Towards an Understanding of Empathy for the Good and Bad Fortunes of Others

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Abstract

Empathy and consideration for other people's feelings are at the very heart of our ability to form and maintain social relationships, but this may sometimes demand looking beyond our own emotional perspective. This thesis sought to investigate cognitively-evoked empathy (in the absence of direct cues to other people's emotions), and its modulation. A new behavioural paradigm was first developed to study emotional perspective-taking in situations in which individuals have contrasting emotional experiences. In this paradigm participants were presented with written scenarios featuring them self and/or another person and were asked to imagine how they or the other person would feel in each scenario, making speeded emotion judgments. The scenarios described a wide variety of everyday events that might be expected to elicit positive or negative feelings in the protagonist (s) and involved conflict (contrasting fortune) or no conflict between the perspectives of self and other. Using this paradigm, it was found that individuals were sensitive to another person's conflicting perspective when judging how they would feel in emotional situations, and were particularly sensitive to another person's negative perspective. This was born out in eight further experiments, which revealed a negative-positive asymmetry in empathy, showing empathy for bad fortune to be greater and less dependent on the empathiser's own emotional experience than empathy for good fortune. Low-level accounts of how information about another person's fortune might modulate emotional judgments were discussed in relation to two experiments, but were considered insufficient to explain the data. Evidence for the involvement of higher-level processes was then found in the following five experiments. In the first three of these, participants were found to anticipate empathy in others, but to a lesser extent than in self. Then, in the final two experiments, effects of person appraisals (i.e. the likeability of the other) on empathy for the good and bad fortunes of another were observed, but it was also found that these effects were moderated by individual differences in dispositional empathy and moral attitudes. All these findings are discussed in relation to current theoretical ideas of empathy and mental state understanding.

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Chapter 1

Introduction

'You and Lucy are with friends in a cafe. A friend tells you both that your and Lucy's favourite band is playing in town and that she and a group of your friends are all going. She has one spare ticket to see the band and offers it to you. Lucy then rings the box office to buy a ticket for the concert, but the tickets are sold out and she can't go.' How do you feel? How does Lucy feel? Experiences like this, where our emotional perspective differs to that of others, are fairly common and in such situations consideration of other people's feelings may demand that we look beyond our own perspective. Understanding or perceiving other people's emotional states may lead us to feel sad or concern for their bad fortune or pleasure for their good fortune, but how might our own emotional experience affect our response to other people's fortunes? The ability to suppress one's own perspective is believed to be important in empathy (Decety & Jackson, 2004) but, despite this, empathy has rarely been studied in interpersonal situations involving conflicting perspectives. Our response to other people's emotional experiences, and the impact of our own emotional perspective, might also be influenced by emotional valence. Taking the example above, would you feel sad for Lucy or would pleasure at the anticipation of seeing your favourite band lead you to overlook Lucy's feelings? Then, consider the alternative situation, what if Lucy was offered the ticket and you could not see your favourite band play; would you be pleased for Lucy or would your disappointment overshadow everything? Phenomenal experience might suggest that it is easier to feel sad for Lucy in the former scenario than pleasure for Lucy in the second; though while it is often assumed that negative empathy is greater than positive empathy, few studies have investigated this empirically (Royzman & Rozin, 2006). This thesis reports on a series of experiments investigating empathy and emotional perspective-taking in situations in which individuals have contrasting emotional experiences. In doing so, it considers emotional valence, cognitive appraisals and cognitive biases, dispositional empathy and moral attitudes as influences in empathic behaviour.

The current chapter provides a brief overview of the empathy and emotional perspective-taking literature in order to introduce concepts, debates and theories relevant to later chapters.

Definitions and Forms of Empathy

Empathy may be understood as the ability to understand and experience the emotions of others (Decety & Jackson, 2004). Empathy motivates prosocial behaviours and is important in forming and maintaining social relations with others. However, it is a phenomenon that has defied definition, with various terms used to describe the same and different processes, and with narrow and broad meaning (Singer & Lamm, 2009; Wispé, 1986). Following, Preston and de Waal (2002), empathy is considered here to be a complex construct that incorporates a number of subordinate processes, but that may also be separated into affective and cognitive components.

Affective empathy

Affective empathy is the capacity to experience and be emotionally affected by the emotions of others. In its most basic form, this may include the vicarious sharing of other people's emotional states (or emotional contagion; Hsee, Hatfield, Carlson, & Chemtob, 1990). For example, hearing people laugh whilst watching a film in a cinema can increase our own enjoyment of the film, whilst interacting with depressed people may have a negative effect on our own mood (Howes, Hokanson, & Loewenstein, 1985). Emotional contagion is present early in development and can occur rapidly and often without awareness, but is distinguished from other forms of empathy in that there is no separation between one's own and other people's emotions (de Vignemont & Singer, 2006). We can also come to share other people's emotions whilst being aware that our emotional response stems from our perception of another person's state. For example, we may observe someone crying and feel sad but know that it is the other person's distress that has made us sad. This is sometimes thought of as 'true' empathy (de Vignemont & Singer, 2006; Preston & de Waal, 2002). Perception of another person's emotional state may also induce a qualitatively different type of emotion than is felt by the other, known as sympathy (or pity, concern or compassion; Eisenberg & Eggum, 2009). For example, we may observe someone crying and feel concern, and wish to alleviate their suffering in some way. Sympathy is considered to be a more other-oriented response, and one that demands both cognitive flexibility and self-regulation (Eisenberg & Eggum, 2009). In the sequence of processing, empathy is thought to precede feelings of sympathy, which may then lead to prosocial behaviours (Singer & Lamm, 2009), though it has also been suggested that sympathy can arise without first sharing the person's affect, occurring through cognitive processes such as perspective-taking (Eisenberg & Eggum, 2009).

Cognitive empathy

The term cognitive empathy has sometimes been used to describe the ability to represent other people's mental states, being seen as synonymous with 'theory of mind' (Premack & Woodruff, 1978). However, until relatively recently the theory of mind literature had not included emotions in its investigations (Hooker, Verosky, Germine, Knight, & D'Esposito, 2008). Cognitive empathy is defined more specifically here as the ability to understand the feelings of others, or to represent other people's emotional states (de Vignemont & Singer, 2006). It incorporates both low-level recognition of cues, such as facial expressions and emotional prosody, as well as the use of perspective-taking to make inferences about other people's emotions based on information about the social context and the person.

Relationship between cognitive and affective empathy

There is still some debate surrounding the relationship between cognitive and affective empathy. Cognitive and affective empathy are thought to rely on partially distinct neural networks, affective empathy involving the somatosensory and insular cortices, limbic areas, and the anterior cingulate cortex, and cognitive empathy involving areas such as the medial prefrontal cortex, the superior temporal sulcus and the temporal pole (Hein & Singer, 2008). However, functional Magnetic Resonance Imaging (fMRI) studies that have required individuals to predict another person's feelings (cognitive empathy) have also observed activity in regions involved in emotional processing (e.g. the thalamus, the amygdala and the somatosensory cortices; Hooker et al., 2008; Ruby & Decety, 2004; Völlm et al., 2006), suggesting that an emotional response (affective empathy) might be used to understand other people's emotions or may be generated in the process of understanding.

There is also behavioural and neuropsychological evidence suggesting that affective and cognitive empathy may be closely related. One study, for example, found that an observer's accuracy in inferring another person's negative emotional state was closely related to the degree to which the physiological state of the observer matched that of the target (Levenson & Ruef, 1992). Interestingly, individuals with pure autonomic failure (who are unable to generate autonomic responses), while performing normally on a basic task of labelling emotional expressions, have been found to perform subtly worse than controls in attributing emotions to protagonists in written scenarios (Heims, Critchley, Dolan, Mathias, & Cipolotti, 2004). This is consistent with the idea that emotional responses may be a source of information used to aid understanding of other people's emotions. Moreover, lesion studies have also suggested that understanding of other people's emotions may be disturbed in individuals who are unable to experience the emotions themselves (Calder, Keane, Manes, Antoun, & Young, 2000; Decety & Jackson, 2004; Hornak et al., 2003). For example, Calder and colleagues report a patient with damage to the insula who displayed a relatively selective deficit in recognising disgust from facial cues, sounds and emotional prosody, and who was also less disgusted by disgust provoking vignettes (Calder et al., 2000). Similarly, Hornak et al. (2003) found that changes in self-reported experience of sadness was associated with impairments in recognising sad prosody following damage to the anterior cingulate cortices and/or dorsomedial prefrontal cortex. Further, in a large lesion overlap study, lesions to the right somatosensory cortex (involved in the sensory experience of emotions) were associated with disturbed emotion recognition (Adolphs, Damasio, Tranel, Cooper, & Damasio, 2000). This has led to the suggestion that understanding or predicting other people's feelings involves the activation and use of internal affective representations associated with the experience of emotions (Adolphs et al., 2000; Hooker et al., 2008).

Consistent relationships between impairments in the experience of emotions and in the recognition of emotions, however, have not always been observed (Herberlein, Padon, Gillihan, Farah, & Fellows, 2008; Hornak et al., 2003). For example, Herberlein et al. (2008) found no relationship between impairments in emotion recognition in patients with damage to the ventromedial prefrontal cortex and their dispositional affect. Moreover, one study found that patients with congenital insensitivity to pain, and therefore unable to experience pain themselves, rated another person's pain as intensely as healthy controls when viewing their painful facial expressions (though their pain intensity ratings were slightly lower when viewing body parts in painful situations; Danziger, Faillenot, & Peyron, 2009). In addition, despite never experiencing pain themselves, when viewing others in pain they activated brain regions involved in healthy people's experience of pain (e.g. the anterior insula), suggesting they were able to empathise with states they could not feel themselves. These discrepancies might be resolved if it is assumed that there are multiple routes to emotion understanding. For example, it has been proposed that different strategies may be used to understand and predict other people's feelings, one reliant on affective representations and one more inferential or rule-based (Danziger et al., 2009; Rameson & Lieberman, 2009; Schaefer et al., 2003; see also theoretical accounts of empathy below).

In general, certain aspects of affective empathy, such as emotional mimicry and contagion, may be relatively independent of cognitive components, while others such as sympathy may depend on a metarepresentation of the other person's emotional state (Decety & Jackson, 2004). Further, an affective response may not be necessary for emotional understanding (cognitive empathy), but may facilitate understanding and/or may be generated in the process of understanding (Levenson & Ruef, 1992).

Bottom-up and Top-down Empathy

Emotional responses to and understanding of other people's emotional states can both be generated by bottom-up and top-down processing (Decety & Lamm, 2006). The distinction between bottom-up and top-down empathy is made here on the basis of being primarily externally or internally driven; these might also be conceptualised as lower and higher-level empathy. No strong assumptions are made about their relative automaticity, though it has been suggested that both bottom-up and top-down empathy can be automatic and controlled, effortful and effortless (Hodges & Wegner, 1997). As is discussed later, even bottom-up empathy may be subject to modulation and to top-down control (de Vignemont & Singer, 2006). Depending on the situation, there may be observable or audible cues to other people's emotions that allow us to decode other people's feelings or that may evoke empathic responses with little cognitive processing. These might include facial expressions, body language and emotional prosody (Zaki, Bolger, & Oschner, 2009a). For example, emotional faces can trigger matching emotional expressions and subjective emotional responses in observers (Dimberg, Thunberg, & Elmehed, 2000; Wild, Erb, & Bartels, 2001), and can provide information about the feelings and thoughts of the person displaying the emotion (Zaki et al., 2009a). In addition, certain environmental cues or contexts have such strong emotional associations (e.g. needles and pain) that little cognitive processing may be required to evoke empathic responses, even in the absence of specific cues to the person's emotional state (Jackson, Brunet, Meltzoff, & Decety, 2006). In other instances, such as when we only hear or read about another person's fortune, we may generate empathy though cognitive processing (Decety & Lamm, 2006). This may be achieved through imagination and perspective-taking (Davis, 2005; Decety & Grèzes, 2006). For example, in one study participants were asked to maintain an objective stance or to imagine the feelings of a person describing a distressing situation (Coke, Batson, & McDavis, 1978). Instructions to consider the other person's perspective were found to increase participants' concern for the person, which then led to increased help being volunteered. Compared to the large literature on bottom-up empathy and emotion understanding, fewer studies have investigated the processes involved in cognitively evoked empathy, but as this is the focus of the current thesis this is discussed in detail in the next section.

