An Appraisal Theory of Empathy

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Abstract

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 empathy 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 do not match what they feel, such as feeling angry for someone who is sad or feeling embarrassed for someone who is relatively unemotional. We propose an appraisal theory of empathy based on appraisal theories of emotion. According to the appraisal theory of empathy, 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 address the problem of non-matching emotions for others. The theory treats empathy as a part of normal emotional experience.

Keywords: empathy, emotion, appraisal, vicarious emotion

An Appraisal Theory of Empathy

We feel sad when our friend's father passes away. We feel embarrassed for our colleague when he blunders. We feel joy for our friends when they succeed. Empathy, feeling what another person feels, is pervasive, and it is a problem.

Empathy is a problem because it defies our assumptions that emotions are about our own personal goals (Scherer, 2013; C. A. Smith, Haynes, Lazarus, & Pope, 1993). Indeed, empathic emotions are often described as "more applicable" or "more appropriate" to someone else's situation than to our own (e.g., Hoffman, 2000; Preston & de Waal, 2002). Yet just as we respond emotionally when we see a great work of art or step outside on a sunny day, we have feelings for others that have little to do with our personal goals.

Emotion and empathy have been studied in relative isolation from each other. Theories of emotion neglect empathic emotions and empathy theories propose special explanations for empathic emotions that are different from explanations for one's own emotions. Nevertheless, empathic emotions are real emotions. They strike us quickly and redirect our attention just as any other emotion does and they should be a part of normal emotion processes. Every empathy researcher adopts a theory of emotion implicitly, but bridging emotion and empathy theory explicitly can advance our understanding of both.

In this paper we begin with a review and critical examination of current empathy theories. Then we propose a theoretical framework for future empathy research based on the appraisal theory of emotion.

What is Empathy?

We feel emotions about a wide variety of things. Sometimes we feel emotions about events that happen to us and other times we feel emotions about events that happen to others.

When we feel emotions about things that happen to us, we call them firsthand emotions. When we feel emotions about things that happen to others, we call them vicarious emotions. In some vicarious emotional experiences, we feel the same emotion that the other person feels and we call it empathy.

Emotion theories have not said much about emotions felt for others. On the other hand, empathy theories treat empathy as something special and they generally ignore processes that drive firsthand emotional experiences. Additionally, current theories of empathy focus exclusively on situations where an observer[1] feels the same emotion as a target and they do not consider other vicarious emotions, as though matching makes empathy a phenomenon in its own right.[2] The theories explain how an observer could feel sad for a target who feels sad, but not how an observer could feel angry for a target who feels sad. Yet are matching and non-matching vicarious emotions 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 likely will 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. In these theories scholars use the term empathy to refer to feeling what another person feels, but laypeople and researchers sometimes use it as a synonym for compassion or

sympathy, which refer to feelings of care or concern for another person (de Vignemont & Singer, 2006; Decety, 2011; Eisenberg, Shea, Carlo, & Knight, 1991; Singer & Lamm, 2009). Part of the confusion likely is because we often experience empathy and compassion in the same situations. When others are sad, then we can feel sad with them (empathy) and also concern for them (compassion). In contrast, when others are happy then we can feel happy with them (empathy) but we feel no concern for them because nothing bad has happened. The term empathy is used through the rest of this paper to mean matching another person's vicarious emotions and not feelings of care and concern.

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 offers the most comprehensive view of empathy. Hoffman's 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. First, empathy occurs through mimicry. This mechanism 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. The second stage is equivalent to a strong version of the facial

feedback hypothesis in which emotional expression is sufficient to produce subjective feelings of emotions (Laird, 1974; Tourangeau & Ellsworth, 1979; Zajonc, Murphy, & Inglehart, 1989). This mimicry mechanism is what Hatfield, Cacioppo, and Rapson (1994) call "primitive emotional contagion."[3] For example, if we see a stray dog attack someone who looks scared, then we automatically imitate the fear expression and our imitated expression causes us to feel scared too.

Classical conditioning. Second, empathy occurs through classical conditioning. Classical conditioning begins with situations that are intrinsically pleasant or unpleasant and cause emotional responses without prior experience, such as physical pain from a dog bite. These situations are unconditioned stimuli (UCS's) that automatically cause emotions as unconditioned responses (UCRs).

