathy?

We feel emotions about a wide variety of things. Sometimes we feel emotions because something happens to us. These are firsthand emotions. At other times we feel emotions because something happens to someone else. These are vicarious emotions. In some vicarious emotional experiences, we feel the same emotion that the other person feels. These experiences, when we feel an emotion because something happens to someone else and it is the same emotion that they feel, we call empathy.

The term *empathy* is used haphazardly to refer to different phenomena that are related to this kind of emotion sharing, which has led one prominent empathy researcher to suggest abandoning the term altogether (Decety & Cowell, 2014a; Decety & Cowell, 2014b). We suspect part of the problem is that the term empathy is associated with at least three valued outcomes—caring for others, understanding others, and validating others' emotions. Many processes that produce these outcomes, even if they are not the same, are considered to be empathic in some way. If the same process fails to produce these outcomes, it is rejected as not empathic. For example, perspective taking is treated as a part of empathy when it leads to emotion sharing or caring for others (e.g., Decety, 2011; Zaki, 2014). Yet if perspective taking is a part of empathy, then it should be considered empathic both when it leads to altruistic behavior (Toi & Batson, 1982) and when it leads to selfish behavior (Epley, Caruso, & Bazerman, 2006).[1]

The essence of empathy, agreed upon by most empathy researchers, is feeling what another person feels because something happens to them, and that is what we mean by empathy in our discussions. This conceptualization of empathy is equivalent to affective resonance or experience sharing in multicomponent models of empathy, but it does not include other processes that some empathy theorists believe contribute to emotion sharing, such as perspective taking, self-regulation, and mind perception (Decety,

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[1] Basch (1983, p. 122) makes a similar point about the problem with linking empathy to valued outcomes, but he preferred to use the term empathy to describe a process of understanding others rather than feeling what they feel.

2011; Zaki, 2014). Nor does it require empathy to involve feelings of concern for another person, which is called compassion or sympathy (de Vignemont & Singer, 2006; Decety, 2011; Eisenberg, Shea, Carlo, & Knight, 1991; Singer & Lamm, 2009). Although you can feel sad with someone else who is sad (empathy) and also feel concern (compassion), you can also feel happy with someone who is happy (empathy) and feel no concern because nothing bad has happened. Our use of the term empathy does not require understanding another's internal states, which is sometimes called cognitive empathy (Cox et al., 2012; Hodges & Myers, 2007; Nummenmaa, Hirvonen, Parkkola, & Hietanen, 2008; Preston et al., 2007; Preston & de Waal, 2002; Saxe, 2006; Schnell, Bluschke, Konradt, & Walter, 2011; Shamay-Tsoory, Aharon-Peretz, & Perry, 2009), or validating another's emotions. In his *Theory of Moral Sentiments*, Adam Smith (1759/2002) wrote about feeling what others feel because he thought it was an important part of how we approve of their emotions. We think that this is an interesting and understudied topic, but we do not discuss it.

Emotion Theory and Empathy Theory Are Strangers to Each Other

Emotion theories have not said much about emotions for others, though there have been some social approaches to emotion (e.g., Butler, 2011; Mackie, E. R. Smith & Ray, 2008; Manstead & Fischer, 2001; Parkinson, 2011; Parkinson, Phiri, & Simons, 2012; E. R. Smith, 1993; E. R. Smith, Seger, & Mackie, 2007; van Kleef, 2009; van Kleef, van Doorn, Heerdink, & Koning, 2011). These approaches emphasize that other people influence our firsthand emotions. Social appraisal theory argues that people use others' emotions to evaluate their own situations (Manstead & Fischer, 2001; Parkinson, 2011; see also Schachter, 1959). For example, infants look to their mothers' emotional reactions to decide whether to cross a visual cliff (Sorce, Emde, Campos, & Klinnert, 1985) and adults look at others' emotional reactions to decide how much of a risk to take (Parkinson et al., 2012). Intergroup emotion theory argues that important groups that people belong to change their emotions because people stereotype how they should feel to fit the group stereotype and because they adopt group goals as personal goals (Mackie et al., 2008; E. R. Smith, 1993; E. R. Smith et al., 2007). These theories address how our own emotions are affected by the emotions of others. They do not address our capacity to feel emotions for others when we are not in the same situation or when we are not members of the same group.

Empathy theories do discuss our capacity to feel emotions for others, but they treat empathy as something special and they do not relate empathy to the processes that drive firsthand emotional experiences. Also, current theories of empathy focus on situations where an observer[2] feels the same emotion as a target, and they do not consider other vicarious emotional experiences, as though matching makes empathy a separate phenomenon in its own right.[3] The theories explain how an observer can feel sad for a target who feels sad, but not how an observer can feel angry for a target who feels sad. Yet are vicarious emotions that match the target's feelings and those that do not match so different?

Imagine that your colleague uses the bathroom before he gives a conference talk. As he walks to the stage, you notice that a long strand of toilet paper is stuck to his foot. Everyone in the audience can see it. Your colleague might notice the toilet paper and blush, or he might fail to notice it and show no sign of embarrassment. Either way you can feel embarrassed for him (Krach et al., 2011). In the first case, you experience empathy because you feel the same as your colleague, and in the second case you do not because you feel something different. Between the two scenarios, what has changed about the cause or the nature of your own emotional experience? This point is important and we will return to it later, but first we review current theories of empathy.

Current Theories of Empathy

Hoffman's Theory of Moral Development

Psychological research on empathy through the 20th century is summarized well in the writing of the developmental psychologist Martin L. Hoffman (2000), whose theory of moral development has provided the most comprehensive view of empathy. Hoffman focuses on empathic distress in his writing. His theory includes five mechanisms to explain how an observer becomes distressed when observing a target's distress. The five mechanisms are (a) mimicry, (b) classical conditioning, (c) direct association, (d) mediated association, and (e) role-taking.

Mimicry, classical conditioning, and direct association. In Hoffman's (2000) first three mechanisms, the observer perceives the target's emotional experience directly. These mechanisms are considered "primitive, automatic, and . . . involuntary" (p. 36).

Mimicry. Empathy through mimicry involves a two-stage process. First, the observer automatically imitates the target's emotional facial, postural, or vocal expressions. Second, afferent feedback from the imitated expression causes the associated emotional state in the observer. So if you see a stray dog attack someone who looks scared, you automatically imitate the other person's expression of fear. Your own expression of fear causes you to feel scared too. This imitation and feedback process of mimicry is what Hatfield, Cacioppo, and Rapson (1994) call "primitive emotional contagion."[4] The feedback stage is equivalent to a strong version of the facial feedback hypothesis, in which making an emotional face produces a subjective feeling of the emotion (Laird, 1974; Laird & Lacasse, 2014; Zajonc, Murphy, & Inglehart, 1989).

Classical conditioning. Classical conditioning of emotions begins with situations that make us feel emotional even if we have never experienced them before. For example, you might feel scared the first time a dog bites you. After you experience the intrinsically emotional situation, we learn that certain cues are a sign that it is about to happen again. As a result, we start to feel emotional when we perceive those cues. For example, you might learn that dogs growl before they bite and so you begin to feel scared when you hear a dog growl. In the language of classical

[2] Throughout the article we call the person who empathizes the "observer" and the person with whom the observer empathizes the "target."

[3] Empathic emotions are grouped with vicarious pain and vicarious motor action more often than they are grouped with firsthand emotions, as though their vicarious quality is more important than their emotional quality (Gallese et al., 2004; Keysers & Gazzola, 2009; but see Blair, 2005).

[4] Some researchers distinguish emotional contagion from empathy by arguing that empathy requires self-other distinction, whereas emotional contagion does not. We address self-other distinction later in the article.

conditioning, the dog bite is an unconditioned stimulus (UCS) that causes you to feel scared as an unconditioned response (UCR); the dog growl is the neutral stimulus (NS) that is paired with the dog bite often enough to become a conditioned stimulus (CS) that causes you to feel scared as a conditioned response (CR). What does this have to do with empathy? The idea is that features of others' emotional experiences can become the cues that trigger a conditioned emotional response.

In one version of classically conditioned empathy (Hoffman, 2000), during conditioning we experience emotional situations (UCS's) with others who are expressing emotions (NS's). This pairing of the situation and others' emotional expressions causes the emotional expressions to become the cues (CS's) that a similar situation is about to occur. As a result, others' emotional expressions cause us to feel emotions (CRs), which we experience as empathy. For example, you might see a stray dog attack another person who looks scared (NS) right before the same dog attacks you (UCS) and you feel afraid (UCR). In the future when you see others' fear expressions (CS), you will feel afraid again (CR).