Top-down Empathy or Emotional Perspective-Taking

In the absence of observable cues, it is thought that we understand other people's emotions and generate affective responses to other people's states through perspective-taking (Batson, 2009; Decety, 2005). Previous literature has identified different forms of emotional perspective-taking and different processes involved in perspective-taking, including mental representation, perspective attribution and inhibitory control; these are discussed in turn.

It has been argued that perspective-taking can either involve placing oneself into another situation or imagining another person in that situation in order to understand a person's thoughts, feelings and intentions (Batson, 2009). These two forms of perspective-taking have been described as first and third person perspective-taking respectively and are thought to have different emotional and motivational consequences (Batson, 2009; Decety & Lamm, 2009). For example, in one study participants were asked to imagine themselves in a painful situation (first person perspective-taking) or to imagine another person in that situation (third person perspective-taking) and to rate the emotions they experienced. First person imagining was found to result in both personal distress (a self-oriented, aversive response to perceiving another's emotion) and empathic concern (a more other-oriented response), while imagining another person in the same situation resulted predominantly in empathic concern (Lamm, Batson, & Decety, 2007). Furthermore, neuroimaging evidence is compatible with the different emotional effects of first and third person perspective-taking, with greater activity observed in brain regions involved in affective processing when imagining self in emotional situations than when imagining others in the same situations (Jackson et al., 2006; Lamm et al., 2007; Ruby & Decety, 2004). In addition, it has been suggested that first and third person perspective-taking may be differentially associated with prosocial behaviour (Batson, 2009; Eisenberg & Eggum, 2009). Third person perspective-taking, because it elicits empathic concern, is thought to promote prosocial behaviour. In contrast, first person perspective-taking, because it may result in feelings of personal distress, may lead to a desire to alleviate one's own distress, reducing attention to the needs of the person in distress and discouraging prosocial behaviour (Batson, 2009; Eisenberg & Eggum, 2009).

Both forms of perspective-taking share a number of common processes, including mental representation of alternative perspectives and situations (Davis, 2005). Autobiographical memory is thought to play a key role in the construction of such representations (Buckner & Carroll, 2007; Dimaggio, Lysaker, Carcione, Nicolò, & Semerari, 2008). In support of this, past experience has been found to influence empathy for others (Batson et al., 1996; Hodges, Kiel, Kramer, Veach, & Villanueva, 2010; Preston et al., 2007). In one study, whilst in a positron emission tomography (PET) scanner, Preston and colleagues asked participants to imagine a situation from their past or to imagine the situation of another person (described to participants). When participants imagined another person's situation that they were able to relate to, their reported emotions and their physiological responses (heart rate, respiration) were similar to when they imagined a situation from their past. In contrast, when participants were unable to relate to the other person's situation their reported emotions were less intense and their heart rate and respiration were lower. It was suggested that individuals may activate existing representations and schemas, together with their associated emotions, when imagining situations they can relate to (Preston et al., 2007). When participants imagined situations they were less able to relate to, greater activity in the left inferior temporal area and fusiform gyrus was observed. These structures have been implicated in visual and facial processing, leading the authors to argue that, in the absence of existing representations, imagining another person's situation may require more active imagination. The temporal pole, thought to be involved in linking social cues with their emotional significance and storing these as social scripts (Olson, 2007), is also frequently activated in tasks requiring the attribution of emotions and other mental states (e.g. Ruby & Decety, 2003; Schulte-Rüther, Markowitsch, Fink, & Piefke, 2007; Völlm et al. 2006), consistent with the role of autobiographical memory in representing other people's states.

Perspective-taking also requires tagging who the perspective belongs to, or perspective attribution; this might be another person's perspective or might be a future or alternative self perspective (Decety & Jackson, 2006). This process is necessary to go beyond simple contagion and to distinguish between our own and other people's states (Decety & Lamm, 2006). It is not clear what the mechanisms behind self-other distinction might be, but there is evidence that certain neutral regions are differentially involved in self and other processing. These findings may offer insight into the structures that may be involved in this process. In a PET study, Ruby and Decety (2004) asked participants to either imagine how they would feel in an emotional situation or to imagine how their mother would feel. They found that both conditions resulted in large areas of common activation, but also found important differences. Firstly, the somatosensory cortex was more active when participants imagined how they would feel, consistent with first person emotional experiences being more intense, and therefore intensity may be one source of information used to distinguish self and other emotions. Secondly, greater activity was observed in the inferior parietal cortex when participants imagined how their mother would feel. Activity in this area has also been observed when participants are required to imagine another person's thoughts and actions or to assign agency to another person (D'Argembeau et al., 2007; Farrer & Frith, 2002; Ruby & Decety, 2001, 2003), producing speculation that this area may be involved in self-other distinction (see Decety & Lamm (2006) for further discussion).

Self-other distinction may be a final step in perspective-taking, but in order to avoid egocentric biases and errors, inhibiting one's own perspective may also be important in the process of inferring the mental states of others (Epley, Keysar, Van Boven, & Gilovich, 2004; Epley, Morewedge, & Keysar, 2004). The finding that people's preferences frequently intrude into their judgments about others suggests that a self-perspective may be particularly salient and offers indirect evidence to suggest that it can be hard to resist its interference when it is not relevant (Ross, Greene, & House, 1977; Van Boven, Loewenstein, & Dunning, 2005). For example, in one study, Van Boven et al. (2005) found that participants' predictions of how willing others would be to perform in embarrassing situations were strongly related to how they themselves would behave. Similarly, the current feelings of individuals have been found to influence their judgments about other people's internal states (Van Boven & Loewenstein, 2003). For example, in one study, participants were asked to judge whether a hiker lost in the woods would have a stronger desire for water or food (Van Boven & Loewenstein, 2003). Before making their predictions some participants undertook physical exercise, which was assumed to induce thirst. These participants were far more likely to predict that the hiker would desire water than participants who had not taken exercise prior to making their judgments, suggesting that their own state coloured their judgments. Such biases suggest that we may anchor our judgments on our own perspective (Epley, Keysar, Van Boven, & Gilovich, 2004a; Epley, Morewedge, & Keysar, 2004b), but this may mean that inhibition is required when our own perspective is not relevant (Hodges & Wegner, 2007).

Inhibiting our own perspective may be particularly important when required to consider the perspective of someone who is very different to us, where basing our judgments of how that person would feel, think or act on how we would feel, think or act would lead to inaccurate predictions about that person. In a recent fMRI study, participants viewed images of people being pricked by a needle or being touched by a cotton pad and were asked to imagine how the person would feel (Lamm, Meltzoff, & Decety, 2010). These people were described as typical or as belonging to a group of unusual patients who are insensitive to pain when pricked by a needle, but who are hypersensitive to the touch of a cotton pad. Compared to imagining the feelings of a typical person, participants were slower and more error prone in judging that a patient would feel no pain in a context in which them themselves would (being pricked by a needle). Moreover, there was also greater activity in the right inferior frontal cortex and the dorsal medial prefrontal cortex when participants imagined such a patient's feelings, areas known to be involved in cognitive control and perspective-taking (Lamm et al., 2010; Ruby and Decety, 2004; Vogeley et al., 2001). Thus, adopting another person's perspective may require inhibiting one's own, particularly when that someone is dissimilar to oneself, and this may be mediated by the inferior frontal cortex. In support of this, lesions affecting the right inferior frontal cortex have been found to result in difficulties in inhibiting a self perspective (Samson, Apperly, Kathirgamanathan, & Humphreys, 2005).

In sum, perspective-taking encompasses a number of cognitive processes, including forming and maintaining mental representations, assigning ownership to perspectives and inhibiting salient alternative perspectives (Decety, 2005).

Theoretical Frameworks of and Processes Involved in Empathy and Emotional Perspective-Taking

As reviewed above, empathy can be evoked from different inputs, can be generated from bottom-up and top-down processing, and can take a number of forms. It is a complex phenomenon which has challenged researchers to identify its theoretical underpinnings and to develop a unified framework. Current understanding of the cognitive and neural mechanisms underlying empathy may be drawn from different theoretical approaches; these models vary in their focus, but commonalities and links may be drawn between them.

Insights from social neuroscience

Ideas of empathy have been greatly influenced by findings from social cognitive neuroscience, which have suggested that the observation and the experience of emotions may share a common basis (Decety & Jackson, 2004). In support of this, significant overlap in neural activity has been observed when individuals view or reproduce facial expressions (Carr et al., 2003) and when individuals experience or observe the emotional states of others (Singer et al., 2004; Wicker et al., 2003). In one study, Wicker et al. (2003) found that the anterior insula and the dorsal anterior cingulate cortex were activated both when individuals smelled disgusting odours themselves and when they viewed video-clips of others smelling the odours. However, the neural basis of empathy has been most studied in the domain of pain, where the neural correlates are relatively well understood. The pain network includes areas involved in both affective (the anterior insula and the anterior cingulate cortex) and sensory processing (the somatosensory cortices; Bastiaansen, Thioux, & Keysers, 2009; Singer & Lamm, 2009). In one illustrative study, whilst in an MRI scanner, participants either received signals informing them that their partner was being painfully stimulated by electrodes applied to the back of the hand, or experienced the painful stimulation themselves (Singer et al., 2004). Knowing that a loved one was experiencing pain recruited parts, but not all, of the pain network, with activity observed in the anterior insula and the anterior cingulate cortex, regions involved in the affective processing of pain (coding unpleasantness), but not in the primary or secondary somatosensory cortices, associated with the sensory component of pain (coding intensity and location), which was only activated when participants experienced pain. However, other studies have also observed activity in somatosensory areas when participants witness another person's pain (e.g. Cheng et al., 2007). Such findings have led to the suggestion that shared representations between self and others may support our ability to share and understand the emotional states of others (Decety & Lamm, 2006; Gallese, Keysers, & Rizzolatti, 2004; Singer & Lamm, 2009). The perception-action model (PAM; Preston & de Waal, 2002), for example, proposes that perception of cues to other people's states automatically activates the perceiver's own representations of that state eliciting autonomic and somatic responses consistent with the other person's state, unless otherwise inhibited. The PAM model focuses on how we come to share the emotions of others following perception of their emotional states (bottom-up), but Preston and de Waal (2002) also note that representations of other people's states may be activated in the absence of cues through imagination and perspective-taking.

A second framework based on the idea of shared representations has been proposed by Decety and colleagues (e.g. Decety & Jackson, 2004; Decety & Lamm, 2006). Like the PAM model, observation of other people's emotions is thought to activate shared representations between self and others, but within this model a prominent role is also given to a mechanism for self-other distinction, without which, according to Decety and colleagues, witnessing other people's emotional states might lead to emotional distress and anxiety (Decety & Jackson, 2004; Decety & Lamm, 2006). In addition, Decety and Lamm's (2006) framework places emphasis on various top-down control processes, such as mental flexibility, inhibition and self-regulation. Mental flexibility is thought to give us the capacity to cognitively adopt another person's perspective, while inhibitory control may be important in overriding a pre-potent self perspective to allow consideration of other people's perspectives (Decety, 2005; Decety & Moriguchi, 2007). Finally, Decety and colleagues argue that the capacity to regulate one's emotions is essential for mature empathy and propose that emotion regulation draws on executive resources to exert top-down control of empathic responses (Decety & Jackson, 2004; Decety & Lamm, 2006). Without the ability to regulate our responses to other people's emotions, when witnessing another person's emotional state, we may become overaroused and may experience personal distress rather than concern for the other person (see above; Eisenberg & Eggum, 2009). In summary, Decety and Lamm's (2006) framework incorporates both bottom-up and top-down processing, suggesting that it is the reciprocal feedback between these processes that allows us to respond flexibly to others and that is necessary for sophisticated empathic ability.