In one version of classically conditioned empathy (Hoffman, 2000), during conditioning we experience intrinsically pleasant or unpleasant situations (UCS's) with others whose emotional expressions are neutral stimuli (NS's) that become associated with the situation. This pairing causes others' emotional expressions to become conditioned stimuli (CS's) that cause our empathic emotions as conditioned responses (CRs). For example, we may see a stray dog attack another person who looks scared (NS) right before the same dog attacks us (UCS) and we feel afraid (UCR). In the future when we see others' fear expressions (CS), we will feel afraid (CR).

In a second version of the classical conditioning explanation (Humphrey, 1922) the conditioned stimuli are not others' emotional expressions, but instead they are sensory features of the situation. For example, we might have experienced a dog attack (UCS) and felt afraid (UCR). Immediately before the dog attacked, we heard the dog growl (NS). This pairing causes us to feel afraid (CR) when we hear a stray dog growl before it attacks another person (CS). In

the first version the target's emotional expression causes empathic emotions, whereas in the second version the target's emotional situation causes empathic emotions.

Direct association. Third, empathy occurs through direct association. The target's emotional expression or situation reminds the observer of her own past emotional experiences. Then the observer feels the emotions from these past experiences. For example, if we see a stray dog attack another person, then we might remember a time when an animal attacked us. We re-experience 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 other'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 experience through words and then 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 tells us that a dog attacked him earlier in the day, then we might remember a time when a dog attacked us and feel afraid from 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 a more effortful process 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 we learn that a friend was attacked by a dog, then we may actively try to imagine how she felt by recalling a time when a dog attacked us and feel afraid from the memory.

In his description of role-taking, Hoffman (2000) also states that the observer can imagine the target's emotional situation so vividly that it produces the same emotion in the observer. 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 context-free mechanisms necessary for empathy?

Mirror Neurons and the Perception-Action Model

Since the 2000s, empathy research largely has 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 discovered first 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. Some researchers have argued that the function of mirror neurons is to promote understanding and imitation of others' behavior (Gallese, 2003; Gallese, Keysers, & Rizzolatti, 2004; Rizzolatti et al., 1996; Rizzolatti, Fogassi, & Gallese, 2001), though 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).

Although research on mirror neurons began with goal-directed action, some have argued that mirror neurons are responsible for all vicarious experiences, including action, sensation, and emotion (Gallese, 2003; Gallese et al., 2004; Iacoboni, 2009; Keysers & Gazzola, 2009). For example, Gallese's "shared manifold hypothesis," proposes that 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 that are responsible for the firsthand experience of that emotion automatically discharge and produce the same emotional state in the observer. For example, if we see a stray dog attack another person who looks scared, then that person's expression causes the neurons that are involved in our experience of fear to automatically discharge and we feel scared too. As with action understanding, 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) seminal paper proposing a perception-action model of empathy (see also (Preston, 2007)). Like mirror neurons, perception-action models originally were 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 processes. 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 we see a stray dog attack another person who looks scared, then neurons, physiological changes, and episodic memories that are part of our fear representation automatically activate and cause us to feel scared too.

The mirror neuron and perception-action theories of empathy are similar to a combination of Hoffman's mimicry and association mechanisms. Instead of relying on mimicry of bodily expressions of emotion, the mirror neuron account skips over the body and automatic matching happens in the brain. Instead of the perception of a target's emotional 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 emotion (e.g., Fan & Han, 2008; Jackson, Meltzoff, & Decety, 2005; Lamm, Batson, & Decety, 2007a; Lamm, Meltzoff, & Decety, 2009; 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 the anterior insula (AI) and anterior cingulate cortex (ACC), two regions involved in firsthand experiences of pain, while viewing photographs of hands and feet in painful situations (e.g., being cut with a knife) than while viewing photographs of hands and feet in non-painful situations (e.g., next to a knife). Activity in the AI or ACC has also been found for firsthand and empathic disgust (Phillips et al., 1997; Wicker et al., 2003) and social exclusion (Eisenberger, Lieberman, & Williams, 2003; Masten, Morelli, & Eisenberger, 2011; Meyer et al., 2013). There is not yet

research on neural overlap for firsthand and empathic experiences of common emotions such as happiness, sadness, anxiety, embarrassment, and anger, though some studies have examined activity in 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 in the firsthand and empathic experience of emotions would be consistent with mirror neuron and perception-action theories of empathy, we do not think that such findings would rule out other theories.