In a second version of classically conditioned empathy (Humphrey, 1922), the conditioned stimuli are not others' emotional expressions, but instead they are perceived features of the situation. For example, you might hear a stray dog growl (NS) right before it attacks you (UCS) and you feel afraid (UCR). In the future when you hear a dog growl before it attacks someone else (CS), you will feel afraid (CR). In the first version the target's emotional expression causes empathic emotions, whereas in the second version features of the target's emotional situation cause empathic emotions.

Direct association. With direct association, when the observer sees the target's emotional expression or situation, it reminds the observer of her own past emotional experiences. Then the observer feels the emotions that she felt during the original experiences. For example, if you see a stray dog attack another person, then you might remember a time when an animal attacked you. You reexperience the original fear from the memory.

Mediated association and role-taking. In contrast to the first three mechanisms, Hoffman's fourth and fifth mechanisms do not require direct perception of the target's emotional experience. For this reason, they are considered to involve more advanced cognitive abilities.

Mediated association. With mediated association, observers learn about targets' emotional experiences through words. Then observers imagine the targets' emotional expressions and mimic them, remember their own past experiences and feel the emotions from the memories, or both. Mediated association is similar to mimicry or direct association but the observer does not perceive the target's experience directly. For example, if someone else tells you that a dog attacked him earlier in the day, then you might remember a time when a dog attacked you and feel afraid because of the memory.

Role-taking. Role-taking occurs when observers either imagine themselves in the target's situation or imagine how the target feels. As with mediated association, observers might mimic imagined emotional expressions or might feel emotions by using their own emotional memories to imagine the target's situation. Nevertheless, role-taking is more effortful than mediated association. Role-taking involves active attempts to understand a target by bringing emotional memories or imagined emotional expressions to mind, whereas mediated association involves a more automatic activation of emotional memories or imagery. For example, if you learn that someone else was attacked by a dog, then you might try to actively imagine how she felt, recall a time when a dog attacked you, and feel afraid from the memory.

Hoffman discusses mimicry, direct association, mediated association, and role-taking as separate mechanisms for empathy even though they largely overlap. For all of them, the observer's vicarious emotional experience comes from imitating emotional expressions or recalling emotional memories. The differences are whether the observer must observe the target's emotion or situation directly (mimicry and direct association) or can infer them indirectly (mediated association and role-taking) and whether the observer puts in some effort to empathize (role-taking) or not (the other four).

In his description of role-taking, Hoffman (2000) also states that observers can imagine the target's emotional situation so vividly that they feel the same emotion. This is the only case in which Hoffman says that empathy might not rely on prior experience (conditioning history or own emotional memories) or a context-free biological mechanism (mimicry) and it begins to sound like normal emotional experience. If an observer can feel the emotion by vividly *imagining* the target's situation, then why couldn't the observer feel the emotion by *directly perceiving* the target's situation? Are the memory-based and mimicry mechanisms necessary for empathy?

Mirror Neurons and the Perception-Action Model

Since the 2000s, empathy research has mostly become brain research. The discovery of mirror neurons in the 1990s was a major driving force that moved contemporary empathy research into the domain of neuroscience. Mirror neurons discharge during both the firsthand performance and the secondhand observation of goal-oriented action. These neurons were first discovered in the F5 region of the premotor cortex in macaque monkeys (di Pellegrino, Fadiga, Fogassi, Gallese, & Rizzolatti, 1992; Rizzolatti, Fadiga, Gallese, & Fogassi, 1996). For example, mirror neurons discharged both when a monkey grasped food and also when it watched an experimenter grasp food. This was an important breakthrough because it suggested a mechanism by which two seemingly different systems, the perceptual system and the motor system, could be linked. Some researchers have argued that mirror neurons help organisms understand and imitate others' actions (Gallese, 2003; Gallese, Keysers, & Rizzolatti, 2004; Rizzolatti et al., 1996; Rizzolatti, Fogassi, & Gallese, 2001), although the role of mirror neurons in understanding action has been a topic of some debate (Gallese, Gernsbacher, Heyes, Hickok, & Iacoboni, 2011; Hickok, 2009; Jacob, 2008; Kosonogov, 2012).

Some have argued that mirror neurons are responsible for all vicarious experiences, including vicarious experiences of action, sensation, and emotion (Gallese, 2003; Gallese et al., 2004; Iacoboni, 2009; Keysers & Gazzola, 2009). For example, Gallese's "shared manifold hypothesis," proposes that, within a mirror neuron framework, empathy should "accommodate and account for *all* different aspects of expressive behavior . . . to unify under the same account the multiple aspects and possible levels of description of intersubjective relations" (Gallese, 2003, pp. 176–177). The idea is that whenever an observer perceives a target's emotion,

the neurons of the observer that are responsible for the firsthand experience of that emotion automatically discharge. As a result, the observer feels the emotion and experiences empathy. For example, if you see a stray dog attack another person and you perceive that the person is scared, then the neurons that are involved in your own experiences of fear automatically discharge and you feel scared too. As with understanding action, the role of mirror neurons in empathy has been a topic of debate (Baird, Scheffer, & Wilson, 2011; Blair, 2011; Decety, 2010; Gallese et al., 2011).

Similar to the mirror neuron account is Preston and de Waal's (2002) perception-action model of empathy (see also Preston, 2007). Like mirror neurons, perception-action models were originally developed to explain how perceptual information turns into motor action. According to the common-coding account (Prinz, 1997), perception and action share some underlying representation or process so that perceptual information automatically prepares action without the need for any intervening cognitive process. Preston and de Waal applied the same idea to empathy and proposed that "attended perception of the [target's] state automatically activates the [observer's] representations of the state, situation, and [target], and . . . activation of these representations automatically primes or generates the associated autonomic and somatic responses, unless inhibited" (p. 4). These emotional representations might involve mirror neurons, but mirror neurons are not required. The representations can have other components such as episodic memories or autonomic arousal. So if you see a stray dog attack another person who looks scared, then the neurons, physiological changes, and episodic memories that are part of your representation of fear automatically activate and cause you to feel scared too.

The mirror neuron and perception-action theories of empathy are something like a combination of Hoffman's mimicry and association mechanisms. Instead of mimicking bodily expressions of emotion, mirror neurons skip over the body and mimic brain activity. Instead of the perception of a target's state or situation activating the observer's emotional memories, the perception of the target's state activates the observer's representation of the same state (which might include emotional memories).

The majority of the neuroscientific experiments on empathy examine vicarious experiences of physical pain rather than vicarious experiences of emotion (e.g., Fan & Han, 2008; Jackson, Meltzoff, & Decety, 2005; Lamm, Batson, & Decety, 2007a; Lamm, Meltzoff, & Decety, 2010; Lamm, Nusbaum, Meltzoff, & Decety, 2007b; Perry, Bentin, Bartal, Lamm, & Decety, 2010). For example, in one fMRI study (Jackson et al., 2005), subjects had more activity in two brain regions that are active during firsthand experiences of pain, the anterior insula (AI) and the anterior cingulate cortex (ACC), when they viewed photographs of hands and feet in painful situations (e.g., being cut with a knife) than when they viewed photographs of hands and feet in nonpainful situations (e.g., next to a knife). Activity in the AI or ACC has also been found for firsthand and vicarious disgust (Phillips et al., 1997; Wicker et al., 2003) and firsthand and vicarious social exclusion (Eisenberger, Lieberman, & Williams, 2003; Masten, Morelli, & Eisenberger, 2011; Meyer et al., 2013). Research on neural overlap for firsthand and empathic experiences of common emotions such as happiness, sadness, embarrassment, and anger is more scarce, though some studies have examined the AI and ACC as components of an automatic empathy system (Blair, Morris, Frith, Perrett, & Dolan, 1999; Bruneau, Pluta, & Saxe, 2012; de Greck et al., 2012; Krach et al., 2011; Morelli & Lieberman, 2013). Although research finding neural overlap for firsthand and vicarious experiences of emotions would be consistent with mirror neuron and perception-action theories of empathy, we do not think it would rule out other theories because they predict the same thing.

The original mirror neuron and common-coding approaches to perceptual information and motor action were exciting because they contradicted the common belief that perception and action involve separate systems that can only communicate through some intervening process. Watching someone reach for a doorknob does not require you to move; reaching to open a door does. Even in the case of vicarious physical pain, watching someone stub her toe does not require your foot to touch the wall; stubbing your own toe does. The problem in perception and action has been how to connect two apparently different systems. If there are overlapping representations for perception and motor action, then the idea that the two systems are separate comes into question. The evidence supports a common-coding theory over a separate representations theory.