Insights from the theory of mind and mentalizing literature

Another line of research has aimed to address how we mentally represent and make attributions about other people's thoughts, beliefs and other mental states (Theory of Mind), but has offered different ideas of how we achieve this. According to theory theory (e.g. Gopnik, 1993), we make inferences about other people's mental states using psychological rules and assumptions that link external stimuli with internal mental states and internal mental states with behaviour. These theoretical rules are thought to be learnt and modified by experience. While theory theory has traditionally been offered as an account of how we understand other people's beliefs, intentions and desires, it has been extended to include the understanding of feelings and emotions (Ravenscroft, 1998). The appraisal mediation hypothesis might be considered to be a theory theory approach to how we understand other people's emotions (Siemer & Reisenzein, 2007). This suggests that, to make inferences about a person's emotions, we first consider how they would appraise an emotional event according to a number of different dimensions (e.g. the desirability of an event, who the responsible agent is etc.) and then use stored associations between emotions and these appraisals to make our inferences (Siemer & Reisenzein, 2007).

Theory theory is often placed in opposition to simulation theory, which suggests that we understand the mental states of others by placing ourselves in their situation and simulating their thoughts, actions and feelings using our own mental resources (and generating 'pretend states'; Goldman, 2001, 2006; Gordon, 1995). The last stage of this simulation process is projection or 'imputing' our pretend states to a target (Goldman, 2001, 2006). These pretend states also need to be decoupled from experienced states to prevent them from becoming online and influencing our behaviour (Goldman, 2006). According to this theory, for example, emotional contagion results from a failure to quarantine emotions that arise from simulations from those that result from our own perceptions and memories (Gordon, 1995). Similarly, the use of our own resources is thought to explain many of our errors in predicting other people's mental states (Goldman, 2006; Gordon, 1995). Often the person whose state we seek to understand may hold a different cognitive or perceptual viewpoint than ourselves (e.g. different knowledge, desires etc.), and therefore failure to make adequate adjustments in the initial steps of the simulation may produce egocentric errors (Ravenscroft, 1998). Simulation is sometimes viewed as a higher level mindreading system that works alongside (or is based on) common coding or emotional resonance mechanisms; it is considered to be voluntary, accessible to consciousness, and to depend on prefrontal structures (Coricelli, 2005; Gallese & Goldman, 1998). Simulation theory also has much in common with theories of embodied cognition, which suggest that when observing or thinking about emotions we may re-experience the perceptions and the autonomic and somatic responses that accompany that emotion (Niedenthal, 2007).

More recently, simulation and theorising have been viewed as both playing a role in how we understand the mental states of others, cast as hot and cold mindreading systems, with theory theory seen as a more detached approach to understanding other people's thoughts and feelings (Gordon, 1985; Perner, 1996). One view is that simulation and theory theory are both tools we may use in our attempts to understand others in different contexts (Ames, 2004; Keysers & Gazzola, 2007; Mitchell, Banaji, & Macrae, 2005). For example, it has been suggested that simulation may be an inefficient strategy when the target is perceived to be very different to ourselves, and that in these cases we may rely on rule-based processing (Ames, 2004; Epley & Caruso, 2009). In support of this, Mitchell and colleagues found that when participants made mentalizing judgments about a person, activity in the ventral medial prefrontal cortex, an area implicated in self-processing, was associated with the degree to which participants perceived that person to be similar to themselves (Mitchell et al., 2005). It was suggested that when a target is perceived as similar, individuals may engage in simulation (recruiting the ventral medial prefrontal cortex) to understand their mental states, but that when the target is perceived as dissimilar more theorising routes to understanding others might be used (possibly mediated by the dorsal medial prefrontal cortex; Mitchell et al., 2005; see also Oschner et al., 2005). Alternative proposals concerning the relation between theory theory and simulation have included the idea that psychological laws and assumptions may be used to interpret the output of our simulations (i.e. the representations of the other's state; Adolphs, 2009; Goldman, 2006), that we use implicit theories in our simulations (Goldman, 2006; Perner, 1996, 2005) or that theory theory may underlie the attribution of cognitive mental states, and simulation the attribution of emotional states (Kalbe et al., 2007).

Insights from social psychology

Like simulation theory, dominant models of perspective-taking, stemming from research in social psychology, suggest that we use ourselves as a model to make predictions about others (Epley et al., 2004a, 2004b; Gilovich, Medvec, & Savitsky, 2000; Nickerson, 1999). According to one such model, the anchoring-adjustment hypothesis, we first consider our own feelings and decisions in a situation and then adjust our predictions for perceived differences between ourselves and others (Epley et al., 2004a, 2004b; Gilovich et al., 2000; Nickerson, 1999). Moreover, it has been proposed that the pattern of partially overlapping neural networks in self and other processing may reflect these processes, with common activation relating to the anchoring process and different activation to the adjustment process (Ruby & Decety, 2004). This model has been used to explain many egocentric errors reported in the literature, suggesting that such errors occur as a result of failure to adequately adjust our own predictions for differences between ourselves and others (Epley et al., 2004a). Thus, the tendency of individuals to overestimate the detectability of their lies and their feelings of disgust (the 'illusion of transparency') is interpreted as being a result of difficulty in looking beyond one's own internal experience and knowledge, to adjust for the fact that others do not have access to the same information (Gilovich et al., 2000). It has also been suggested that the initial anchoring phase may be likened to a simulation process, while the adjustment process may be shaped by theories of how different psychological states or characteristics influence behaviour (Epley et al., 2004a).

Van Boven and Loewenstein (2003) have also suggested that, when we are not currently in the situation of the person whose state we are attempting to predict, we may first need to imagine how we would feel or behave in that situation, before adjusting these predictions for any differences between ourselves and that person. According to Van Boven and Loewenstein (2003), biases and errors in self predictions can then introduce additional errors into our predictions about the states of others. In one study, Van Boven and colleagues found that participants overestimated how willing they would be to perform an embarrassing act when their decision was hypothetical (Van Boven, Loewenstein, Welch, & Dunning, 2010). This has been described as a cold-hot empathy gap; where individuals fail to account for the impact of their emotions when making judgments in a 'cold' state (Van Boven & Loewenstein, 2005). Then, in another study, after making a hypothetical or real decision about their own willingness to dance, participants were asked to judge how another student would respond when faced with the decision to dance for money. This revealed that participants were more likely to predict that the other student would be willing to dance when they had previously made a hypothetical judgment about their own willingness to dance than when they had made a real decision (Van Boven et al., 2005). Thus, the cold-hot empathy gap observed when making self predictions was also reflected in their predictions for another person; when in a 'cold state' participants underestimated the impact of emotions on another person's behaviour (Van Boven & Loewenstein, 2005). However, even supporters of the anchoring-adjustment model suggest that we may not always base predictions on self predictions, but may sometimes use stereotypes and intuitive theories about others as a starting point (Ames, 2004; Epley & Caruso, 2009).

Summary of processes

These models differ in their emphasis on bottom-up and top-down processes, affective and cognitive empathy, as well as in their level of explanation (neural or cognitive). However, common to these models is the idea that empathy involves generating mental representations of the other person's state (whether this occurs through automatic activation or resonance, simulation or using rule-based procedures) and requires executive resources such as inhibitory and regulatory control (to inhibit salient alternative representations or perspectives and to keep in check autonomic and somatic responses that may be generated as result of perceiving or processing other people's states).

Modulation of Empathy

Empathic resonance for the emotions of others has been found to occur quite reliably (at least for pain; Bastiaansen et al., 2009), leading to the suggestion that individuals automatically share the emotions of others (Wicker et al., 2003). For instance, empathy-related responses in the pain network have been found when participants observe both loved ones and unknown others in pain (Lamm et al., 2007; Singer et al., 2004; Singer et al., 2006), when participants view just body parts positioned in painful situations (Jackson et al., 2006), and even when participants are not instructed to evaluate the person's emotional state (Singer & Lamm 2009; Singer et al., 2004). However, responding indiscriminately to the emotions of others would not be adaptive; the capacity to respond flexibly is extremely important to prevent us from becoming overwhelmed by the emotions that surround us on a daily basis (Decety & Jackson, 2004). Research has highlighted a large number of factors that modulate both empathic brain responses and the subjective experience of empathy; these may be grouped into factors relating to the target's emotional state, to characteristics of the target, to the situational context and to characteristics of the empathiser (de Vignemont & Singer, 2006; Hein & Singer, 2008).

The target's emotional state

Features of the target's emotional state that have been found to modulate empathic brain responses include the intensity and the saliency of the target's emotion (de Vignemont & Singer, 2006). In one fMRI study, participants viewed video-clips of chronic pain patients either at their standard level of pain (at rest) or during an intense period of (provoked) pain and it was found that activity in the pain network was related to perceived intensity of the patient's pain (Saarela & Hlushhchuk, 2007). Similar findings were observed in a transcranial magnetic stimulation (TMS) study by Avenanti, Paluello, Bulfalari, and Aglioti (2006). In this study, participants observed videos of a needle pricking or deeply penetrating a hand whilst motor-evoked potentials, induced by TMS placed over the primary motor cortex, were recorded from participants' hands. Empathy-related inhibition of motor-evoked potentials was observed only when participants observed a needle penetrating a hand and not when it merely pricked the hand. Another factor that might influence the intensity of the empathiser's emotional response is the valence of a target's emotional state. It is often assumed that empathy for negative states is greater than empathy for positive states (Rozin & Royzman, 2001), though few studies have looked at empathy for positive states (Jabbi, Swart, & Keysers, 2007; Royzman & Rozin, 2006). In one exception, however, Jabbi et al. (2007) showed that the anterior insula and adjacent frontal operculum (IFO), involved in visceral experience, was active when observing actors tasting pleasant, as well as unpleasant, liquids, suggesting that emotional resonance may occur for positive as well as negative states. In addition, although participants rated the unpleasant liquid as more unpleasant than the pleasant liquid was pleasant and showed greater activity in the IFO when tasting the unpleasant liquid themselves, the strength of activity in the IFO when viewing actors drinking the pleasant and unpleasant liquids was not found to significantly differ (Jabbi et al., 2007). In another study, Royzman and Rozin (2006) asked participants to recall times when they had felt happy or sad for a person and to describe the nature of their relationship with that person, finding that participants recalled slightly (but not significantly) more incidences of sympathy (negative empathy) than positive empathy. However, they also found that feelings of positive empathy were more dependent on individuals having an emotional attachment to the other person than sympathy. This might tentatively suggest that empathy for another person's negative experiences may be more readily elicited than empathy for their positive experiences.

Characteristics of the target

A seminal study conducted by Singer and colleagues has shown that characteristics of the person experiencing the emotion can influence empathy (Singer et al., 2006). In this study, before observing a confederate in pain, participants played a Prisoner's Dilemma game with the confederate, who adopted a fair or an unfair strategy, with the effect of inducing positive or negative attitudes towards the confederate. Following this manipulation, reduced empathic responses were observed towards the pain of the unfair player (at least in male participants; Singer et al., 2006). Similarly, there is evidence that individuals display less empathy for a person's bad fortune when that person is perceived as being responsible or deserving of their bad fortune (Brigham, Kelso, Jackson, & Smith, 1997; Decety, Echols, & Correll, 2010; Feather, 2008).

Empathy may also be influenced by the nature of the empathiser's relationship to the target. For example, in one study participants were led to expect a co-operative or a competitive interaction with the target before being exposed to the target's smiles or grimaces (Lanzetta & Englis, 1989). Facial electromyography recordings, skin conductance and heart rate measures all revealed that subjects led to expect a co-operative relationship with the target displayed empathic responses in response to the target's smiles and grimaces. In contrast, when participants expected a competitive relationship, counterempathic responses were observed in response to the target's smiles (e.g. facial muscle patterns consistent with negative expressions) and grimaces (e.g. facial muscle patterns consistent with positive expressions).

The social context

Not only can responses to other people's emotional states be affected by characteristics of the target, but they may also be modulated by information that changes how the target's situation is appraised (Lamm et al., 2007). For instance, in one fMRI study participants viewed video-clips of people in pain as a result of a medical treatment and were led to believe that the treatment was or was not successful. The study found that knowledge about the efficacy of the treatment influenced both participants' emotional ratings and their neural responses to viewing the person's pain, with higher personal distress and greater activity in brain regions involved in affective processing when the treatment was believed to be unsuccessful (Lamm et al., 2007). The results of this study show that top-down processing (cognitive appraisals) can affect reactions to even low-level emotional cues (such as painful grimaces) that readily evoke empathy in observers.