The original mirror neuron and common-coding approaches to perceptual information and motor action were exciting because they contradict 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 one finds 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 applied to empathy rather than to perception and motor action. *All* prior theories of empathy assume that the same sorrow, joy, or embarrassment is active during firsthand and empathic experiences. No one believed that empathic emotions involve 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 approaches to empathy argue for common representations of firsthand and empathic emotions, but so do all other theories of empathy. If one finds overlapping representations, whether it is neural activity or something else, then it is not evidence in support of mirror neuron or perception-action theories of empathy over other theories. It is evidence that empathy exists.

Critique of Current Theories of Empathy

The seven current theoretical mechanisms for empathy are summarized in Table 1. None of the mechanisms involve processes that have been hypothesized to produce firsthand emotions except for the facial feedback part of mimicry (Laird, 1974; Tourangeau & Ellsworth, 1979; Zajonc et al., 1989), though few, if any, emotion theorists would claim that firsthand emotions are limited to facial feedback. For many of the mechanisms, empathic emotions are re-experienced versions of prior firsthand emotions.

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

1) How does an observer feel what a target is feeling when the observer is not in the same situation?

2) When does an observer's emotional response to a target's emotion not match the target's emotions?

Theories of empathy are developed 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 a non-matching emotional response? Yet we believe that the second question is important. Non-matching emotional responses to a target are

sometimes called “empathy failures” (Cikara, Bruneau, & Saxe, 2011). We prefer to describe them as non-matching emotional responses because the idea of “empathy failures” implies that matching is the default outcome of an empathy-specific process. Instead, the same processes might produce both matching and non-matching, empathic and non-empathic, vicarious emotions. Matching might not be an inherent feature of the emotion-generating process and empathy might not be different from other vicarious emotional experiences.

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

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

Explaining Emotion Matching

Each of the current proposed theoretical processes for empathy can explain emotion matching to some extent. Their limits with respect to emotion matching are based on how much they require the observer to (1) have some relevant past experience or (2) perceive the target’s emotional state or situation directly.

Reliance on observer's past experience. If empathy relies on the observer's past experience, then an observer only can 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 learning history for any empathic emotion. With direct association, indirect association, and role-taking, the observer needs to have some relevant emotional memories that can come to mind. The perception-action model is a little broader because the observer must have a representation of the target's situation or state, meaning that observers can feel emotions that the target has felt (the state) if they have felt them during firsthand experiences of different situations (Preston & Hofelich, 2012). In contrast, mimicry and mirror neurons do not rely at all on the observer's prior experience. The observer can mimic or mirror any expressed emotion.

Past experience most likely facilitates empathy when it comes to mind. Indeed, emotion researchers sometimes ask subjects to recall previous emotional experiences to evoke 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 little boys and girls and we would find it dull to listen to a friend's story about how he proposed to the love of his life if we never have been engaged. The importance of the observer's past experiences for many of the empathy mechanisms highlights the disconnect between empathy theory and emotion theory. The observer's emotional experience must begin somewhere. Firsthand emotions are not always based on something that happened in the past. Why should vicarious emotions require past experience? 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 (indirect perception). Classical conditioning, mimicry, and mirror neurons require direct perception. With classical conditioning, conditioned responses only occur in the presence of conditioned stimuli. 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 imagined expressions. Direct association by definition 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 based on assumptions about the target's situation (e.g., "needles are painful," Y. Cheng et al., 2007), or by imagining the target's emotional state.

Any process that requires direct perception of a target's emotional state or expression automatically fails to explain how an observer can feel something that the target does not feel (unless one wants to argue that all non-matching vicarious emotions are based on incorrect perceptions of what the target feels). If, however, an empathy process allows the perception of a target's *situation* rather than the target's *state* to cause the empathic emotions, then the theory can begin to explain non-matching emotional responses.

Explaining Non-Matching

Non-matching could mean one of two things. First, it could mean that the observer reacts unemotionally to a target's emotion. 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 could 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.

Non-matching, unemotional observer. Non-matching, unemotional observer reactions are a problem for 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 because they attend more to others with whom they are interdependent (Molenberghs, 2013; 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 relevant past experience. If the observer lacks experience that is relevant to the target's situation, 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 inhibit it through self-regulation. 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 by inhibiting their empathic reactions to their patients. There are two perspectives on when regulation may occur: the "late appraisal model" and the "early appraisal model" (de Vignemont & Singer, 2006).[4] A late appraisal model means that automatic matching begins, but then self-regulation inhibits the process. In contrast, an early appraisal model means that an observer's interpretation of the 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 when the observer is attentive and has relevant experience, but it cannot explain why an observer would feel something on behalf of a target who shows no sign of feeling anything (e.g., vicarious embarrassment). On the other hand, an early appraisal model allows the observer to experience any emotion because it is not tied to the target's emotional state.