Mirror neuron and common-coding approaches are less remarkable when they are applied to empathy. *All* prior theories of empathy assume that the same sorrow, joy, or embarrassment is active during firsthand and empathic experiences. No one thought that empathic emotions involved separate representations, so there was no comparable underlying assumption for the newer theories to contradict. The problem in empathy has been how a single emotion is triggered by different kinds of events—one's own experiences and others' experiences—and not how to connect two different systems for firsthand and empathic emotions. Mirror neuron and perception-action theories of empathy argue for common representations of firsthand and empathic emotions, but so do all other theories of empathy. If there are overlapping representations, whether they involve neural activity or something else, then this is not evidence that favors mirror neuron or perception-action theories of empathy over other theories. It is evidence that empathy exists.

Critical Review of Current Theories of Empathy

We assume that the empirical evidence makes the best case for each empathy mechanism and discuss how they answer two general questions:

> How does an observer feel the same emotion that a target is feeling when the observer is not in the same situation?
>
> When does an observer's emotional response to a target's emotional experience not match what the target is feeling?

Theories of empathy are designed to answer the first question—how does empathy happen? They are not designed to answer the second question—when does empathy not happen, whether this involves an unemotional response or an emotional response that does not match what the target feels? Yet we believe that the second question is important, and intimately related to the first. When an observer does not feel what a target feels it is sometimes called an "empathy failure" (Cikara, Bruneau, & Saxe, 2011). The

idea of "empathy failures" implies that matching is the default outcome of an empathy-specific process. Instead, the same process might produce both matching and nonmatching, empathic and nonempathic, vicarious emotions. Matching might not be an inherent feature of the process and empathy might not be very different from other vicarious emotional experiences.

Consider our emotional reactions to horror films. You can feel scared for characters who know that a murderer is stalking them in their home, but you can also feel scared for characters who are clueless about the murderer's presence. Is the cause of your fear very different in these two cases? Does a new empathy-generating process take over from some other process once the clueless characters notice the murderer and become scared too?

The scenario in which the characters feel scared counts as empathy because you feel what they feel. The other scenario does not count as empathy because you do not feel what they feel. One way to resolve the discrepancy is to claim that different processes produce matching and nonmatching vicarious emotions. This argument would substantially limit the explanatory value of the empathy-generating process and it seems unlikely. A better option is to seek a process that can explain both scenarios.

Explaining Emotion Matching

Each of the seven current processes proposed for empathy can explain emotion matching to some extent. Their limits with respect to emotion matching are based on whether or not they require the observer to have some relevant past experience or to perceive the target's emotional state or situation directly.

Necessity of the observer's past experience. If empathy depends on the observer's past experience, then an observer can only feel vicarious emotions for events like those that he or she has experienced. Classical conditioning, direct and indirect association, role-taking, and the perception-action model rely on the observer's past experience. With classical conditioning, the observer must have a conditioning history for any empathic emotion. With direct association and indirect association, the observer must have relevant emotional memories that can come to mind. The same applies to role-taking unless the observer mimics imagined emotional expressions of the target. The perception-action model is similar, though the observer's representation of the target's state could be activated without a specific emotional memory if the observer has experienced that state in the past. In contrast, mimicry and mirror neurons do not rely on the observer's past experience. The observer can mimic or mirror any expressed emotion.

Past experience most likely contributes to empathy when it comes to mind. Indeed, emotion researchers sometimes ask subjects to recall previous emotional experiences to make them feel specific emotions (e.g., Lerner & Keltner, 2001). Nevertheless, it seems unlikely that it is necessary for empathy. Otherwise children wouldn't be frightened by ghost stories involving other boys and girls and it would be hard to explain the power of literature in general. You would find it dull to hear about how a friend proposed to the love of his life if you have never been engaged. The importance of the observer's past experiences for many of the empathy mechanisms highlights the disconnection between theories of empathy and theories of emotion. The observer's emotional experiences must begin somewhere. Firsthand emotions do not require past experience, so why should vicarious emotions require it? Why should vicarious emotions not begin with the same process as any other emotion?

Direct or indirect perception. All theories of empathy require the observer to perceive the target's emotional state or situation. Some of the processes require the observer to view the target's emotional expression or situation directly (direct perception) and others allow the observer to imagine the target's emotional expression or situation or to learn about them through language (indirect perception). Classical conditioning, mimicry, and mirror neurons require direct perception. With classical conditioning, conditioned emotional responses only occur when the learned cues (the conditioned stimuli) are present. With mimicry and mirror neurons, the observer must see the target to imitate or neurally match the target (unless the observer can mimic or mirror expressions that she imagines). By definition, direct association means that the observer's direct perception of the target's state or situation activates associated emotional memories. In contrast, mediated association and role-taking allow indirect perception through language or imagination. The perception-action model allows both direct perception and indirect perception of another's state (Preston, 2007). The observer can perceive the target's state by directly observing behavior such as facial expressions, by listening to the target say "I feel sad," by indirectly inferring the target's state from assumptions about the target's situation (e.g., "needles are painful," Y. Cheng et al., 2007), or by imagining the target's emotional state.

No process that requires direct perception of a target's emotional state or expression can explain how an observer can feel something that the target does not feel (unless one wants to argue that all nonmatching vicarious emotions are based on incorrect perceptions of what the target feels). However, processes that allow the perception of a target's situation rather than the target's state to cause the empathic emotions can begin to explain nonmatching emotional responses.

Explaining Non-Matching

Nonmatching can mean one of two things. First, it can mean that the observer reacts unemotionally to a target's emotional experience. Here the question is whether the empathy-generating mechanism was not operating or it was operating but it produced an unemotional state. Current empathy theories handle these "empathy failures" rather well. Second, it can mean that an observer feels something on behalf of the target that the target does not feel, such as feeling embarrassed for someone who shows no sign of embarrassment. In this case the question is whether the empathy-generating mechanism can produce vicarious emotions that differ from the target's emotions. This is where current empathy theories lose their explanatory power.

Unemotional observer. Unemotional observer reactions pose a challenge to any claim that empathy happens automatically. If the process is automatic, then why do we not empathize with everyone all of the time?

One kind of explanation offered by empathy theorists is that empathy occurs automatically, but it requires some minimal conditions. One condition that applies to every mechanism is that the observer must attend to the target's state or situation. If the observer never notices the target, or intentionally diverts attention away from the target, then there will be no empathy (Preston,

2007). For example, people might empathize with ingroup members more than with outgroup members (Eres & Molenberghs, 2013) because they attend more to others with whom they are interdependent (Preston, 2007). Another condition, as discussed previously, is that all of the mechanisms aside from mimicry and mirror neurons require the observer to have some past experience that is relevant to the target's state or situation. If the observer lacks relevant experience, then these processes cannot operate and there will be no empathy.

A second kind of explanation is that empathy occurs automatically, but the observer can regulate and inhibit it. For example, physicians and acupuncture practitioners do not show empathic neural responses to needle pricks (Y. Cheng et al., 2007; Decety, Yang, & Cheng, 2010). Presumably, physicians and acupuncture practitioners have more experience than others with regulating their vicarious pain responses because they must inhibit their empathic reactions to their patients. There are two perspectives on when regulation occurs: the "late appraisal model" and the "early appraisal model" (de Vignemont & Singer, 2006).[5] A late appraisal model means that an observer begins to automatically match a target's emotion, but then can regulate and inhibit the empathic emotion. This seems to be the dominant perspective in empathy research (e.g., Decety et al., 2010; Eisenberg et al., 1994; Fan & Han, 2008). In contrast, an early appraisal model means that the way an observer initially interprets a target's situation determines whether neural matching ever begins. A late appraisal model can help automatic matching theories explain why an observer would feel nothing for a target. Even if the observer is attentive and has relevant experience, the observer might inhibit the empathic emotion after matching begins. But a late appraisal model cannot explain why an observer would feel something for a target who does not seem to feel anything, or who seems to feel something else. In contrast, an early appraisal model allows the observer to experience any vicarious emotion because the observer's emotion is not tied to the target's emotional state.

Emotional observer. Nonmatching responses are a bigger problem for empathy theories when the observer feels something that the target doesn't feel. The observer might feel embarrassed for a target who shows no sign of embarrassment (Krach et al., 2011) or feel angry for a target who is sad (Hoffman, 2000, p. 98). Classical conditioning can account for these cases, but only if the observer's conditioned response to the target's emotion expression or situation differs from the target's response. For example, this could happen if others' positive emotional expressions signal that they have won the prize that you had been hoping for (Englis, Vaughan, & Lanzetta, 1982). Mimicry falls apart because the observer only mimics observed emotions. Similarly, mirror neuron and perception-action approaches require the observer to perceive the target's state and they do not explain vicarious emotions that do not match that state. Direct perception, mediated perception, and role-taking allow the observer to recall experiences that have emotional content that differs from the target's expressed emotion, though it may be difficult to predict when memories with matching or nonmatching emotional content will come to mind.