Characteristics of the empathiser

As the study by Preston et al. (2007) described above illustrates, the past experience of the empathiser may be another factor that influences responses to the emotional states of others (see also Batson et al., 1996; Hodges et al., 2010). Placing ourselves into another person's situation and imagining their feelings may be easier if we have previously been in the situation ourselves (Batson et al., 1996). Moreover, experience may not only increase empathy due to common ground between ourselves and others, but may teach us to regulate our response to the emotions of others when it would be maladaptive (Cheng et al., 2007). In a fMRI study, pictures of needles being inserted into different body parts were presented to physicians who practiced acupuncture and to participants with no experience of acupuncture (Cheng et al., 2007). Physicians showed reduced empathic responses in the anterior insula, the anterior cingulate cortex and the somatosensory cortex, suggesting that frequent exposure to a painful context can modulate aversive responses to it. Further, activity in the medial and superior prefrontal cortices and the temporal parietal junction (areas involved in executive control, emotion regulation and theory of mind) was observed in the physician group, suggesting that expert participants regulated their response to pain using top-down control processes.

The empathiser's current experience may also influence their response to another person's emotional state. There is evidence, for example, that an empathiser's emotional state can affect processing of other people's emotional states (de Vignemont & Singer, 2006; Preston

& de Waal, 2002). Healthy individuals in a happy mood display a positive bias, and those in a sad mood a negative bias, in the recognition of emotional facial expressions (Niedenthal, Halberstadt, Margolin, & Innes-Ker, 2000), depressed individuals are more sensitive to negative emotional cues (Leppänen, Milders, Bell, Terriere, & Hietanen, 2004), and anxious individuals have an attentional bias towards threatening faces (Bradley, Mogg, Falla, & Hamilton, 1998). In addition, comparisons between the empathiser's own experience and the other person's emotional experience may also influence responses to the emotions of others (Epstude & Mussweiler, 2009; Festinger, 1954; Smith, 2000). For instance, awareness that another person is advantaged in some way can result in envy, which may then influence responses to the emotional experiences of that person (Brigham et al., 1997; Takahashi et al., 2009). In one study, participants reported greater envy when learning about a superior person than when learning about an average person (Takahashi et al., 2009). This was accompanied by stronger neutral activation in the anterior cingulate cortex and, given its association with pain processing, this was interpreted by the authors to reflect the painful experience of envy (Takahashi et al., 2009). Participants then displayed pleasure on learning about the envied person's misfortune, with associated activity in the ventral striatum, an area linked to reward processing. Thus, empathy may be affected by the current mood and experience of the empathiser, as well as by their past experiences.

Finally, individuals may vary in their dispositional level of responsivity to other people's emotional states (Hein & Singer, 2008). For example, in the study by Saarela and Hlushhchuk (2007) described above, trait empathy was found to be positively related to activity in the left anterior insula and left inferior frontal gyrus when viewing provoked pain in others. Similarly, Singer et al. (2004) found that self-reported empathy was associated with empathy-related responses in the anterior insula and anterior cingulate cortex when observing loved ones in pain, and Jabbi et al. (2007) observed correlations between trait empathy and the anterior insula when individuals viewed video-clips of others tasting unpleasant or pleasant drinks. In addition, gender differences in dispositional empathy are widely talked about, with males often scoring less than females on self-report measures of empathy (Eisenberg & Lennon, 1983; Derntl et al., 2010). However, gender differences have not always been observed on behavioural measures of empathy, leading to the suggestion that gender effects on self-report measure may arise due to demand characteristics or motivational differences between the sexes, rather than differences in empathy as such (Derntl et al., 2010; Eisenberg & Lennon, 1983; Ickes, Stinson, Bissonnette, & Garcia, 1990).

These studies highlight just some of the factors that may affect whether and to what extent empathy is generated and provide evidence for the influence of top-down regulation of empathy. However, the mechanisms underlying the modulation of empathy are not clearly understood. According to Preston and de Waal (2002), factors that modulate empathy can be grouped into two main categories; those that affect perception of emotional cues and those that affect the representations activated. Preston and de Waal's (2002) model assumes that attention to a target's emotional state is required to activate shared representations and to trigger empathy and therefore variables that affect whether the target's state is attended to are likely to influence empathy. These might include features of the target's emotional state such as its salience and intensity, the interdependence of the target and the empathiser, and factors affecting the top-down control of attention, such as task demands and the empathiser's mood and arousal (de Vignemont & Singer, 2006; Preston & de Waal, 2002). Secondly, if empathic responses result from the activation of shared representations, factors that influence the quality of those representations will influence empathy. These might include the similarity of the target to the empathiser and the past experience of the empathiser (Batson et al., 1996; de Vignemont & Singer, 2006; Preston & de Waal, 2002). However, it may be more difficult to account for the influence of cognitive appraisals according to these two classes of explanation, such as effects of person appraisals, social comparisons and the situational context. De Vignmont and Singer (2006) have proposed an early and late appraisal model of empathy to explain how cognitive appraisals modulate empathy. According to the late model, empathic responses are automatically triggered by an emotional cue, but can be modulated by inhibitory or excitatory top-down processes as a result of cognitive appraisals. In contrast, in the early appraisal model, empathic responses are dependent on the evaluation of the emotional cue within the specific context. In many of the studies described above it has not been possible to distinguish between these two routes, but an early appraisal model may better describe modulation in situations in which contextual processing is first necessary to generate empathy (de Vignemont & Singer, 2006).

Aims of Thesis

Most recent work on empathy has focused on emotion understanding and empathy triggered by observable cues; the overarching objective of this thesis was to add to the literature on cognitively-evoked empathy, or empathy generated through perspective-taking, and its modulation. Two main themes extending throughout are the influence of valence and of conflicting emotional experiences on emotional processing. It has been suggested that valence may modulate empathy towards the emotional states of others (de Vignemont & Singer, 2006) and it often assumed that negative empathy is greater than positive empathy (Royzman & Kumar, 2001). However, though phenomenal experience might support this assumption, there is little direct empirical evidence; most studies have focused on a very narrow range of emotional situations and states (e.g. pain), with few looking at positive empathy (Rameson & Lieberman, 2008; Royzman & Rozin, 2006; Singer & Lamm, 2009; this is discussed in more detail in Chapter 3). Furthermore, theoretical ideas of empathy and perspective-taking emphasise the importance of inhibitory control and regulatory processes in representing other people's emotional states and responding empathically (e.g. Decety & Jackson, 2004). In particular, they emphasise the need to inhibit salient alternative perspectives, most often a self perspective (Decety, 2005). Despite this, most studies of empathy have tended to place participants in the role of a neutral observer to a target's emotional state, under conditions where participants may have little self-interest or source of alternative emotions to inhibit. There are also few behavioural paradigms to investigate cognitively-evoked empathy or emotional perspective-taking. This thesis aimed to address these gaps in the literature by first developing a new paradigm and then using this to examine responses to both the good and bad fortunes of others and to consider the effects of contrasting emotional experiences on processing of our own and other people's emotions.

Overview of Chapters

Chapter 2 begins by giving an overview of the various ways in which empathy has been measured and studied, before describing the development of a new behavioural paradigm to investigate emotional perspective-taking and empathy. It reports the findings of Experiment 1, which piloted the paradigm by using it to investigate our ability to switch between two conflicting emotional perspectives. Chapter 3 then considers how responses to the fortunes of others might be influenced by the nature of the target's emotional state (positive or negative) and by the empathiser's own emotional experience. This was examined in Experiment 2 using a modified version of the paradigm developed in Experiment 1. The results of Experiment 2 supported the assumption that negative empathy is greater than positive empathy, and suggested that empathy for the good fortunes of others may be limited by the empathiser's own bad fortune. The following chapter, Chapter 4, describes a number of low-level mechanisms that have been proposed to explain effects of other people's emotions on cognitive and affective judgments (emotional contagion, affective priming and response competition) and considers whether they can explain the effects of the other person's emotional experiences on emotional judgments observed in Experiment 2. The results of two experiments (3 and 4), looking at effects of irrelevant emotional cues on affective judgments, are presented to focus this discussion.

Chapter 5 then considers the question of whether individuals predict empathy in others, or more generally whether they make similar emotional predictions when thinking about others as when thinking about self. This was investigated in Experiments 5-7, finding that individuals appear to anticipate empathy in others, but to a lesser extent than they anticipate empathy in self. Cognitive and motivational biases that may lead to different self and other predictions are discussed. The final empirical chapter, Chapter 6, focuses on top-down modulation of empathy, individual differences in empathy, and the regulatory control of empathy. These were examined in Experiments 8 and 9. Experiment 8 offered further evidence for the effect of negative person appraisals on empathy, with less empathy expressed for the good and bad fortune of a disliked other, but suggested that this may be mitigated by how strongly individuals are predisposed to empathise with others. Experiment 9 then found evidence compatible with the role of moral regulatory mechanisms in empathic behaviour, consistent with the view of empathy as a moral emotion (Eisenberg, 2000; Tangney, Stuewig, & Mashek, 2006). It also suggested that comparisons between another person's good fortune and one's own poorer fortune may be one factor that limits positive empathy for others. Chapter 7 finishes by summarising the results of Experiments 1-9 and by discussing these in relation to theoretical ideas in empathy research.

Chapter 2

Developing a Behavioural Paradigm to Investigate Empathy

Emotions motivate behaviour and therefore being able to understand or predict other people's emotions may give us important clues as to their intended actions (e.g. Fehr & Gächter, 2002; Keltner & Haidt, 1999). The capacity to understand other people's emotions also allows us to adapt and modify our own behaviour, helping us to interact successfully and to develop and maintain relationships with others. For example, knowing that someone would be hurt if we expressed what we truly thought about an unwanted gift allows us to thank the person for the gift gracefully. In our social interactions with others, facial expressions, body language and emotional prosody may all provide cues that allow us to decode other people's emotions (Zaki et al., 2009a). However, individuals do not always show signs of their true feelings or may send out conflicting and ambiguous cues, and there may be times when we only hear or read about a person's experience. In situations where we don't have reliable access to direct information about a person's emotional state, understanding of their feelings may only be possible through cognitive processes, such as perspective-taking (Decety & Jackson, 2004). Emotional perspective-taking is the ability to place oneself into another situation separated in time and/or space in order to appreciate how someone would be affected by that situation.

Currently there are few behavioural paradigms that allow us to study emotional perspective-taking or empathy; the aim of the current study was to develop such a paradigm. Before introducing the study, existing measures of empathy are reviewed.

Measures of Empathy and Emotional Perspective-Taking

In line with the multidimensional nature of the construct, previous approaches to investigating empathy have varied extensively, ranging from behavioural and self-report measures to neural and physiological methods. Its complexity has challenged researchers to find suitable ways to study empathy (Singer & Lamm, 2009) and each approach has its strengths as well as its weaknesses.

Questionnaire measures of empathy

Self-report questionnaires offer a brief and simple means of obtaining a measure of dispositional empathy in everyday life and are based on the idea that empathy is an enduring personality trait that can be reliably measured. A number of scales have been used to assess empathy, including the Empathy Quotient (Baron-Cohen & Wheelwright, 2004) and the Interpersonal Reactivity Index (IRI; Davis, 1983). Self-report measures have been used to look at the relationship between trait empathy and psychological constructs such as the ability to identify the thoughts and feelings of others, but have not always been successful in predicting empathy-related behaviours (Ickes et al., 2000; Levenson & Ruef, 1992; Zaki, Bolger, & Oschner, 2008). However, despite concerns about their predictive validity, questionnaires measures have been widely used to measure individual differences and have discriminated between various clinical populations, including individuals with autism, brain injury and psychiatric conditions such as schizophrenia (Baron-Cohen & Wheelwright, 2004; Montag, Kunz, & Gallinat, 2007; Shamay-Tsoory, Tomer, Berger, & Aharon-Peretz, 2003). More recently questionnaire measures of empathy have been used in conjunction with neural measures of empathy, with significant relationships between self-report measures of empathy and brain activity linked to empathic responding giving validity to neural markers of empathy (e.g. Jabbi et al., 2007; Singer et al., 2004; see below).