Non-matching, emotional observer. Non-matching emotional responses are a bigger problem for empathy theories when the observer feels something that the target doesn't feel. The observer may feel embarrassed for a target who shows no sign of embarrassment (Krach et al., 2011) or feel angry on behalf of a target who is sad (Hoffman, 2000, p. 98). Classical conditioning can still 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 a prize instead of you in a competition (Englis, Vaughan, & Lanzetta, 1982). Mimicry falls apart because the observer only mimics observed emotions. Similarly, mirror neuron and perception-action approaches require perception of the target's state and do not explain responses that do not match

that state. Direct perception, mediated perception, and role-taking could 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 these processes will evoke memories with matching or non-matching emotional content.

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 empathic response is transformed through 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 in which the observer's interpretation of the target's situation determines the observer's ultimate vicarious response. 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 vicarious emotion.

Summary

The critique of current empathy theories is summarized in Table 2. Each empathy process explains emotion matching under certain circumstances. For each process, emotion matching only happens when the observer has some relevant past experience, directly perceives the target's state or situation, or both. Based on these requirements, 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 differs from the target's emotion. Although this second case of non-matching receives little attention in the empathy literature, some of the processes could account for it if the observer's conditioning

history or associated emotional memory involves an emotional response that differs from the target's emotion. Other mechanisms offer no explanation.

Appraisal Theory of Emotion

The major limitation of many of the current empathy mechanisms to explain non-matching is that they focus on the target's state as the primary cause of empathic emotions. If the target displays no emotional state, then there is no empathy. Adam Smith (1759/2002) had a different idea in his *Theory of Moral Sentiments*:

> Even our sympathy[5] with the grief or joy of another, before we are informed of the cause of either, is always extremely imperfect. 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 non-matching emotional responses are no longer a problem—the observer's emotional experience is not limited to the target's emotions, but rather to the whole range of emotions that the observer's interpretation of the target's situation can produce. Smith's emphasis on how we

interpret others' situations fits nicely with the appraisal theory 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 of emotion argue that firsthand emotions are based on how we interpret our own situations (Ellsworth & Scherer, 2003; Roseman, Spindel, & Jose, 1990; Scherer, 1984; Siemer, Mauss, & Gross, 2007; C. A. Smith & Ellsworth, 1985). Appraisal theorists make three general claims about emotion. First, emotions are continuous processes. Second, emotions are based on appraisals of the situation. Third, emotions have universal patterns of appraisal.

Emotions are Continuous Processes

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 treat emotions as continuous processes without distinct boundaries. When we say that we feel anger, we really describe a variety of continuous emotional experiences. The boundaries between experiences that we call anger and those that we call fear or any other emotion are fuzzy. From an appraisal theory perspective, there are no separate emotion systems. Instead, there is one ongoing process of emotional experience.

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.

Emotions are Based on Appraisals of the Situation

Appraisal theories argue that emotional experience is based on evaluative interpretations of the situation (appraisals). Early research by appraisal theorists looked for a parsimonious set of appraisal dimensions that could model 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) by using six appraisal dimensions: pleasantness, anticipated effort, self-other agency, situational control, attentional activity, and certainty (for a review of appraisal theories and other proposed appraisal dimensions, see Ellsworth & Scherer, 2003). Figure 1 displays a schematic representation of six of the emotions plotted along four of the appraisal dimensions. Some emotions had largely overlapping appraisal patterns—sadness and fear differed primarily on the appraisal of certainty (see Figure 1), 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 confident 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 (perceived 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 appraisal process can occur automatically and non-consciously. Emotion labels describe prototypical or modal regions along the appraisal dimensions rather than separate emotion systems (Scherer, 1984; 1994). Just as one's appraisal of the situation occurs along a continuum, emotional experience occurs along a continuum. If two people match in their appraisal pattern along the appraisal dimensions, then they will feel the same thing because the appraisal patterns correspond to emotional experience in the same way for everyone.