Hoffman (2000) suggests that, at least in the cases of anger, sympathy, and guilt, the empathy-generating processes produce emotion matching first and then the observer transforms the empathic response by making attributions of responsibility for the target's situation. This second step of attribution goes beyond his five empathy-generating mechanisms. It begins to look like a late appraisal model of empathy where the observer's interpretation of the target's situation determines what the observer ultimately feels. Yet that first step of matching is only necessary if we reject an early appraisal model and insist that the target's state is what causes the observer's emotion.

Summary

Each of the seven processes proposed by empathy theorists explains how an observer feels what a target feels under certain circumstances: when the observer either has some relevant past experience, or directly perceives the target's state or situation, or both. Consequently, the observer has an unemotional response to the target when the observer lacks relevant experience or does not attend to (and therefore does not directly perceive) the target's emotional experience. In addition, the observer can regulate and inhibit an emotional response to the target. None of these three explanations apply when the observer reacts to the target's emotional experience with an emotion that is different from what the target feels. Although this second case of nonmatching receives little attention in the empathy literature, some of the processes could account for it if the observer's conditioning history or emotional memory involves an emotional response that is different from what the target feels. Other mechanisms offer no explanation.

Appraisal Theory of Emotion

Many of the current empathy mechanisms are limited in their ability to explain nonmatching because they focus on the target's emotional *state* as the primary cause of empathy. If the target displays no emotion, then the observer will feel no vicarious emotion. Adam Smith (1759/2002) had a different idea in his *Theory of Moral Sentiments*:

> Even our sympathy with the grief or joy of another, before we are informed of the cause of either, is always extremely imperfect.[6] General lamentations, which express nothing but the anguish of the sufferer, create rather a curiosity to inquire into his situation, along with some disposition to sympathize with him, than any actual sympathy that is very sensible. The first question which we ask is, What has befallen you? Till this be answered, though we are uneasy both from the vague idea of his misfortune, and still more from torturing ourselves with conjectures about what it may be, yet our fellow-feeling is not very considerable. *Sympathy, therefore, does not arise so much from the view of the passion, as from that of the situation which excites it* [emphasis added] (pp. 14–15).

In other words, Smith argues that empathic emotions are not based on how we perceive the other's state, but rather they are based on how we interpret the other's situation. If this is true, then nonmatching emotional responses are no longer a problem—the observer's emotion is not limited to what the target feels, but instead it can be any emotion that the observer's interpretation of

[5] Although the term appraisal has appeared in the empathy literature, it has not been used to connect empathy theories to appraisal theories of emotion, as we do in this article.

[6] The word empathy did not exist in the English language during Smith's time, so he uses the term sympathy to refer to "fellow-feeling"—what we mean by empathy.

the target's situation can produce. Smith's emphasis on how we interpret others' situations fits nicely with appraisal theories of emotion, which we can use to connect empathy to emotion theory.

Just as Smith argued that our empathic emotions are based on how we interpret another's situation, appraisal theories argue that firsthand emotions are based on how we interpret our own situations (Ellsworth & Scherer, 2003; Lazarus, 1991; Roseman, Spindel, & Jose, 1990; Scherer, 1984; Siemer, Mauss, & Gross, 2007; C. A. Smith & Ellsworth, 1985). Appraisal theories make three general claims about emotion. First, emotions are based on appraisals of the situation. Second, the boundary between qualitatively different emotions is continuous. Third, emotions have universal patterns of appraisal.

Emotions Are Based on Appraisals of the Situation

Appraisal theories argue that emotional experience is based on evaluative interpretations of the situation (appraisals). In some of their early research, appraisal theorists tried to find combinations of appraisals that could map out typical emotional experience (Scherer, 1984; C. A. Smith & Ellsworth, 1985). As one example, C. A. Smith and Ellsworth (1985) found that subjects differentiated 15 emotion labels (e.g., happiness, pride, anger, guilt) with six appraisals. First, there was the appraisal of how pleasant the situation was (pleasantness). Second, there was the appraisal of how much effort was needed to deal with the situation (anticipated effort). Third, there was the appraisal of how much the situation was out of anyone's control (situational control). Fourth was the appraisal of how much oneself or another person was responsible for the situation (self-other agency). Fifth was the appraisal of how much their attention was drawn to the situation rather than diverted away from the situation (attentional activity), which is akin to the appraisal of novelty in other appraisal models (e.g., Scherer, 2013). Finally, there was the appraisal of certainty about what was happening in the situation or what would happen next (certainty; for a review of appraisal theories and other proposed dimensions of appraisal, see Ellsworth & Scherer, 2003). Smith and Ellsworth (1985) initially proposed appraisal dimensions for legitimacy and perceived obstacle as well, but legitimacy was subsumed by pleasantness, and perceived obstacle was subsumed by pleasantness and anticipated effort. The factor on which effort and perceived obstacle loaded most strongly is akin to the appraisal of goal conduciveness in other appraisal models (e.g., Lazarus, 1991; Scherer, 2013).

Figure 1 displays a schematic plot of where six of the emotions fell along four of the appraisal dimensions. Some emotions had largely overlapping patterns of appraisal—sadness and fear differed primarily on the appraisal of certainty, whereas happiness and challenge differed only on the appraisal of anticipated effort. So if two patients waiting to hear the results of their cancer screening tests feel sad and scared, an appraisal theorist would expect the sad patient to feel more convinced that the test will be positive (certainty appraisal) than the scared patient, though both would find it unpleasant (pleasantness appraisal) and out of anyone's control (situational control appraisal); if two people working on a puzzle feel happy and challenged, an appraisal theorist would expect the latter to find the puzzle to be more difficult (anticipated effort appraisal) than the former, though both would find it enjoyable. Other emotions had very little overlap—pride and fear differed on pleasantness, anticipated effort, certainty, situational control, and self-other responsibility. This can be seen in Figure 1, where pride and fear appear on opposite sides of each appraisal dimension.

The way that people appraise situations along the appraisal dimensions can vary continuously. One does not need to have either full control or no control in a situation, but there can be degrees of control. The outcome of a situation does not need to be either completely certain or completely uncertain, but there can be degrees of certainty. The facts that emotional experience is based on appraisals and that appraisals vary continuously brings us to the second claim of appraisal theories: the boundary between qualitatively different emotions is continuous.

Boundaries Between Emotions Are Continuous

The common sense view of emotions is that they are discrete states that are governed by separate psychobiological systems. You feel fear because there is a dedicated fear system that turns on. You feel joy when a dedicated joy system turns on. Your anger ends when the anger system turns off. In the emotion literature, this is called a categorical or basic emotions theory (Ekman, 1992; Izard, 2007). In contrast, appraisal theories argue that the boundaries between different emotions are continuous. There are no separate emotion systems. Because our appraisals of situations occur along a continuum and what we feel is based on our appraisals, so too our emotional experiences occur along a continuum. When we say that we feel angry, we are really describing a variety of emotional experiences that shade into each other with no clear boundaries. There can be many different kinds of anger that vary somewhat in the pattern of appraisal, but that are similar enough for us to use the same word to describe them. Even the boundary between experiences that we call anger and experiences that we call fear or any

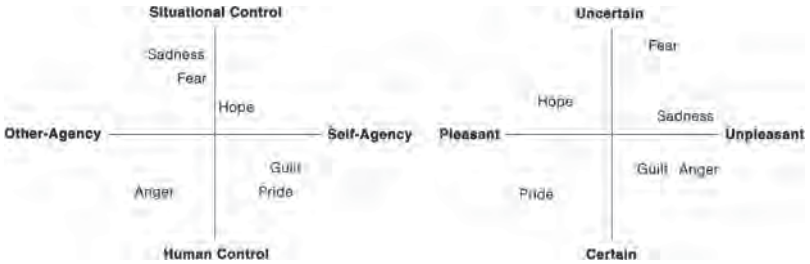

Figure 1. Appraisal patterns of emotions. This schematic plot of six emotions along four appraisal dimensions is based on results from C. A. Smith and Ellsworth (1985).

other emotion is fuzzy. From an appraisal theory perspective, we use emotion labels such as "anger," "fear," "gratitude," and "hope" because they describe common feelings that go with common ways that we appraise situations, not because they have separate emotion systems (Scherer, 1984, 1994).