Behavioural Measures

Behavioural paradigms have been used to investigate both affective and cognitive empathy.

Affective empathy

A number of studies have assessed empathy by simply asking participants to rate their mood or feelings on viewing or hearing about another person's emotional state. In one study, participants were briefly presented with happy and sad faces and were asked to rate on a scale the extent to which they experienced a range of emotions (Wild et al., 2001). Even with short presentations, participants reported experiencing emotions consistent with the emotional face displayed and reported these emotions with greater intensity the stronger the emotional expression. In another illustrative study, participants watched a video of an interview of a superior or average student and were then informed about the student's deserved academic setback (resulting from his own actions) or undeserved academic setback (beyond his control; Brigham et al., 1997). Afterwards, participants completed a mood questionnaire containing items relating to sympathy (e.g. feeling sad for), and it was found that sympathy for the student was less when he was perceived to be superior and deserving of his misfortune. Other studies have attempted to differentiate between two types of empathic responding: empathic concern (an other-oriented response to another person's emotional state) and personal distress (an aversive self-oriented response to perceiving another person's emotional state). For example, in one study, participants watched video-clips of a person in pain whilst either imagining how they would feel in the place of the person (imagine self) or imagining how the person felt (imagine other), and rated on a 7-point scale how much they experienced a range of emotions relating both to personal distress (e.g. troubled, upset etc.) and to empathic concern (e.g. compassion, soft-hearted etc; Lamm et al., 2007). This and other similar studies have found that imagining self in adverse situations results in stronger personal distress than imagining other in the same situations, but that imagining other in adverse situations results in stronger empathic concern than imagining self (Batson, 2009; Lamm et al., 2007).

Rating measures have the advantage of being easy to administer and are sensitive to effects of perspective-taking instructions (Batson, 2009; Lamm et al., 2007) and to modulation by factors such as deservingness (Brigham et al., 1997). However, concerns have been raised over the extent to which individuals experience the emotions that the ratings attempt to capture (Siemer & Reisenzein, 2007) and it has been suggested that rating measures may reflect beliefs about emotions rather than the experience of emotions (Dunn & Ashton-James, 2008; Robinson & Clore, 2001, 2002ab). In addition, these measures may sometimes be influenced by experimenter demand and social presentation concerns. Despite this, the findings of many of these behavioural studies have since found support from the findings of neuroimaging studies, which have observed activation in brain regions consistent with the behavioural reports of participants. For example, Decety et al. (2010) found that participants showed reduced empathic brain responses to observing the pain of an individual believed to have caught AIDS from drug use compared to an individual thought to have caught AIDS through an infected blood transfusion, consistent with the effects of perceived deservingness on empathy found by Brigham et al. (1997).

Cognitive empathy & perspective-taking

A large body of literature has looked at how we come to recognise emotions from facial expressions (for a review see Adolphs, 2006), but low-level emotion recognition is not the focus of this thesis and so it is not discussed further here. One of the most widely used paradigms of cognitive empathy was developed by Ickes and colleagues to investigate the ability to accurately identify the thoughts and feelings of others (empathic accuracy; Ickes, 2009; Ickes et al., 1990). In this paradigm, an interaction between two individuals discussing various topics is videotaped and afterwards each partner in the interaction separately views the recording and is asked to report their thoughts at different points in the episode. Finally, participants are asked to infer the other person's thoughts and feelings, and the degree to which there is consistency between the reported and the inferred thoughts and feelings is taken as measure of empathic accuracy. This method has been used to look at factors affecting accuracy in predicting another person's thoughts and feelings, such as motivation (Klein & Hodges, 2001; Myers & Hodges, 2009), past experience (Hodges, 2005; Hodges et al., 2010), familiarity (Stinson & Ickes, 1992) and intelligence (Ickes et al., 1990). The strength of this paradigm is that it is offers a degree of ecological validity, but it is also very time consuming and does not offer the same control over extraneous variables as more experimental methods.

A different approach has been to describe hypothetical or future situations and to ask participants to imagine how they or someone else would feel or act in that situation (e.g. Pollman & Finkenauer, 2008; Van Boven & Loewenstein, 2003; Van Boven et al., 2005). Studies using this approach have revealed various biases in emotional predictions, showing, for example, that individuals have a tendency to overestimate the intensity of their feelings in predicting their response to emotional events (Pollman & Finkenauer, 2008).

Physiological measures

In light of criticisms of emotional reports (described above), some researchers have used physiological measures, such as heart rate, skin conductance responses and respiration rate, to measure affective empathy (Decety & Chaminade, 2003; Lanzetta & Englis, 1989; Preston et al., 2007). However, a problem with many of these measures is that they are not very sensitive to valence (positive or negative) and may only provide a measure of arousal (Critchley, Elliott, Mathias, & Dolan, 2000; Kalbe et al., 2007). Moreover, these measures are also sensitive to cognitive conflict and responses may reflect conflict or effort rather than emotional arousal (Mitchell, 2006). For example, Decety and Chaminade (2003) investigated the effect of incongruent facial expressions and emotional context on empathic responses, only finding increased skin conductance responses when there was conflict between the two emotional cues (i.e. when the context was a sad situation, but the person describing the situation displayed a happy expression). A physiological measure that has allowed greater differentiation of emotions is facial electromyography (EMG; e.g. Dimberg et al., 2000). This technique measures minute changes in muscle position that may not be directly perceivable. Using EMG, Dimberg et al. (2000) have shown that individuals produce matching facial muscle patterns to happy and angry faces, even at extremely short exposures. Even with EMG, however, some have questioned to what extent individuals are feeling the emotions of the target, rather than simply responding as a result of motor mimicry (Dimberg et al., 2000). Against this, compatible facial movements have between detected in response to emotional vocal tones and in response to imagery of emotional situations, which may be harder to explain in terms of motor mimicry (Hietanen, Surakka, & Linnankoski, 1998; Schwartz, Fair, Salt, Mandel, & Klerman, 1977).

Neural measures

Many recent studies in the empathy and perspective-taking literature have taken advantage of developments in neuroscientific techniques, and fMRI in particular, to investigate the neural basis of empathy and its modulation. Observing or hearing about another person's emotional state has been shown to activate brain structures involved in the experience of emotions (e.g. Bastiaansen et al., 2009; Rameson & Lieberman, 2009; Singer & Lamm, 2009). For example, observing video-clips of individuals expressing disgust has been found to activate the anterior insula, a region also involved in the affective experience of disgust (Wicker et al., 2003). It is this mapping between the perception of another person's emotional state and the experience of emotions that has been used as a marker of empathy (Singer & Lamm, 2009). Researchers have then investigated how various factors, such as cognitive appraisals, affect the strength to which a target's emotional state activates these common neural networks in order to draw conclusions about empathy's modulators (Hein & Singer, 2008).

Neuroscientific techniques have also been used to investigate cognitive empathy, using tasks that require the attribution of emotion to protagonists in written scenarios, cartoons or photographs (Hooker et al., 2008; Hynes et al., 2006; Oschner et al., 2004a; Völlm et al., 2006). These studies have revealed that attributing emotions to others recruits a similar network of brain areas to mentalizing about the intentions and beliefs of others, including the medial prefrontal cortex and the temporo-parietal junction, and activity in these regions is now often used as evidence of mentalizing about others.

The strength of such methods is that empathic responses may be less susceptible to experimenter demand and social presentation concerns. However, neural markers of empathy can not say whether individuals are experiencing the emotions at a conscious level (Rameson & Lieberman, 2009). It may be necessary to supplement such findings with ratings or physiological evidence. Further, supporting data and the behavioural design of the task used in the scanner are often critical to the interpretation of neuroimaging research (Cacioppo et al., 2003).

Input used in the induction of empathy

Behavioural, neural and physiological studies of empathy have all used various inputs (bottom-up and top-down) to generate empathy or emotional understanding in participants. Most commonly, researchers have used pictures of actors displaying different facial expressions, or pictures or videos of emotional situations (with and without audio content) to study empathy and emotional perspective-taking (e.g. Decety & Chaminade, 2003; Lamm et al., 2007; Zaki et al., 2009a). In other studies, participants read or listen to short vignettes and are required to imagine the situations (e.g. Ruby & Decety, 2004; Preston et al., 2007). There are clearly differences in the initial processing of these inputs, but the output can be remarkably similar. For example, one study observed similar activity in the anterior insular and adjacent frontal operculum when imagining disgust vignettes, when observing disgust faces and when experiencing disgust (Jabbi, Baastiansen, & Keysers, 2008).

The Current Study

As reviewed above, self-report, behavioural, neural and physiological methods have all contributed to the study of empathy and the strengths of one can often compensate for the weaknesses of another. The main objective of the current study was to develop a behavioural measure to look at higher level processes in empathy. In previous studies, participants have been asked to judge how either they would feel or how someone else would feel in a particular situation, but in situations where there is only one salient perspective (e.g. Ruby & Decety, 2004). In our everyday social interactions there may be multiple and contrasting emotional perspectives present. For example, imagine forgetting your friend's birthday. How would you feel? How would your friend feel? Few existing measures of empathy consider how we predict the feelings of individuals in interpersonal situations where two or more individuals have conflicting emotional perspectives; this was the rationale for the current study.

The paradigm developed involved presenting a series of brief written scenarios in a forced choice response time task. Scenarios described events that would be expected to evoke an emotional response in one or two protagonists. These scenarios described just one person's perspective, with either a self- or other-referent, or described an interaction between two people with conflicting perspectives (self- and other-referent). Participants read the scenarios and made rapid judgments about how they or the other person would feel in the scenario from a forced choice of two emotions.

Hypotheses

Any new task of emotional perspective-taking should be able produce effects that might be predicted based on previous findings and theoretical ideas of perspective-taking. Perspective-taking requires the attribution of a mental state to a person and may require inhibition of alternative perspectives. For instance, in order to understand a person's false belief, we may have to inhibit what we know to be true (Friedman & Leslie, 2004). This can sometimes be an effortful process, with previous studies finding a cost involved in making judgments about one person's reality when there is a conflicting perspective present (Apperly, Back, Samson,

& France, 2008). Therefore, it was expected that there would be a cost in identifying the feelings of a person when there were conflicting cues to another person's perspective present.

Self perspectives, being easily accessible, are often assumed to be especially salient and difficult to inhibit (Gilovich et al., 2000). A conflicting self perspective has been found to interfere in judgments about another person's perceptual point of view (Samson, Apperly, Braithwaite, Andrews, & Bodley Scott, 2010), and about another person's knowledge (Epley et al., 2004a; Keysar, Barr, Balin, & Brauner, 2000). The self perspective in the current study was only an imagined self, but a number of studies have shown that even information processed with respect to self receives a processing advantage and that individuals quickly take ownership of material even minimally linked to self (self reference effect; Cunningham, Turk, Macdonald, & Macrae, 2008; Symons & Johnson, 1997). Following this, it was expected that, in situations of conflicting perspectives, the imagined self perspective would be more salient and difficult to inhibit than the other person's perspective.

Perspective-taking models suggest that adopting another person's perspective involves an additional stage of transformation than imagining how one self would feel (Epley et al., 2004b; Gilovich et al., 2000; Nickerson, 1999). Such models might predict a small delay in judging another person's emotions compared to judging one's own even without a conflicting perspective present (Jackson et al., 2006). However, it has also been suggested that individuals are cognitively lazy and may only adjust their self predictions to the extent that they have the motivation and cognitive resources, and that they perceived the other person to be different to themselves (Epley et al., 2004b; Gilovich et al., 2000; Nickerson, 1999). In the current study, where the other is unknown and the response is restricted to a forced choice, there is little need to make adjustments to self predictions and therefore it was predicted that there would be little response time difference in making self and other judgments when there was no conflicting perspective present.