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. This is also 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, they are treated as moderators that change or eliminate empathy (Lamm et al., 2007a; Lamm et al., 2007b; Preston & Hofelich, 2012). An important corollary is that an observer's appraisal of a target's situation is a crucial determinant of 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 reflects normal emotional processes.

Empathy is Continuous with Other Emotional Experiences

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 an example of general emotion processes. Empathy is just one possible outcome of the general 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 emotions. How does empathy relate to non-matching 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 in empathy the observer's appraisal and the target's appraisal match and with other vicarious emotional experiences they do not match.

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 non-matching 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 non-matching 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 non-matching vicarious emotion, just as there is no distinct boundary between sadness and fear. You may 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 on empathy, 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 a target.

Imagine again that you are waiting with your friend in the hospital. As you wait with your friend, you begin to wonder whether you should get the same malaria test. You begin to entertain the realistic 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, non-vicarious emotion.

Yet the line between firsthand emotions and vicarious emotions is fuzzy just as the line between empathy and non-matching vicarious emotions is fuzzy. 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. How much attention must be diverted from your own situation and to your friend's situation to make the emotion vicarious? The degree to which you attend to and appraise another's situation—and to which your emotion is vicarious and not firsthand—is continuous as well. You may experience multiple vicarious and firsthand emotions as you go between appraising the other's situation and your own situation.

Several theoretical perspective 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). Self-other distinction is primarily important for theories where the target's emotional state automatically causes the same emotion in the observer. The idea is that if observers automatically match targets' emotions, then the observers might become confused and think that something is happening to them. Therefore, observers must maintain a self-other distinction so they remember that the cause of their emotion is something that happened to the target and not something that happened to them. If they maintain this self-other distinction, then

they experience empathy; otherwise they feel firsthand "personal distress." 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 the cause of their emotion and there is not the same risk of confusion that comes from context-free automatic matching processes.

In summary, in an appraisal theory of empathy there is no hard line separating empathic emotions from other emotions. Just as the appraisal theory of emotion treats emotions as continuous rather than as distinct categories, the appraisal theory of empathy treats the difference between empathy and non-empathic emotional experiences as continuous rather than discrete. The difference has 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). Both are a matter of degree. By treating empathy as a state that is continuous with general emotional experience, we can examine how it is one possible outcome in general emotional processes. 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 process 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 co-worker has just learned that she will be laid off. Your co-worker finds this to be an unpleasant event (low pleasantness appraisal) that it is likely to happen

(moderate certainty appraisal). Your co-worker 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 co-worker feels sad about losing her job. You also appraise her situation to be unpleasant, certain, and caused by a bad situation. You feel sad for your co-worker. This is prototypical empathy.

Now imagine a similar scenario, but you know something that your co-worker 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—you still find it to be unpleasant and certain as your co-worker does, but you believe the boss is lying about the bad economic circumstances and you blame the boss for your co-worker'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 co-worker but your co-worker 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 co-worker'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 due. 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 agency appraisal). You are no longer paying attention to your co-worker'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 co-worker's situation, even though your co-worker's situation caused the 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 co-worker, but she is someone whom you find to be a complete 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 co-worker's own fault (low situational agency/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 attend to and appraise (your own situation or another's situation) and how you appraise it (in the same way or in a different way as 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.

Perceiving the Other's Emotion

As discussed previously, 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 emphasizes perception of another's situation, emotional expressions can 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, Van Doorn, Heerdink, & Koning, 2011).

Most directly, emotional expressions communicate whether something good or bad has happened. Expressions of emotions such as joy, fear, and sadness may be sufficient to trigger an observer's appraisals of pleasantness or unpleasantness. 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 overly anxious, then the observer might not believe that the target's fearful emotional expression is informative. Some emotions, such as anger, may require knowledge of the situation before they are vicariously experienced (A. Smith, 1759/2000). 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.

Explaining Emotion Matching and Non-Matching

In an appraisal theory of empathy, empathy occurs when an observer appraises a target's situation in the same way as the target. The appraisal theory of empathy explains non-matching with the same process. That is, non-matching occurs either when the observer does not appraise the target's situation or when the observer's appraisal does not match the target's appraisal. The benefit of the appraisal theory of empathy is that one can predict specific matching or non-matching emotions if one knows the observer's pattern of appraisals. The non-matching 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.

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.