From a basic emotions perspective, the question for empathy research to answer is how seeing another person's emotion system turned on (e.g., that person's sad system) activates one's own system for the same emotion (one's own sad system). From an appraisal theory perspective, this is the wrong question to ask because there are no distinct emotion systems. Instead, the question to ask is how appraisals of the situation contribute to both firsthand and vicarious emotions. We believe that an answer to this question can be found in a third claim of appraisal theories: that emotions have universal patterns of appraisal.

Emotions Have Universal Patterns of Appraisal

Appraisal theories claim that any two people who appraise situations in the same way, regardless of whether they appraise the same situation or different situations, will feel the same thing (Scherer, 1997). This is the way that emotions are universal. So far appraisal theorists have only discussed the universality of appraisals when different people react to situations that happen to them personally. Appraisal theorists have not said much about feeling emotions for someone else, either the same or different emotions. Nevertheless, we think that the claim of universal patterns of appraisal is the way to bridge emotion theory and empathy theory—an observer who appraises a target's situation in the same way that the target appraises it will feel the same emotion as the target.

An Appraisal Theory of Empathy

We propose an appraisal theory of empathy based on appraisal theories of emotion. Although others have discussed appraisals in the context of empathy (Omdahl, 1995), the implications of appraisal theory for empathy are missing from the peer-reviewed literature. When appraisals are mentioned by empathy theorists, they are treated as moderators that change or eliminate empathy (Lamm et al., 2007a; Lamm et al., 2007b; Preston & Hofelich, 2012) A central element of an appraisal theory of empathy is that an observer's appraisal of a target's situation crucially determines the observer's vicarious emotional experiences, including empathy.

According to the theory, empathy is possible whenever an observer appraises a target's situation. If the observer appraises the target's situation the same way as the target, then empathy occurs. If the observer appraises the target's situation differently, then a different emotional experience occurs. Empathy is not a special process. Instead, it is a part of normal emotion processes.

The Relationship Between Empathy, Vicarious Emotions, and Firsthand Emotions

The phenomenon that empathy researchers want to explain is emotion matching. Some theorists have found it useful to identify empathy as the process that produces emotion matching rather than the outcome itself (Hoffman, 2000; Preston & de Waal, 2002). This approach works well if one assumes that emotion matching requires a unique process. In contrast, in an appraisal theory of empathy, empathy is just one possible outcome of a general emotion process. What distinguishes empathy from other emotional experiences? Empathy occurs when an observer appraises a target's situation and appraises it in the same way as the target.

Empathy and other vicarious emotional experiences. How does empathy relate to nonmatching vicarious emotions, such as feeling scared for someone who is sad? In an appraisal theory of empathy, all vicarious emotions occur when an observer appraises a target's situation. The difference is that with empathy the observer's appraisal and the target's appraisal match and with other vicarious emotional experiences they do not.

Imagine that your friend got sick following an international vacation that the two of you took together. You are waiting with your friend in the hospital to hear the results of a test for malaria. Both you and your friend think that a positive test result would be awful (low pleasantness appraisal) and that your friend was extremely unlucky (high situational control appraisal). Your friend feels fairly sure that the test will come back positive (moderate certainty appraisal) and feels sad. If you also feel confident that the test will be positive, then you will feel sad with your friend. We would call this empathy because you feel what your friend feels. If, however, you feel that you have no idea what the test result will be (low certainty appraisal), then you will feel scared for your friend. We would call this a nonmatching vicarious emotion because it is not what your friend feels. The only difference is whether you have appraised the situation in the same way as your friend or not.

If we could quantify how certain you are about the negative outcome, then would your sadness become fear—would your empathy become a nonmatching vicarious emotion—when you are 70% certain? What about 60% certain? Or would it have to be as low as 50% certain? What if you go back and forth between feeling certain and uncertain about the test result while you wait with your friend? You would waver between empathy (sadness in this case) and vicarious fear. The degree to which your appraisals match—and to which your emotional experience is empathic and not just vicarious—is continuous. There is no distinct boundary between empathic and nonmatching vicarious emotions, just as there is no distinct boundary between sadness and fear. You might experience multiple vicarious emotions as your appraisal of the other's situation unfolds.

Vicarious emotions and firsthand emotions. How do empathy and other vicarious emotional experiences relate to firsthand emotions? From an appraisal theory perspective, all emotions are part of the same appraisal process. The difference between firsthand and vicarious emotions is whether observers appraise something that happens to themselves or something that happens to someone else.

Imagine again that you are waiting with your friend in the hospital. As you wait with your friend, you begin to wonder if you should also get a malaria test. You begin to entertain the real possibility that you too have malaria but you feel terribly uncertain about it. Now your appraisals are like the example of vicarious fear above, but you are appraising your own situation and not your friend's situation. We would call this a firsthand, nonvicarious emotion.

The line between firsthand emotions and vicarious emotions is not defined by whether or not the target's situation has personal consequences for the observer, but by what the observer is ap-

praising in the moment. You may simultaneously fear that your friend has malaria and that you have malaria, or you may feel each fear in turn as your attention shifts between your friend and yourself.

Several theoretical perspectives on empathy emphasize that the observer must maintain a sense of self as distinct from the target for emotion matching to become true empathy and not to become a firsthand emotional experience (Decety & Chaminade, 2003; Eisenberg et al., 1991; Singer & Lamm, 2009). The self-other distinction is important for theories where the target's emotional state automatically causes the same emotion in the observer. The idea is that if an observer automatically matches a target's emotion, then she might become confused and think that something is happening to her. Therefore, the observer must maintain a self-other distinction in order to remember that the cause of her emotion is something that happened to the target and not something that happened to her. If she maintains this self-other distinction, then she experiences empathy; otherwise she feels some firsthand emotion. From the perspective of an appraisal theory of empathy, observers already know whether they are appraising something that has happened to them or to the target, and in some situations they appraise both. Observers are aware of what caused their emotions and there is not the same risk of confusion that comes from context-free automatic matching processes.

In summary, the differences between firsthand emotions, empathy, and other vicarious emotional experiences have to do with what one appraises (another's situation or one's own situation) and how one appraises it (in the same way as the other or differently from the other). What they have in common is that they are all a part of the same general emotion process. Empathy is one possible outcome of the process. Alternative outcomes are common. We discuss this point next.

Empathy Is One Possible Outcome of the Appraisal Process

It is sometimes called an empathy failure when an observer does not match a target's emotions, as though empathy is the default outcome of encountering another's emotional experience and a lack of empathy means that something has gone wrong (Cikara et al., 2011). In contrast, the appraisal theory perspective treats empathy as a special case of the observer's appraisal process. Alternative outcomes that are discussed in the empathy literature such as empathic anger, personal distress, and schadenfreude are also special cases of the same appraisal process.

Imagine that your coworker has just learned that she will be laid off. Your coworker finds this to be an unpleasant event (low pleasantness appraisal) that it is likely to happen (moderate certainty appraisal). Your coworker believes that the general state of the economy made it necessary for the company to cut costs and so she lost her job due to bad circumstances (a high situational control appraisal). An appraisal theorist would predict that appraisals of low pleasantness, moderate certainty, and high situational control would mean that your coworker feels sad about losing her job. You also appraise her situation to be unpleasant, certain, and caused by bad circumstances. You feel sad for your coworker. This is prototypical empathy.

Now imagine a similar scenario, but you know something that your coworker does not know. You know that the boss dislikes her and has wanted to find an excuse to fire her for a long time. You appraise the situation differently—like your coworker, you still find it to be unpleasant and certain, but you believe the boss is lying about the bad economic circumstances and you blame the boss for your coworker's job loss (a low situational control appraisal and high other-agency appraisal). An appraisal theorist would predict that the appraisal of low situational control and high other-agency would make you feel angry. You feel angry for your coworker but your coworker feels sad. This experience departs from the empathy prototype because the appraisals differ. Some call this empathic anger, even though the target is not angry (Vitaglione & Barnett, 2003).

Perhaps instead your coworker's situation reminds you that the boss has asked to meet with you later. You suspect that you will be laid off next and you prepare yourself to cope with the loss of your job. You feel that this is an unpleasant event (low pleasantness appraisal), you feel somewhat confident that it will happen (moderate certainty appraisal), and you blame the bad economy (high situational control appraisal). You are no longer paying attention to your coworker's situation, even though your appraisal pattern matches hers and you also feel sad. This experience departs from the empathy prototype because you are appraising your own situation rather than your coworker's situation, even though your coworker's situation contributed to your emotional state and your appraisal patterns match. This is personal distress (Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Eisenberg, Fabes, Schaller, & Miller, 1989; Singer & Lamm, 2009).