Due to a lack of studies looking at emotional perspective-taking in interpersonal situations of conflicting perspectives, it is not yet clear what factors may make it easier or harder to adopt another person's emotional perspective. One factor may be how easy it is to discriminate between the emotions of the two perspectives. Previous studies have suggested that events are first evaluated on a valence dimension, followed by appraisals that allow identification of discrete emotions (e.g. Ruys & Stapel, 2008). If information about valence becomes available before identification of the specific emotion, then it should be easier to identify how a person would feel when only a valence discrimination (e.g. happy and sad) is required to answer accurately than when it is necessary to discriminate between two discrete emotions (e.g. sad and angry). To explore this, two different types of scenarios were presented to participants. In the first type of scenario (same valence scenarios), both the self and the other perspective was described by a negative emotion. For example, in one scenario, one person was described as waiting for over an hour because the other person was late for a social date (an angry-guilty scenario). In the second type of scenario (different valence scenarios), one perspective was described by a positive emotion and the second by a negative emotion. For example, in one scenario one person was described as failing an exam and the other as passing an exam (a sad-happy scenario). This allowed examination of whether valence congruency influences the ability to disambiguate conflicting perspectives.

Pilot Experiment

METHOD

Participants

21 participants completed the pilot questionnaire, though one participant's (46 yr old female) data was excluded due to not fully completing the questionnaire. This left 20 participants (13 female), with ages ranging from 19-59 years (M = 36 years, SD = 14.20). All participants were native English speakers.

Scenario Construction

140 short written scenarios were constructed through introspection and from inspiration from examples provided in the literature (e.g. Ruby & Decety, 2004; Siemer & Reisenzein, 2007). The scenarios described events that might be expected to elicit one of the following emotions: anger, sadness, guilt, embarrassment, disgust, fear and happiness. The scenarios described fairly typical everyday events and ranged in intensity from events such as spilling tea down a new top to events such as breaking up with a partner. The scenarios were first written to describe two conflicting perspectives, describing an interaction between two individuals, each having a different emotional point of view. For example, 'You go to an expensive restaurant with Kim and volunteer to pay because she always pays. At the end of the meal, you discover you have forgotten your wallet. Kim has to pay for both of you.' From these scenarios, two versions of the scenario were derived with no conflicting perspective (one for each of the two perspectives in the conflict version). No conflict scenarios, then, described one perspective, using either the second ('You') or third person (S/he) pronouns. For example, 'You go to an expensive restaurant and volunteer to pay. At the end of the meal you discover that you have forgotten your wallet and are unable to pay.' In some of the conflict scenarios, the emotions expected to be elicited in the two protagonists were different but of the same valence (negative-negative; e.g. embarrassed-angry), and in others they were of different valence (positive-negative; e.g. happy-sad). Scenarios were piloted in order to verify that the intended emotion could be clearly identified and that the emotions of the two perspectives in the conflict condition were perceived as clearly different.

Procedure

Only the no conflict scenarios were piloted as combinations of these made up the conflict scenarios. Therefore, presenting the no conflict versions would give an indication of whether the intended emotions of the two perspectives could be clearly identified and distinguished when presented in isolation. For the purpose of the pilot, scenarios were presented with a self-referent (You). Participants were divided into two equal groups and each group was presented with one of the two no conflict versions of the 140 scenarios (83 same valence and 57 different valence). Participants were asked to imagine how they would feel in each scenario and to select from a list of 7 emotions (anger, disgust, embarrassed, fear, guilty, happy, sad) the one emotion they would feel most. They were then asked to select any other emotions they would feel in the scenario and to mark this separately. Participants were given the option to provide an alternative emotion if they thought it was appropriate. Finally, participants were asked to rate how difficult they found it to choose an emotion for each scenario on a 5-point likert scale from very easy (1) to very difficult (5).

SCENARIO SELECTION AND DISCUSSION

It was important that the two emotional perspectives in the conflict versions of scenarios could be clearly distinguished when they were presented in isolation. Scenarios which did not fulfil this requirement were discarded. In total, 32 same valence scenarios and 32 different valence scenarios were selected from those pretested using the criteria in Table 2.1. Few disgust and fear scenarios met these criteria and were therefore not included as target emotions, leaving the target emotions sad, anger, guilt, embarrassed and happy. In the selected scenarios, the intended emotions of each perspective were recognised by the majority of participants, with the identified emotion being different for the two alternative emotional perspectives of each scenario. The properties of the selected scenarios are displayed in Table 2.2 and examples are provided in Table 2.3 here and in the Appendix. These scenarios were then used to investigate the effect of perspective conflict on emotional perspective-taking.

Table 2.1

Criteria for Scenario Selection

Criteria
1) The intended emotions of both of the two no conflict versions of each scenario were selected by at least 70% of participants as the primary or secondary emotion they would feel.
2) The intended emotion of each of the two no conflict versions of each scenario was selected by less than 30% of participants either as the primary or as a secondary emotion of the alternative no conflict version.
3) The difficulty rating of both versions of each scenario was rated as less than 2.5 (out of 5), indicating low difficulty in identifying an emotion.

Table 2.2

Properties of Selected Scenarios Used in Experiment 1. Range in parentheses.

Average Difficulty Rating (Criteria 3)		1.6 (1-2.4)
Average % participants selecting intended emotion (Criteria 1)		90% (70-100%)
Average % participants selecting emotion of alternative no conflict version (Criteria 2)		5% (0-30%)
Distribution of target emotions (% of trials)	Angry	25%
	Embarrassed	14%
	Guilty	14%
	Happy	25%
	Sad	22%

Experiment 1

METHOD

Participants

32 participants (19 female) were recruited from across the University of Nottingham and received a small inconvenience allowance for their participation. Ages of participants ranged between 18 and 42 years (M = 22.3 years, SD = 5.46). All participants were native English speakers.

Design

A within subject 2x2x2 factorial design was used in a two alternative forced choice reaction time paradigm. The factors manipulated were conflict (no conflict/conflict), perspective (self/other) and valence congruency (same/different). No conflict and conflict scenarios were blocked, with mixed self and other scenarios and mixed same and different valence scenarios within each block. Half of the participants completed the no conflict condition first and the conflict condition second and the remaining participants performed the conflict condition first and the no conflict condition second. For both conditions, participants first completed a practice block of 12 trials.

Stimuli

To recall, for each of the 64 selected scenarios (described above) there was one conflict and two no conflict versions. Within these, each perspective could be represented by a self- or other-referent and the target could be self or other. This created 8 different types of trial for each scenario (see Table 2.3). One version of each scenario was allocated to a different experimental list, creating 8 experimental lists, and participants were randomly allocated to one of these lists so that they only saw each scenario once. Each list contained 32 no conflict and 32 conflict trials, half of the no conflict and half of the conflict trials were same valence scenarios and half were different valence scenarios, within which half required self judgments and half required other judgments (see Table 2.4).

Procedure

Participants completed the emotion judgement task on a PC computer, with the task programmed using E-prime (Schneider, Eschman, & Zuccolotto, 2002). Participants were introduced to the 'other' protagonist by name and a silhouette portrait only. The 'other' protagonist was gender congruent with the participant (Kim or Max). Each scenario was preceded by a fixation cross, presented in the centre of the screen for 500ms, and participants were then able to self-pace their reading of the scenario by pressing the spacebar when they had read each sentence. Scenarios were presented over two displays in the no conflict condition and over three displays in the conflict condition. The response display was triggered by the participant pressing the spacebar after reading the final sentence in the scenario. This display presented the perspective cue (You or Max/Kim) at the top and a choice of two emotions either side of the fixation point (see Figure 2.1). The alternative emotion in the forced choice was always the target emotion of the alternative perspective of each scenario and the target emotion was presented on the left or right of the fixation point for an equal number of trials. Participants were require to select the emotion closest to how they or the other protagonist would feel in the scenario by pressing one of two keys on the keyboard. They were instructed to respond quickly and accurately. Participants were given a maximum of 10000ms to respond before the next scenario was presented.

Table 2.3

Example of a Same and a Different Valence Scenario Presented in the 8 Different Conditions. Each Scenario Described Either One (No Conflict) or Two (Conflict) Emotional Perspectives and Participants were Asked to Make Self or Other judgments.

	1st Perspective	2nd Perspective	Target	Example of a Same Valence Scenario	Example of a Different Valence Scenario
No Conflict	Self Referent	xxx	You	'You go to an expensive restaurant and volunteer to pay. At the end of the meal you discover that you have forgotten your wallet and are unable to pay.'	'You fall out with a good friend after a big argument. After 3 months of not speaking the friend is still angry with you and won't talk to you.'
	xxx	Self Referent	You	'You go to an expensive restaurant with friends. They hear about a party and leave early. You are left to pay the whole bill.'	'You fall out with a good friend after a big argument. After 3 months of not speaking the friend invites you out for drinks and you make-up.'
	Other Referent	xxx	S/he	'Kim goes to an expensive restaurant and volunteers to pay. At the end of the meal she discovers that she has forgotten her wallet and is unable to pay.'	'Kim falls out with a good friend after a big argument. After 3 months of not speaking the friend is still angry with Kim and won't talk to her.'
	xxx	Other Referent	S/he	'Kim goes to an expensive restaurant with friends. They hear about a party and leave early. She is left to pay the whole bill.'	'Kim falls out with a good friend after a big argument. After 3 months of not speaking the friend invites Kim out for drinks and they make-up.'

Table continued on next page

	1st Perspective	2nd Perspective	Target	Example of a Same Valence Scenario	Example of a Different Valence Scenario
Conflict	Self Referent	Other Referent	You	'You go to an expensive restaurant with Kim and volunteer to pay because she always pays. At the end of the meal, you discover you have forgotten your wallet. Kim has to pay for both of you.'	'Kim and you fall out with a good friend after a big argument. After 3 months of not speaking the friend invites Kim out for drinks and they make up. The friend is still angry with you and doesn't invite you.'
	Other Referent	Self Referent	You	'Kim goes to an expensive restaurant with you and volunteers to pay because you always pay. At the end of the meal, she discovers she has forgotten her wallet. You have to pay for both of you.'	'You and Kim fall out with a good friend after a big argument. After 3 months of not speaking the friend invites you out for drinks and you make up. The friend is still angry with Kim and doesn't invite her.'
	Self Referent	Other Referent	S/he	'You go to an expensive restaurant with Kim and volunteer to pay because she always pays. At the end of the meal, you discover you have forgotten your wallet. Kim has to pay for both of you.'	'Kim and you fall out with a good friend after a big argument. After 3 months of not speaking the friend invites Kim out for drinks and they make up. The friend is still angry with you and doesn't invite you.'
	Other Referent	Self Referent	S/he	'Kim goes to an expensive restaurant with you and volunteers to pay because you always pay. At the end of the meal, she discovers she has forgotten her wallet. You have to pay for both of you.'	'You and Kim fall out with a good friend after a big argument. After 3 months of not speaking the friend invites you out for drinks and you make up. The friend is still angry with Kim and doesn't invite her.'