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 intentionally injured, then 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 its goal-congruence makes it a pleasant event for them (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 died suddenly 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 parts of the target's situation. Either way the different states hypothesis predicts that differences in the observer's and target's psychological states that produce differences in their appraisals of the target's situation will produce non-matching

emotions as well, even if the observer and target have access to the same facts of target's situation.

The major strength of the appraisal theory of empathy 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 non-matching vicarious emotions. Alternatively, researchers can use an observer's emotional response to a target's situation to predict the observer's appraisals. Problematic appraisal dimensions can be identified and targeted for interventions that increase empathy. Specifically, the theory has implications for a topic that is commonly associated with empathy: perspective taking.

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 either directs an observer's attention to important features of the target's situation that are not salient or 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 the appraisal theory of empathy, these general instructions only should 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 what 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, 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 (C. A. Smith & Ellsworth, 1985). Observers who have experience with tasks are likely to appraise them as less effortful than targets who are about to try 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, Caruso, & Bazerman, 2006).

We are not aware of any research that has used specific appraisals to guide perspective taking. The effects of perspective taking on empathy may 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 may 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 rather than thorough 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.

Emotional Empathy and Cognitive Empathy

Empathy as we have described it, as matched vicarious emotions, is sometimes referred to as emotional empathy to distinguish it from what some call "cognitive empathy." Cognitive empathy generally refers to perspective taking or otherwise intentionally trying to understand others' internal states (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, 2010; Shamay-Tsoory, Aharon-Peretz, & Perry, 2009). This may involve inferences about others' emotional states, but it also involves inferences about others' thoughts or beliefs, such as when teachers try to infer whether their students understand what they are teaching.

As with perspective taking, any other attempt to understand others' internal states should influence vicarious emotions to the extent that it changes an observer's appraisal of the target's situation. There are a number of other points to note about the emotional empathy/cognitive empathy distinction from the perspective of an appraisal theory of empathy. First, appraisal theories reject the idea that affect and cognition are separate systems because emotional experience is inherently connected to thoughts about the situation. Second, you do not need to know what someone else is feeling to feel the same thing. You do not need to know another's emotional state to appraise the other's situation and feel something in response. Third, you can understand others' emotional states without feeling how they feel. If your appraisal of another's situation differs from the other's appraisal, then you might infer their emotional state through

facial expressions, language, or specific knowledge you have about the other person's general emotional reactions, but feel something different.

In general, the prediction from the appraisal theory perspective about the interplay between emotional and cognitive empathy is that inferring a target's mental state, whether it involves perspective taking, reading facial expressions, using stereotypes, or any other means, will affect the observer's vicarious emotional experience if it changes the observer's appraisals of the target's situation. If the observer is unable to infer the target's internal states, then such inferences cannot affect vicarious emotions. Nevertheless, the ability to infer a target's internal state does not stop the observer from appraising the target's situation and feeling something for the target.

What Do Goals Do for Emotion?

The appraisal theory approach to empathy can explain a variety of emotions that we have on behalf of others. Sometimes we feel what someone else is feeling. Current empathy theories explain these experiences well. But sometimes we feel something completely different from the other person. Current empathy theories do not explain these experiences well. Nevertheless, these experiences face us with the same problem as empathy—how do we feel emotions for others when they aren't about our own personal goals?

There is a tendency to emphasize that emotions are about personal goals or personal wellbeing (Lazarus, 1991; Lazarus & Smith, 1988; Scherer, 2013; C. A. Smith et al., 1993). Yet empathy, along with aesthetic emotions (Scherer, 2005), seems to have little do with our own goals. Some empathy theorists have dealt with the problem by proposing processes in which vicarious emotions are based on one's own prior emotional experiences (classical conditioning, direct and mediated association, role-taking, perception-action models)—experiences that

involve personal goals. Others have dealt with it by proposing processes that are independent of the emotional context (mimicry, mirror neurons), so that goals are irrelevant. An alternative way to solve the problem is to declare that vicarious emotions do involve personal goals, even if we must invoke broad goals such as a "goal to end human suffering" or a "goal for the world to be fair."