Finally, the person who gets laid off might not be just any coworker, but someone who you think is a jerk. You might not appraise the situation as a bad thing at all, but as a well-deserved punishment (high pleasantness) that will definitely happen (high certainty) and that is your coworker's own fault (low situational control/high other-agency). You feel happy that justice has been done. This experience departs from the empathy prototype because your appraisal differs (more radically than in the previous example). This is schadenfreude (Cikara et al., 2011; R. H. Smith, Powell, Combs, & Schurtz, 2009).

Each of these cases involves a different emotional outcome, but each comes from the same appraisal process. What differs is what you appraise (your own situation or another's situation) and how you appraise it (in the same way as or in a different way from the other person). There are no empathy failures because empathy is not the default outcome. The same appraisal process is involved in all emotional experience, not just empathy.

We have now presented the basic ideas behind an appraisal theory of empathy and vicarious emotions. We evaluated other theories of empathy based on their ability to explain matching and nonmatching emotional responses to others' emotional experiences. In order for the appraisal theory of empathy to be useful, it must address the two nonmatching problems.

Appraisal and the Non-Matching, Unemotional Observer

From an appraisal theory perspective, an observer should feel emotional for a target as long as the observer appraises the target's situation. If the target's situation does not attract the observer's attention, which involves appraisals of novelty, or if the observer

lacks enough information to appraise the target's situation, then the observer will react relatively unemotionally.

Novelty. Emotional episodes begin when something changes. In appraisal theories this involves the appraisal of novelty. Although the focus of appraisal theories has been on novel events that happen to oneself, the "something new" could be someone else's emotional expression, such as when a person near you begins to furrow her brow, clench her teeth, and ball her fists. Or it could be someone else's situation, such as when you hear on the news that an apartment caught fire and dozens of residents are now without a home.

If the observer is too distracted or if the event is too subtle, then she is unlikely to detect that something new has happened and feel emotional for a target. As with other empathy theories, the observer must notice the target's emotion expression or situation. If the observer is occupied with work, watching TV, daydreaming, in the middle of a conversation with someone else, or engrossed in some other emotional experience, then she is unlikely to react emotionally to the target's situation. If the target inhibits his emotional expression, then the observer might be less likely to notice, appraise what has happened, and feel emotional for the target.

The target's emotion expression or situation must truly be novel from the observer's point of view. If the target is always in a foul mood, then a scowl is nothing new. If the observer encounters situations like the target's on a routine basis, then even if it is novel for the target, the observer might not react emotionally. Perhaps this is one reason why doctors have weak vicarious responses to images of physical pain (Y. Cheng et al., 2007; Decety et al., 2010)—when you treat patients every day, the novelty wears off.

Lack of information. Once the target catches the observer's attention, the observer must have enough information about the target's situation to make some relevant appraisals. If the observer lacks sufficient information about the target's situation, then he might feel little more than confusion.

The discussion of direct and indirect perception is relevant here. Observers who perceive targets' situations directly might often have more information about what happened compared to those who learn about it indirectly. If they learn about what happened to the target through language or imagination, they might have a harder time understanding the situation well enough to make an appraisal. Emotional memories might not just make an observer emotional because of the past personal experience, but they might also fill in some gaps in the observer's appraisal of the target's situation. So if a target discusses her divorce, an observer might use his own experience of divorce to better understand what exactly the target is going through. His appraisal of the target's situation is supplemented by his own experience. This might change if the target points out differences in their experiences or if the informational value of the observer's own experience is otherwise called into question. If past experiences help observers appraise targets' situations, then this might be one reason why people are more sympathetic toward each other when they have had similar experiences (Barnett, Tetreault, & Masbad, 1987; Hodges, Kiel, Kramer, Veach, & Villanueva, 2010)—those who lack the experience are not sure how to appraise it.

The information that the observer has does not need to be complete in order for him to feel something for the target. It only must be enough to make him feel confident in his appraisal (for a similar argument about firsthand emotions, see Tong, Teo, & Chia, 2014). In many cases of vicarious emotions, the information that the observer has about the target's situation is likely to be incomplete. As a result, the observer's emotions will differ from the target's emotions to the extent that the different information leads to different appraisals (and we return to this point later).

Empathy theorists generally emphasize perception of another's emotional state rather than situation as the primary cause of empathic emotions. Although an appraisal theory of empathy and vicarious emotions emphasizes perception of another's situation, emotional expressions also provide information about the situation. Indeed, observers use targets' emotional expressions to make inferences about both the observers' own situations (Parkinson, 2011; Parkinson & Simons, 2009) and about how the targets evaluate their own situations (de Melo, Carnevale, Read, & Gratch, 2014; Hareli & Hess, 2010; Scherer & Grandjean, 2008; van Kleef, 2009; van Kleef et al., 2011). Most obviously, emotional expressions usually communicate whether something good or bad has happened. Expressions of emotions such as joy, fear, and sadness might be sufficient to trigger an observer's appraisals of pleasantness. For these emotions, an observer might trust the emotional expression of the target unless given a reason not to do so. For example, if the observer believes that the target is chronically anxious, then the observer might not believe that the target's fearful emotional expression is informative. Some emotions, such as anger, might require knowledge of the situation before they are vicariously experienced. There is too much risk in setting oneself against the object of the target's anger before knowing whether this third party actually did something wrong (A. Smith, 1759/2002).

We have discussed ways in which a lack of novelty or a lack of information could lead the observer to react relatively unemotionally. Another way that an observer might react "unemotionally" is when the observer appraises the target's situation as a neutral event rather than as something good or bad. This involves appraisals that contribute to the valence of the situation, and it brings us to the question of goals in emotion.

Valence. Next comes the problem of valence—is what happened good or bad? What makes it good or bad? To answer this question for firsthand emotions, many have emphasized that emotions are about personal goals or personal wellbeing (Frijda, 1988; Lazarus, 1991; Lazarus & C. A. Smith, 1988; Moors, 2010; C. A. Smith et al., 1993). If an event helps you achieve some personal goal, then it's good. If it gets in the way of a personal goal, then it's bad. Empathy becomes an anomaly because it seems to have little do with our own goals.

Some empathy theorists have dealt with this problem by proposing processes that link vicarious emotions to past emotional experiences that did involve personal goals (classical conditioning, direct and mediated association, role-taking, some aspects of perception-action models). Others have dealt with it by proposing processes that operate independently of the emotional context (mimicry, mirror neurons, some aspects of perception-action models), so that goals are irrelevant. Emotion theorists have dealt with it by remaining silent about vicarious emotions.

All appraisal theorists think that goals are important for emotion. This has led them to propose appraisals of goal relevance—the extent to which the situation impacts one's goals, needs, or other aspects of personal wellbeing—and goal congruence—the

extent to which the situation advances or obstructs these concerns (Lazarus, 1991; Roseman et al., 1990; Scherer, 2013; C. A. Smith & Ellsworth, 1985). Some appraisal theorists believe that all emotions are about personal goals or concerns (Frijda, 1988; Lazarus, 1991). These theorists sometimes call goal relevance and goal conduciveness "primary appraisals" because there can be no emotion without them (Lazarus, 1991). This means that what happens to someone else can only make us emotional if it affects our personal well-being, such as when it affects our own situation. If you learn that another person was rejected for a job that you applied to, then you've lost a competitor and have a better chance to get the job yourself. If the parents of a young child die, then the child has lost the people who take care of him.

From the perspective that all emotions are about personal well-being, emotions for others are a challenge. If what happens to someone else does not affect your own situation, then you should only feel emotions for the other person if you have made their wellbeing a personal goal. When something good happens to them, you should appraise it as goal-congruent and feel some pleasant emotion. When something bad happens to them, you should appraise it as goal-obstructive and feel some unpleasant emotion.

The strong claim that emotions are always about personal well-being does not just suggest that we should feel less emotional for strangers than for close others—it implies that we should not feel emotional at all. This does not seem to be the case. Some of the earliest experimental work on appraisal theory had American college students watch videos of men from an indigenous tribe in Australia who had the underside of their penises cut as part of a cultural tradition (Lazarus & Alfert, 1964; Speisman, Lazarus, Mordkoff, & Davison, 1964). It seems unlikely that the students either spontaneously adopted goals for the wellbeing of the men in the video or that they became concerned that the same thing would happen to them.