Table 2.4

Number of Scenarios Presented in Each Condition to Each Participant in Experiment 1

Conflict	Scenario Type	Perspective	No. of Scenarios
No Conflict	Same Valence	Self	8
No Conflict	Same Valence	Other	8
No Conflict	Different Valence	Self	8
No Conflict	Different Valence	Other	8
Conflict	Same Valence	Self	8
Conflict	Same Valence	Other	8
Conflict	Different Valence	Self	8
Conflict	Different Valence	Other	8

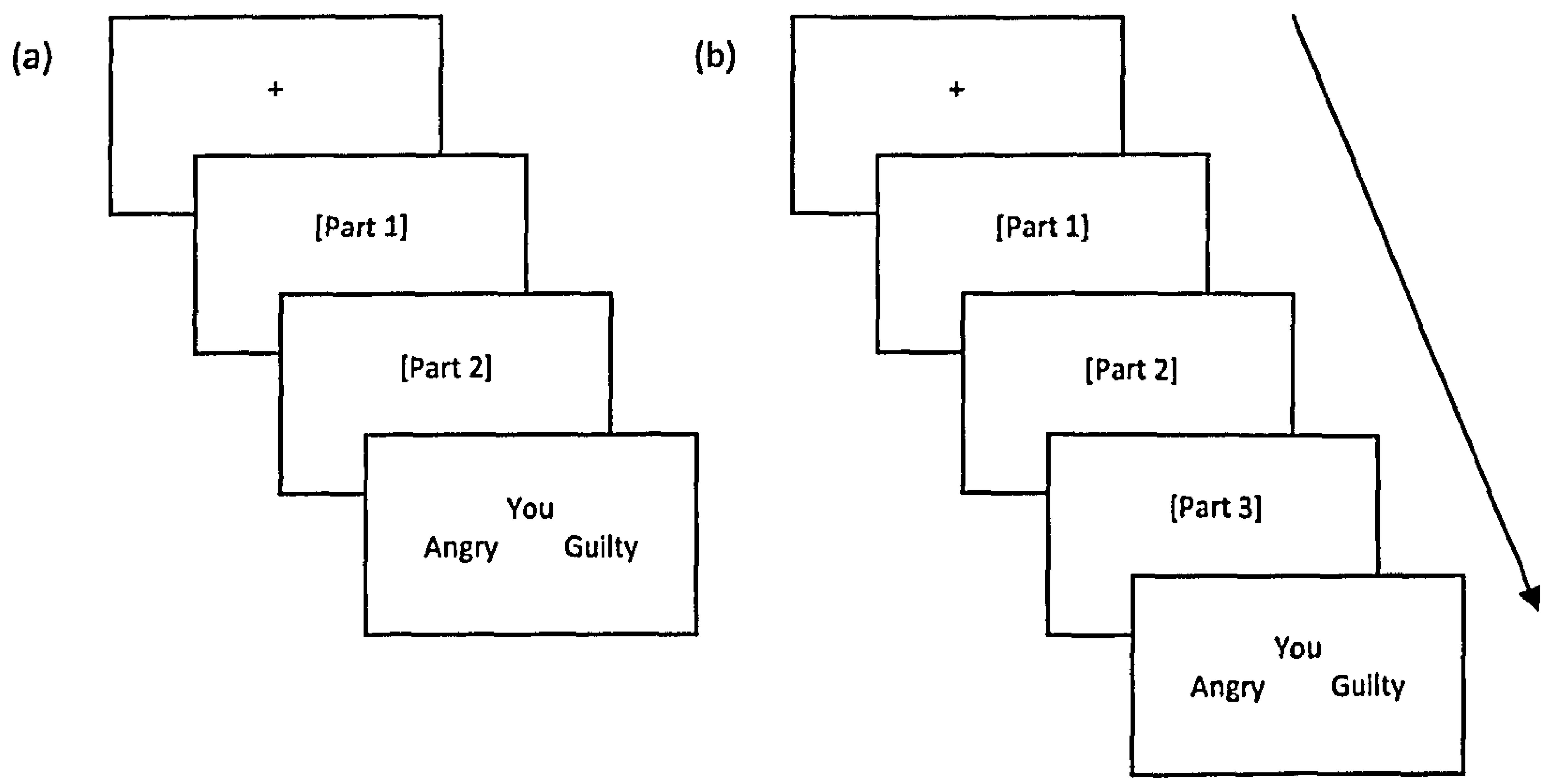

Figure 2.1. Schematic representation of the procedure in the no conflict (a) and conflict (b) conditions of Experiment 1. Participants self-paced their reading of each scenario before rapidly judging how they or the other person would most feel in the scenario using a forced choice response.

RESULTS

Effects of perspective, conflict and valence congruency

Response times and accuracy were first entered into a 2x2x2 (perspective x conflict x valence congruency) ANOVA.

Response Times (see Figure 2.2a)

Only response times for correct responses were analysed. This resulted in 4.69% of data in the no conflict condition and 12.80% of data in the conflict condition being excluded. An arbitrary cut off of 5000ms[1] was used to remove extreme outliers. This resulted in removal of less than 1% of data points in both the conflict and no conflict conditions. Responses times were positively skewed, with skewness and kurtosis values of 4.76 and 1.80 and therefore data was also analysed using log transformed response times to check reliability. As the same effects were observed and as data transformation is considered controversial (Aron & Aron, 1999), analyses of the untransformed response times are reported.

The response time analysis showed a main effect of perspective, with faster self judgments (M = 1411.79ms) than other judgments (M = 1481.12ms; $F(1,31) = 5.34, p < 0.05, \eta_p^2 = 0.15$) and a main effect of conflict, with slower judgments when a conflicting perspective was present (M = 1660.98ms) than when there was no conflict (M = 1231.92ms; $F(1,31) = 104.32, p < 0.001, \eta_p^2 = 0.77$). The interaction between perspective and conflict did not reach significance ($F(1,31) = 2.09, p = 0.16, \eta_p^2 = 0.06$), but because it was predicted that effects of perspective would be greater on conflict scenarios, planned comparisons were performed. This revealed that self judgments were faster (M = 1588.04ms) than other judgments on conflict trials (M = 1696.80ms; $t(31) = 2.13, p < 0.05$). In contrast, self judgments (M = 1213.66ms) were not faster than other judgments on no conflict trials (M = 1238.86ms; $t(31) = 0.87, p = 0.39$). Both other judgments ($M_{Conflict}$ = 1696.80ms vs. $M_{No\ Conflict}$ = 1238.86ms;

[1] The average response times for all participants fell within 2SD of this value.

$t(31) = 7.09, p < 0.001$) and self judgments ($M_{Conflict} = 1588.04$ms vs. $M_{No\ Conflict} = 1213.66$ms; $t(31) = 7.09, p < 0.001$) were slower when there was a conflicting perspective present compared to when there was no conflict.

The analyses also revealed differences between the same and different valence scenarios. There was a significant effect of valence congruency ($F(1,31) = 32.19, p < 0.001, \eta_p^2 = 0.51$), with faster response times in the different valence condition ($M = 1359.85$ms) than in the same valence condition ($M = 1533.06$ms). There was also an interaction between conflict and valence congruency ($F(1,31) = 7.77, p < 0.01, \eta_p^2 = 0.20$). Further analyses revealed that responses were significantly faster for different valence scenarios ($M = 1088.90$ms) than for same valence scenarios when there was no conflicting perspective present ($M = 1370.31$ms; $t(31) = 7.79, p < 0.001$). In contrast, when there was a conflicting perspective present, responses were not significantly faster in different valence scenarios ($M = 1623.46$ms) than in same valence scenarios ($M = 1691.49$ms; $t(31) = 1.17, p = 0.25$). Responses times were slower when a conflicting perspective was present than when there was no conflict for both different valence scenarios ($M_{Conflict} = 1623.46$ms vs. $M_{No\ Conflict} = 1088.90$ms; $t(31) = 8.89, p < 0.001$) and same valence scenarios ($M_{Conflict} = 1691.49$ms vs. $M_{No\ Conflict} = 1370.31$ms; $t(31) = 6.00, p < 0.001$). There was no three-way interaction between perspective, conflict and valence ($F(1,31) = 0.31, p = 0.58, \eta_p^2 = 0.10$).

Accuracy (see Figure 2.2b)

There was no main effect of perspective ($M_{Self} = 90.60\%$ vs. $M_{Other} = 92.20\%$; $F(1,31) = 1.28, p = 0.27, \eta_p^2 = 0.04$), but there was a main effect of conflict ($F(1,31) = 20.91, p < 0.001, \eta_p^2 = 0.40$), with accuracy lower when a conflicting perspective was present ($M = 87.40\%$) than when there was no conflict ($M = 95.40\%$). Again, even though there was not a significant interaction between perspective and conflict ($F(1,31) < 1, \eta_p^2 = 0.00$), planned comparisons were performed to determine whether an effect of perspective was present only on conflict trials. This revealed no difference in accuracy between self ($M = 94.44\%$) and other judgments on no conflict trials ($M = 96.41\%$; $t(31) = 1.37, p = 0.18$) and no difference in accuracy between self ($M = 86.69\%$) and other judgments on conflict trials ($M = 88.03\%$; $t(31) = 0.5, p = 0.57$).

There was no main effect of valence congruency ($M_{Same} = 91.40\%$ vs. $M_{Different} = 91.40\%$; $F(1,31) < 1, \eta_p^2 = 0.00$), but there was again a significant interaction between conflict and valence congruency ($F(1,31) = 11.24, p < 0.01, \eta_p^2 = 0.27$). Further analyses revealed that accuracy was higher in the different valence condition ($M = 98.11\%$) than in the same valence condition when no conflicting perspective was present ($M = 92.70\%$; $t(31) = 4.09, p < 0.001$). In contrast, if anything, accuracy was lower in different valence scenarios ($M = 84.75\%$) than in same valence scenarios when a conflicting perspective was present ($M = 90.02\%$; $t(31) = 1.77, p = 0.09$). In addition, accuracy was lower in the conflict condition ($M = 84.75\%$) than in the no conflict condition for different valence scenarios ($M = 98.11\%$; $t(31) = 4.92, p < 0.001$), but a conflicting perspective ($M = 90.02\%$) did not significantly reduce accuracy in same valence scenarios compared to scenarios of no conflict ($M = 92.70\%$; $t(31) = 1.37, p = 0.18$). There was no three-way interaction between perspective, conflict and valence ($F(1,31) = 1.00, p = 0.33, \eta_p^2 = 0.03$).

Summary

Participants were slower and less accurate in identifying someone's feelings when there was a conflicting perspective present. Interference from a conflicting perspective was particularly strong (in response times) when it was associated with the self. When there was no conflicting perspective present, individuals were faster and more accurate in identifying a person's feelings when only a valence discrimination was required (different valence scenarios) compared to when they were required to distinguish between specific emotions (same valence scenarios). However, this response time advantage disappeared and accuracy was lower in the different valence scenarios than in the same valence scenarios when a conflicting perspective was present. Visual examination of the data suggested that, on different valence scenarios, errors were particular pronounced when the target perspective was positive, but the other person's perspective was negative. Participants, on average, made errors on about 23% of these scenarios, such as one which described the target as being offered a place at a prestigious university (the target emotion being 'happy') and the other person as getting a rejection letter (the alternative emotion being 'sad'). To examine this statistically, the accuracy of participants on different valence scenarios was analysed in a 2x2x2 repeated ANOVA of conflict (no conflict/conflict), perspective (self/other) and target valence (positive/negative). The low number of trials and the high number of errors meant it was not possible to reliably analyse response times in the same way.