An appraisal theory of empathy resolves the problem by allowing goals to have a place when they are relevant, but it does not require them for emotional experience. Specifically, appraisal theories often resolve some of the nuances about whether events are desirable or undesirable by separating appraisals of intrinsic pleasantness from goal conduciveness (Ellsworth & Scherer, 2003; C. A. Smith & Ellsworth, 1985). For example, muscle pain usually feels unpleasant and eating sweets usually feels pleasant. Consequently, muscle pain typically makes one feel bad and eating sweets typically makes one feel good. Nevertheless, if one has a fitness goal then muscle pain from exercise is goal-congruent and eating fatty sweets is goal-incongruent. In this case muscle pain is likely to involve positive emotions and eating sweets is likely to involve negative emotions. People do not need to have goals to feel emotional when their muscles are sore and their stomachs are full, but goals can be a part of the appraisal process when they are present. Similarly, people should not need goals to feel vicarious emotions, but they can be a part of the appraisal process if they are relevant.

In addition, the goal relevance of situations may contribute to emotional intensity, where stronger emotions are felt to the extent that an event facilitates or blocks one's goals. For example, a traffic jam is more upsetting if you are worried about missing a flight than if you are driving nowhere in particular. In general, events that happen to oneself probably are more goal-relevant than events that happen to others. As a consequence, on average, firsthand emotions

usually are felt more strongly than vicarious emotions and observers rarely, if ever, feel exactly the same thing as targets. Empathy, once again, is a matter of degree. Nevertheless, the appraisal theory of empathy predicts that observers can feel exactly the same as targets if the observer and target appraise the target's situation as equally goal-relevant.

Although there may be variability in goal-relevance between firsthand and vicarious emotional experiences, there is also substantial variability in goal-relevance within firsthand and vicarious emotional experiences. Fear of bad news from a cancer screening test feels different from fear of bad news from an introductory psychology test. And fear of bad results from your child's cancer screening test feels different from fear of bad results from your neighbor's.

So if goals are salient and relevant in a given situation, then it is necessary to consider their role in emotional experience; but goals are not necessary for emotional experience, empathic or not.

Empathy Beyond Association-Based Processes

The history of empathy research in psychology is rich with association-based processes.[6] 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 a representation of the observer's emotional state.

The main limitation of association-based processes is that they do not explain the variety of vicarious emotional experiences that diverge from the target's experience. We do not propose

that such associative processes never occur. Indeed, emotional memories that come to mind through association might even help the observer appraise the target's situation. Nevertheless, the association-based processes are incomplete. The appraisal theory, as a theory of emotion in general rather than empathy in particular, can explain a broader range of emotional phenomena, including empathy and non-matching vicarious emotions, without becoming so broad that it loses its theoretical value.

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 well. Empathy's sibling, feeling something for others that they do not feel, remains nameless. Despite their strong resemblance to empathy, non-matching vicarious emotions are neglected by empathy theorists as well as emotion theorists. Yet, are empathy, non-matching vicarious emotions, and firsthand emotions really three separate phenomena that merit their own independent explanations?

We have introduced an appraisal theory of empathy based on appraisal theories of emotion to provide a unified view of emotion 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. Empathy occurs as a special case of vicarious emotions where the observer appraises the target's situation in the same way that the target appraises it.

4. Empathy does not occur when:
    a The observer does not appraise the target's situation.
    b 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).
    c 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 impetus for the theory is the belief that empathy and emotion belong together. Empathy theorists can turn to emotion theories to make predictions about how normal emotional processes explain how we feel things for others; emotion theorists can test their theories by examining how well they explain vicarious emotions. We have acted on this belief by using appraisal theory of emotion to inform a theory of empathy. Others who share this belief but adopt a different theory of emotion will build a different theory of empathy.

The unified view of empathy and emotion that we have presented provides a guide to explore some of the interesting questions about empathy, such as, "How do we feel things for others that aren't about our own goals?", "What role does perspective taking play in empathy?", and, "What do some people feel sad for others' misfortunes, but others don't?" It also provides a way to move away from one of the least interesting questions: "But is that *really* empathy?" Whether or not instances of vicarious emotions count as empathy comes into question whenever we might feel something for ourselves as well as something for the other person (perhaps we are in a similar situation as them) or whenever we might feel something that slightly differs from how they feel (perhaps we feel a little sad for the other, but not as miserable as they feel). Do we

throw these experiences in the firsthand basket or the empathy basket? From the appraisal theory approach, the answer is neither. Instead we can ask, “How empathic is it?”, and see if the experience falls more on the firsthand side or more on the empathic side of the emotional spectrum. Over the course of a complete emotional event, the answer might be both at different points in time.

Empathy is still a problem, but it is 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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Footnotes

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

[2] 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).