More likely, the American college students appraised the procedure as intrinsically unpleasant even though it was motivationally irrelevant. Some appraisal theorists have maintained a separation between appraisals of intrinsic pleasantness, the pleasantness of the situation in the absence of any salient motivation, and appraisals of goal congruence. Although intrinsic pleasantness and goal congruence jointly contribute to valence and determine whether a positive or negative emotion will be felt (Aue & Scherer, 2008, 2011), there is utility in separating them. First, goal congruence is inapplicable if the goal relevance of an event is low, whereas intrinsic pleasantness is still applicable. Second, goal congruence can qualify the impact of intrinsic pleasantness on the emotional experience. Muscle pain is likely to be a negative experience in the absence of a salient goal, but positive if it is interpreted as a sign of progress toward a fitness goal (as expressed in the saying, "no pain, no gain"). And the sound of one's favorite song is pleasant during leisure time, but potentially unpleasant during work time if it becomes distracting. This division allows motivational concerns to have a place when they are relevant without (a) making it impossible for people to feel emotions when they do not want anything in particular, such as feeling amused when you hear a funny joke, or (b) making it necessary to invent a goal, need, or other motivational construct to fit every emotional situation, such as deciding that the joke must be congruent with your need to be entertained.

Separating intrinsic pleasantness from motivational concerns makes it possible to feel emotions that are not about personal goals, but it raises other questions about emotions for others. Do we only appraise a situation as good or bad when we think it could happen to us? Or do we appraise it as good or bad without inserting ourselves into the situation? In other words, we might not think that things like being excluded from a group are unpleasant because they're happening to us, but we might just think they are unpleasant for anybody. This might be all that is needed to feel positive and negative vicarious emotions. Inserting oneself into the situation might actually counteract the vicarious emotions when, through social comparison, an observer feels either relieved because the target's misfortune has not happened to him or envious because the target's good fortune has not happened to him (Brandstätter, 2000; R. H. Smith, Eyre, Powell, & Kim, 2006).

The proposition that we appraise the pleasantness of situations without the need to personally experience them is speculative, but if it is true, then there are several ways that intrinsic pleasantness and motivational concerns could influence emotions for others.

First, if the target's situation is not relevant to the observer's goals, then the observer's appraisal of intrinsic pleasantness should drive the valence of the observer's vicarious emotions. If you learn that some poor children are starving, you appraise their hunger as intrinsically unpleasant, even though it does not affect you personally, and you feel some negative emotion for them. If you learn that these hungry children now have food, then you appraise this as intrinsically pleasant and feel some positive emotion for them.

Second, if the target's situation is relevant to the observer's goals but it does not affect whether or not the observer attains the goal, then the observer's salient goal could still influence her appraisal of how pleasant the target's situation is. Thirsty observers think that a lost hiker's worst peril is a lack of water, but cold observers think it's a lack of warm clothes (Van Boven & Loewenstein, 2003; O'Brien & Ellsworth, 2012). If you are hungry when you learn that some poor children are starving, you should appraise the situation as even more unpleasant than you would if you were sated. Your relief on their behalf should be greater when you learn that they now have food. If a target is hungry from religious fasting, then devout observers should appraise the situation as consistent with religious motives and nonreligious observers should appraise it as goal-irrelevant and intrinsically unpleasant.

Third, if the target's situation is relevant to the observer's motivational state and it advances or obstructs the observer's goals, then the observer's appraisals of goal-relevance and goal-congruence will drive the valence of the observer's emotion. In this case the emotion is likely to be firsthand and not vicarious. For example, if your competitor for a job withdraws his application and takes a position at another company, then you should appraise the situation as congruent with your goal to get the job and feel some positive emotion. If the competitor takes the job that you want, however, then you should appraise the situation as goal-obstructive and feel some negative emotion.

Fourth, if the observer has a goal about the wellbeing of the target, then the observer's appraisals of goal-congruence will drive valence. If your goal is for another person to be happy, as with loved ones, then you should appraise whatever contributes to the other person's wellbeing as goal-congruent and whatever detracts from the other person's wellbeing as goal-obstructive. If your goal

is for the target to suffer, as with a desire to punish someone who has acted unfairly (Singer et al., 2006), then you should appraise whatever contributes to the other person's wellbeing as goal-obstructive and whatever detracts from the other person's wellbeing as goal-congruent. In this case, the observer's emotional reaction can be connected more closely to the target's emotion than to the situation by itself. For example, you might not find losing a teddy bear to be a particularly troubling situation. However, if your child is crying because he cannot find his teddy bear, then you might find the situation unpleasant because it upsets your child, which is inconsistent with your goal to keep your child happy. Parkinson and Simons (2012) call this kind of experience, when we feel emotional about another's emotion, an interpersonal meta-emotion.

The general proposal from an appraisal theory of emotions for others is that an observer will feel an emotion for a target, regardless of whether or not the target feels emotional, as long as the target's situation catches the observer's attention, the observer has enough information to appraise the target's situation, and the observer appraises the target's situation as something good or bad. If the target's situation lacks novelty, the observer lacks information about the target's situation, or the observer appraises the target's situation as neutral rather than good or bad, then the observer will respond unemotionally, regardless of what the target feels. Given that the observer feels some emotion for the target, the next question is how to explain vicarious emotions that do not match what the target feels.

Appraisal and the Non-Matching, Emotional Observer

Sometimes observers describe themselves as "identifying with" targets. We suspect that when an observer identifies with a target, it means that he recognizes that he appraises the target's situation the same way as the target (and therefore empathizes). However, if the observer does not identify with the target, meaning that he appraises the target's situation differently from the target, then that does not mean that the observer responds unemotionally. Instead, the observer can feel a vicarious emotion that does not match what the target feels.

In an appraisal theory of empathy and vicarious emotions, empathy occurs when an observer appraises a target's situation in the same way as the target. If the observer appraises the target's situation differently, then the observer will have a nonmatching vicarious emotional experience. The benefit of the appraisal theory of empathy is that one can predict specific matching or nonmatching emotions if one knows the observer's pattern of appraisals. The nonmatching appraisals hypothesis can be broken down into two more specific hypotheses.

First, the observer's and target's emotions will not match if they use different information to appraise the target's situation (different information hypothesis). This can occur if the observer knows more about the target's situation than the target knows or if the target has not communicated all of the important information about the situation to the observer. This is how we feel fear for the protagonist of a horror film who, unlike us, does not know that the killer is lurking around the corner. Empirically, the different information hypothesis can be tested by giving information to an observer about a target's situation that the target lacks. This information should affect the observer's appraisal of the target's situation and the observer's corresponding emotions. There is limited evidence in support of the different information hypothesis from a study in which subjects' empathic responses to patients undergoing a painful medical treatment were affected by their knowledge of whether or not treatment was successful (Lamm et al., 2007a). Presumably, the patients (who were actually actors posing as patients) did not know whether the treatment would succeed. This study was not designed to vary the dimensions from appraisal theories and more research is needed to test the different information hypothesis. In a recent article in the organizational psychology literature about affective linkage, Elfenbein (2014) discusses how the similarity of people's emotional reactions might depend on whether they have a shared vantage point, which is similar to our different information hypothesis.

Second, the observer's and target's emotions will not match if their psychological states are likely to lead them to appraise the same information differently (different states hypothesis). To put this hypothesis another way, the same facts of the situation are available to the observer and the target, but differences in their psychological states cause differences in their appraisals. A similar idea was presented by Elfenbein (2014) in her discussion of convergent and divergent affective linkages when two people have a high shared vantage point.

As one example of the different states hypothesis, some research suggests that people of high power and high social class, or those who have been primed to feel that they are high power or high social class, are less empathic and compassionate than those with low power or low social class (Kraus, Côté, & Keltner, 2010; Piff, Kraus, Côté, Cheng, & Keltner, 2010; van Kleef et al., 2008). Empathy research generally involves situations in which the target is sad or afraid, both of which are emotions that usually are high in appraisals of situational control (C. A. Smith & Ellsworth, 1985), and people who feel powerful might be unlikely to make high situational control appraisals (Kraus et al., 2010; Tiedens, Ellsworth, & Mesquita, 2000). As a consequence, observers who feel powerful (high personal control) should be less likely to empathize with high situational control emotions such as sadness and fear, but they may be more likely to empathize with high human agency emotions such as anger and pride.

As another example of the different states hypothesis, when the observer and target have different goals then they should appraise the same facts of the target's situation differently. One mundane example is sporting events. If the star player on an observer's opposing team is injured by a member of the observer's team, this is inconsistent with the player's desire to win the game but it is consistent with the observer's desire for the opposing team to lose. Observers in this scenario might ignore their own team's fault in the injury more than the injured player and differ in their agency appraisals (Hastorf & Cantril, 1954) or they may simply feel happy about the injury because of its goal-congruence (Ellsworth & Scherer, 2003).

As a third example of the different states hypothesis, the observer and the target might have different comparison standards that come to mind when they appraise the target's situation. For example, suppose your friend has just had his heart broken by the woman he loved. Many would find this situation reasonably painful and feel sad with their friend. On the other hand, if earlier that same day you learned that another friend's spouse was killed in a car crash, then the heartbreak might not seem so bad and you might not feel so sad.

The psychological states that affect empathy could involve chronic differences in thinking based on things like social class, culture, and experience or they could involve temporary differences in thinking based on the current context. They could change how the observer and target appraise the same features of the target's situation or change how much attention they pay to specific features. Either way the different states hypothesis predicts that any differences in the observer's and target's psychological states that produce differences in their appraisals of the target's situation will produce nonmatching emotions, even if the observer and target have access to the same information about the situation.

The major strength of the appraisal theory of empathy and vicarious emotions is that it makes general organizing predictions about emotion matching that can be translated into specific, novel hypotheses. Equipped with research-based knowledge of the appraisal profiles of different emotions, researchers can manipulate or measure appraisals to predict both empathic and nonmatching vicarious emotions. Alternatively, researchers can use an observer's emotional response to a target's situation to infer the observer's appraisals. Problematic appraisal dimensions can be identified and targeted for interventions that increase empathy.

Implications of the Theory for Perspective Taking

Perspective taking is discussed as a mechanism for empathy both in Hoffman's theory and in some perception-action approaches (Decety & Jackson, 2006; Decety & Moriguchi, 2007; Hoffman, 2000). Perspective taking is considered to be an effortful process that is especially important when more automatic processes do not cause empathy. We propose that perspective taking can cause empathy if it directs an observer's attention to important features of the target's situation that are not salient or it changes the observer's appraisals so that they match the target's appraisals.

Most experimental manipulations of perspective taking ask subjects to consider what a target is thinking or feeling (Batson, Early, & Salvarani, 1997; Lamm et al., 2007a). According to an appraisal theory of empathy and other vicarious emotional experiences, these general instructions should only succeed if the subject attends to the appropriate features of the target's situation and appraises them the same way that the target appraises them. Imagine if instead researchers were to use more guided perspective taking manipulations. For example, perspective taking instructions could be specific about which aspects of the target's situation subjects should consider. Or, if the researcher believes that the subject's appraisal of the target's situation will differ from the target's appraisal, then the researcher could address the problematic appraisal dimensions directly. For example, the appraisal of perceived effort differentiates frustration from boredom and challenge from happiness (Smith & Ellsworth, 1985). Observers who have experience with tasks are likely to appraise them as less effortful than targets who are trying them for the first time. It may be more effective to remind the experienced observers how much effort it took their first time than to give them general perspective taking instructions. Guided perspective taking instructions also might produce empathy more effectively when the observer and target have a conflict of interest (Epley et al., 2006).

We are not aware of any research that has used specific appraisals to guide perspective taking. The effects of perspective taking on empathy might be mediated by changes in the observer's appraisals, but research is needed to test this idea. The effects of perspective taking on appraisal also might explain its success at increasing compassion (Batson et al., 1997; Batson & Ahmad, 2001; Coke, Batson, & McDavis, 1978). Although there are only ad hoc descriptions of compassion appraisals that are not based on direct empirical investigations (Goetz, Keltner, & Simon-Thomas, 2010), there is strong evidence that appraisals of high situational control make people feel compassion for others (Schwarzer & Weiner, 1991; Weiner, Graham, & Chandler, 1982). Other research has demonstrated that perspective taking can decrease the actor-observer bias by increasing observers' situational attributions for actors' behavior, particularly for negative events (Betancourt, 1990; Galper, 1976; Gould & Sigall, 1977; Storms, 1973; Vescio, Sechrist, & Paolucci, 2003). When perspective taking manipulations are employed in typical compassion research paradigms, they might increase compassion by directing subjects' attention to situational causes of a target's misfortune. Appraisals of situational control might mediate the effects of perspective taking on compassion in typical compassion experiments.

Beyond Association-Based Processes for Vicarious Emotions

The history of empathy research in psychology is rich with association-based processes.[7] In classical conditioning, the target's emotional experience is associated with an unconditioned stimulus that produces the observer's empathic emotion. In mediated association, direct association, and role-taking the target's experience is associated with the observer's emotional memories that produce the empathic emotion. In mimicry, the target's emotional experience is associated with the observer's emotional expression, which is associated with the related emotion. In mirror neuron and perception-action theories, the target's emotional experience is associated directly with the observer's representation of the same emotional state.

The main limitation of association-based processes is that they do not explain the variety of vicarious emotional experiences that diverge from a target's experience. We do not propose that such associative processes do not occur, just that they are incomplete. Appraisal theories complement some of them well. With classical conditioning, the conditioned cues might signal that some pleasant or unpleasant situation is coming, but the observer's emotional response depends on his current appraisal of the situation, not just the past appraisal. If the observer feels greater or lesser degrees of control, for example, then he might feel angry instead of afraid, or vice versa. We have discussed how the emotional memories from direct association, mediated association, and role-taking might help the observer appraise the target's situation. Nevertheless, the appraisal theory, as a theory of emotion in general rather than empathy in particular, can go beyond association-based processes to explain a broader range of emotional phenomena, including empathy and nonmatching vicarious emotions, without becoming so broad that it loses its theoretical value.

[7] We are grateful to Richard Gonzalez for this idea.

Conclusion

Empathy, feeling what another person feels, has a name. It has been treated as a special kind of phenomenon that is separate from firsthand emotional experience. Current empathy theories explain it fairly well. Empathy's sibling, feeling something for others that they do not feel, remains nameless. Despite their strong resemblance to empathy, nonmatching vicarious emotions are neglected by empathy theorists as well as emotion theorists. Yet, are empathy, nonmatching vicarious emotions, and firsthand emotions really three separate phenomena that require three separate explanations?

We have introduced an appraisal theory of empathy and vicarious emotions based on appraisal theories of emotion to provide a unified view in which the same appraisal process explains all three phenomena. The differences among the three are what one appraises and how one appraises it. The main propositions from the theory are:

1. Firsthand and vicarious emotions are based on appraisals of situations.
2. Firsthand emotions occur when observers appraise their own situations and vicarious emotions occur when observers appraise targets' situations.
3. An observer has a relatively unemotional reaction to a target's emotional experience when
    a. The observer does not appraise the target's situation.
    b. The observer appraises the target's situation as ordinary rather than novel.
    c. The observer does not have enough information about the target's situation to appraise it.
    d. The observer appraises the target's situation as neutral rather than pleasant or unpleasant.
4. Empathy occurs as a special case of vicarious emotions when the observer appraises the target's situation in the same way that the target appraises it.
5. An observer has an emotional reaction to a target's emotional experience that does not match what the target feels when:
    a. The observer appraises the target's situation differently from the target because the observer and target use different information to appraise the situation (different information hypothesis).
    b. The observer appraises the target's situation differently from the target because the observer and target are in psychological states that make them appraise the same information differently (different states hypothesis).

The theory emphasizes the perception of a target's situation. Although other theories have acknowledged the target's situation, it has not been the main thrust. Instead the target's emotional state or expression has been emphasized, especially in the more recent mirror neuron and perception-action theories. Additionally, the appraisal theory perspective makes novel predictions about how the target's situation influences an observer's vicarious emotions.

One of the central problems in the study of emotions for others is what makes something that is happening to another person good or bad to an observer. We have proposed several possible solutions, but each raises new questions. One solution is that we only feel emotions for others when they are relevant to our personal goals—but how do we feel emotions for strangers? A second solution is that we automatically feel whatever we think someone else feels—but how do we feel emotions for others that are different from what they feel? A third solution is that our emotions for others are based on personal emotional experiences that do involve personal goals—then why don't we ignore others and become focused on our own emotional memories?

We propose a new possible solution—perhaps we appraise situations as pleasant or unpleasant in and of themselves, and not just pleasant or unpleasant because they happen to us. And perhaps we can then understand situations in terms of other appraisals. This proposal is not so far-fetched. There is no doubt that human emotions can be evoked by the experiences of others. Storytelling is universal across cultures. Even very young children are easily moved by the adventures of imaginary people, including members of other species such as Peter Rabbit. When Mr. McGregor suddenly appears, when he chases Peter with a rake, when Peter gets tangled in a net and can't escape, the child feels fear; when Peter escapes, the child feels relief. No one has to teach a child how to understand a story. Instead children seem able to understand emotional events without seeing the emotional expression of the characters and without ever having experienced the same events; they feel for Peter without ever having been chased by a man with a rake or caught in a net.

Empathy and other vicarious emotional experiences are still a problem, but they are not a unique problem. An empathy problem is why one person feels sad and a second person feels nothing about the same bad thing that happens to someone else. An emotion problem is why one person feels sad and a second person feels nothing about the same bad thing that happens to themselves. These two similar problems might have similar answers. Our answer is that the two problems have to do with appraisals of the situation.

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