[3] 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 paper.

[4] The use of the term "appraisal" here does not refer to appraisal theories of emotion. In the empathy literature, the terms "appraisal" and "contextual appraisal" are used to mean "thinking about the target or target's situation differently" in a very general sense (e.g., Bernhardt & Singer, 2012; Lamm et al., 2007a). Appraisal theories of emotion use the term appraisal to refer to specific evaluative dimensions that differentiate emotional experiences.

[5] The word empathy did not exist in the English language during Smith's time, so he uses the term sympathy to mean emotion matching.

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

Table 1

Current Theoretical Mechanisms for Empathy

Mechanism	Explanation for Empathy
Mimicry	Observer automatically mimics target's expressed emotion and afferent feedback from the expression produces the associated emotion
Classical conditioning	Target's emotional expression or situation is a conditioned stimulus that produces a conditioned emotional response in the observer
Direct association	Observer directly perceives the target's emotional expression or situation, remembers own associated emotional experiences, and feels the emotions from own memories
Mediated association	Observer learns about the target's emotional expression or situation through language, remembers own associated emotional experiences, and feels the emotions from own memories
Role-taking	Observer actively imagines how she or he would feel in the target's situation or how the target feels and either mimics imagined emotional expressions and feels the emotions through afferent feedback, remembers own associated emotional experiences and feels the emotions from own memories, or both
Mirror neurons	Observer's perception of the target's emotion automatically activates observer's neurons for the same emotion
Perception-action model	Observer's perception of the target's emotion automatically activates observer's representation of the same emotion (including neurons,

physiological responses, and episodic memories)

Table 2

Limitations on Emotion Matching and Explanations for Non-Matching in Current Theoretical Mechanisms for Empathy

Mechanism	Matching Vicarious Emotions		Non-Matching Vicarious Emotions	
	Requires past experience	Requires direct perception	Unemotional observer	Emotional observer
Mimicry	No	Yes	Inattention Self-regulation	No explanation
Classical conditioning	Yes	Yes	No past experience Inattention Self-regulation	Different emotion in past experience
Direct association	Yes	Yes	No past experience Inattention Self-regulation	Different emotion in past experience
Mediated association	Yes	No	No past experience Inattention Self-regulation	Different emotion in past experience
Role-taking	Yes	No	No past experience Inattention Self-regulation	Different emotion in past experience
Mirror neurons	No	Yes	Inattention Self-regulation	No explanation
Perception-action model	Yes	No	No past experience Inattention Self-regulation	No explanation

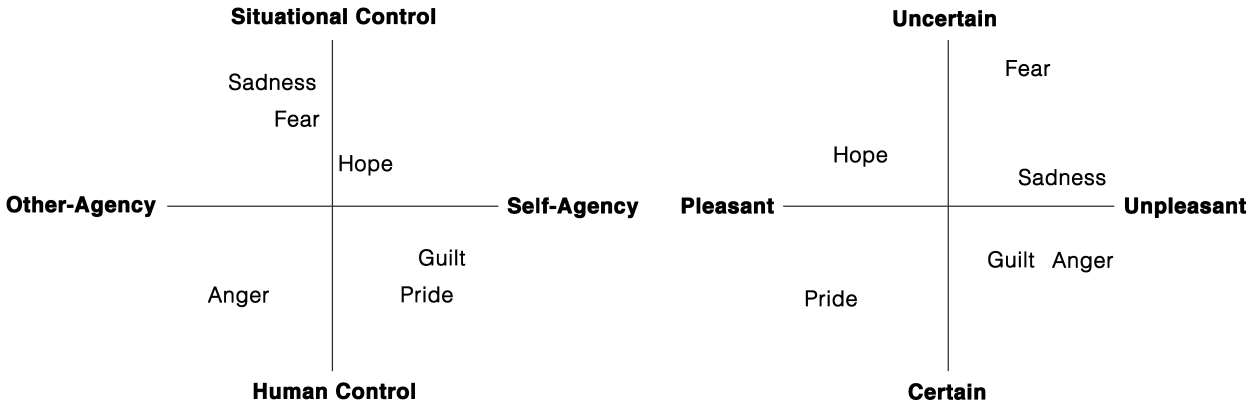

Figure 1. Appraisal patterns of emotions. This schematic plot of six emotions along four appraisal dimensions is based on results from C. A. Smith & Ellsworth (1985).