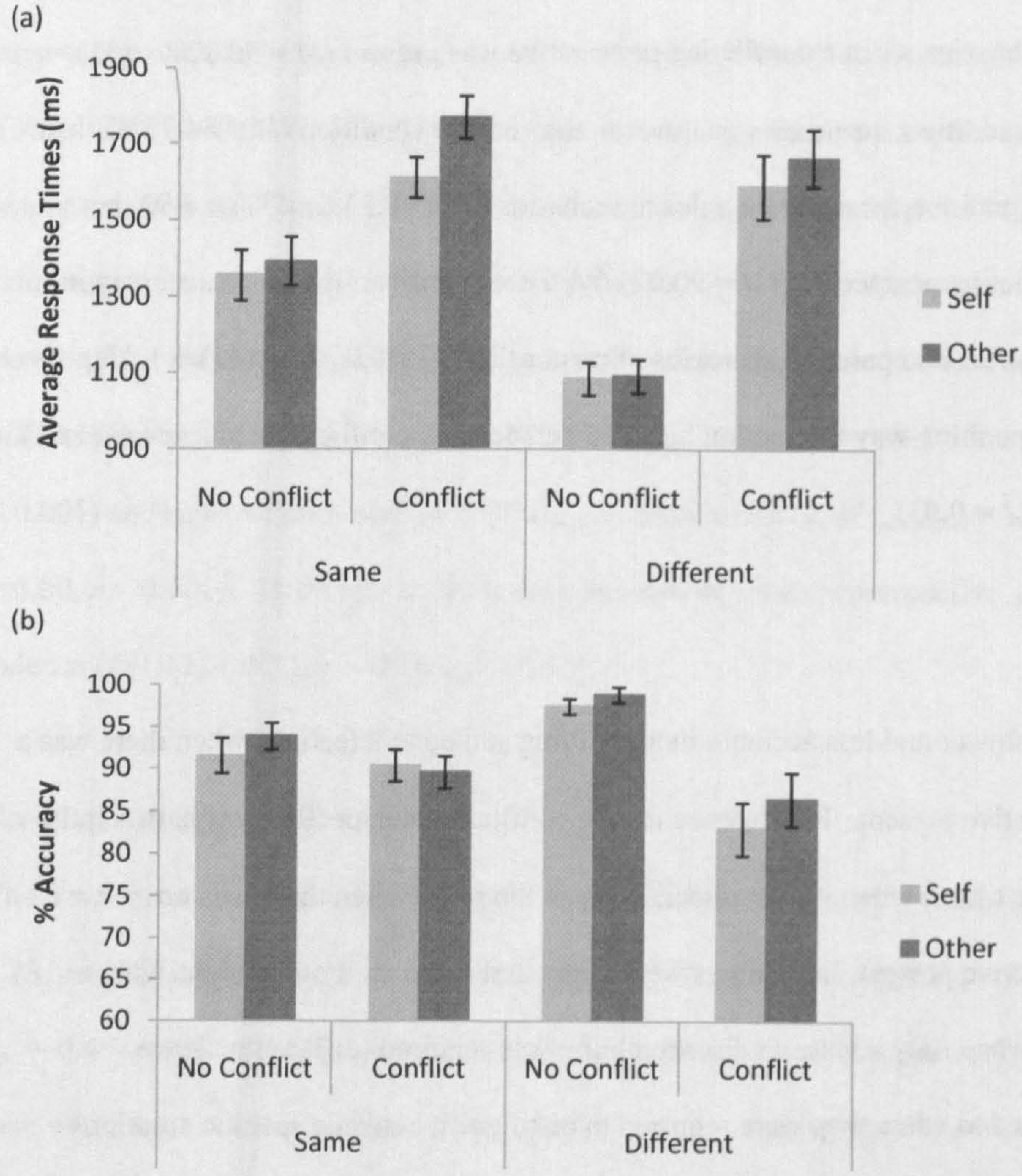

Figure 2.2. Average responses times (ms) to judge emotions for self and other (a) and percentage of correct responses (b) in same and different scenarios and with and without conflict in Experiment 1 (1 standard error bars displayed).

Effect of Emotional Valence (see Figure 2.3)

This analysis confirmed that there was no effect of perspective on accuracy in the different valence condition ($F(1,31) = 1.47, p = 0.24, \eta_p^2 = 0.05$) and confirmed that there was an effect of conflict ($F(1,31) = 24.51, p < 0.001, \eta_p^2 = 0.44$). There was also an effect of target valence ($F(1,31) = 23.97, p < 0.001, \eta_p^2 = 0.44$); participants were less accurate when the target emotion was positive ($M = 87.50\%$) than when the target emotion was negative ($M = 95.10\%$). However, the effect of target valence was qualified by a conflict and target valence interaction ($F(1,31) = 14.35, p = 0.001, \eta_p^2 = 0.32$). Participants were only less accurate on positive trials ($M = 77.34\%$) than on negative trials when there was a conflicting perspective present ($M = 91.80\%$; $t(31) = 4.54, p < 0.001$). In contrast, participants were as accurate on positive trials ($M = 97.66\%$) as on negative trials when there was no conflict ($M = 98.44\%$; $t(31) = 0.70, p = 0.49$). Accuracy was lower when a conflicting perspective was present on both positive ($M_{Conflict} = 77.34\%$ vs. $M_{No\ Conflict} = 97.66\%$; $t(31) = 5.03, p < 0.001$) and negative trials ($M_{Conflict} = 91.80\%$ vs. $M_{No\ Conflict} = 98.44\%$; $t(31) = 2.96, p < 0.01$), but a conflicting negative perspective interfered in judgments more than an conflicting positive perspective. In other words, a conflicting negative perspective appeared to be difficult to inhibit when attributing positive emotion to a person receiving good news.

There was also a significant interaction between perspective and target valence ($F(1,31) = 5.74, p < 0.05, \eta_p^2 = 0.16$). Both self ($M_{Negative} = 95.31\%$ vs. $M_{Positive} = 84.77\%$; $t(31) = 5.00$, $p < 0.001$) and other judgments ($M_{Negative} = 94.92\%$ vs. $M_{Positive} = 90.23\%$; $t(31) = 2.55, p < 0.05$) were more accurate on negative than on positive trials. However, participants were less accurate on positive trials when making self judgments ($M = 84.77\%$) than when making other judgments ($M = 90.23\%$; $t(31) = 2.24, p < 0.05$). In contrast, there was no difference between self ($M = 95.31\%$) and other judgments on negative trials ($M = 94.92\%$; $t(31) = 1.62$, $p = 0.87$). Although, the three-way interaction was not significant ($F(1,31) = 1.20, p = 0.28$, $\eta_p^2 = 0.04$), the effect of perspective on positive trials was more evident on conflict scenarios ($M_{Self} = 73.44\%$ vs. $M_{Other} = 81.25\%$) than on no conflict scenarios ($M_{Self} = 96.09\%$ vs. M

$_{Other}$ = 99.22%), suggesting that negative conflict had a greater impact when making self judgments than when making other judgments.

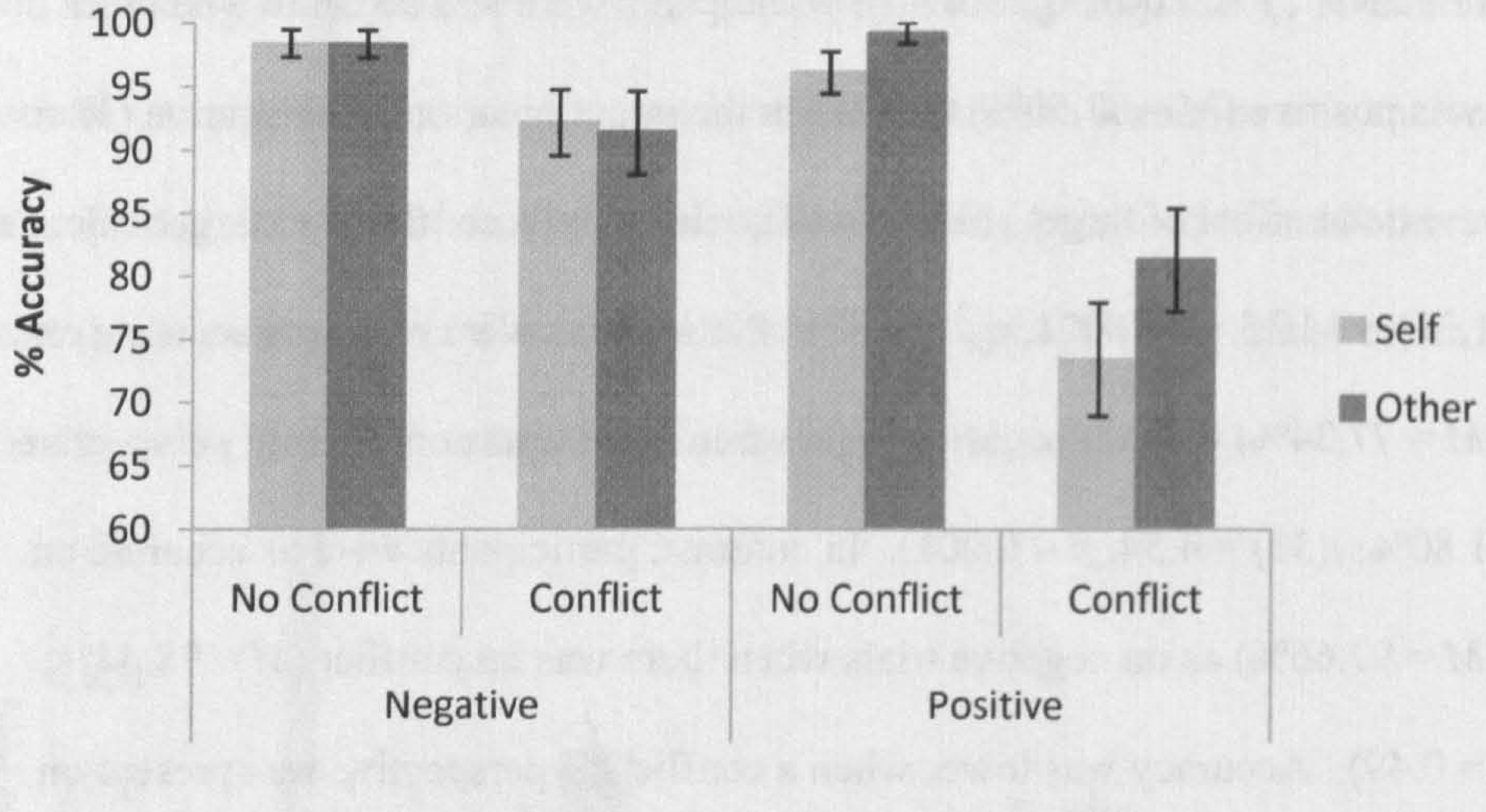

Figure 2.3. Percentage of correct responses in judging emotions for self and other in different valence scenarios for negative scenarios (without conflict and with positive conflict) and for positive scenarios (without conflict and with negative conflict) in Experiment 1. 1 standard error bars displayed.

DISCUSSION

Experiment 1 aimed to develop a paradigm to investigate emotional perspective-taking in interpersonal situations involving conflicting perspectives. Certain effects were expected to be present based on previous perspective-taking literature, including interference from a conflicting perspective and effects of perspective salience. In support of the paradigm, as a tool to investigate emotional perspective-taking, the results of the study were overall consistent with these effects.

Participants were slower (in all scenarios) and less accurate (in different valence scenarios) in judging how someone would feel when there were cues to another person's conflicting emotional perspective. This is consistent with findings showing that incongruent sources of emotion (e.g. faces and words or prosody and semantic content) can lead to cognitive conflict and interference when required to make judgments about one of the sources of emotion (Mitchell, 2006, Preston & Stansfield, 2008). It is also in line with the findings of Apperly et al. (2008), who found that conflicting information about the reality of a situation and another person's false belief about the situation produced a cost in making judgments about both that person's false belief and about reality. The current study suggests that recognising another person's emotional perspective may require greater cognitive control when there are cues to multiple people's perspectives. There may be costs involved in selecting amongst the cues present those relevant to the person's perspective, and in resolving interference between emotion representations activated by the different perspectives (Preston & Stansfield, 2008). However, the design of the paradigm means that an alternative explanation is possible. To recall, scenarios were presented over three displays in the conflict condition and over two displays in the no conflict condition, and therefore there was a greater working memory load in the conflict condition that may have contributed to the effects of conflict. However, this would not explain why the effect of conflict was larger on other judgments than on self judgments, or why there were greater effects of negative conflict in different valence scenarios. Nonetheless, in order to match the conditions more closely in subsequent studies using the paradigm, scenarios with no conflict described the (neutral) perspective of another person and were presented in the same way as conflict scenarios.

As mentioned above, and as predicted, effects of conflict (on response times) were greater on other judgments (with a conflicting self perspective) than on self judgments (with a conflicting other perspective). Despite only being an imagined self, imagining and representing scenarios from the perspective represented by a self-referent may have made cues to that perspective more salient, leading to a greater cost when required to judge the other person's perspective. This view is consistent with evidence that people adopt a perspective when reading a story, and that this can guide their representation and processing of social information, enhancing recognition and memory of goals relating to that perspective (Brunyé, Ditman, Mahoney, Augustyn, & Taylor, 2009; Jiang & Wyer, 2009; Wegner & Giuliano, 1983). It is also compatible with findings showing that material associated with the self is better remembered by individuals (Symons & Johnson, 1997). In fact, there was an effect of perspective only on conflict trials, suggesting that once a perspective is made salient, it may be particularly difficult to inhibit in order to make judgments about an alternative perspective.

The above effects (of conflict and perspective) are consistent with existing perspective-taking literature and, importantly for the paradigm, the effect of perspective indicated that participants adopted a perspective and became involved in the scenarios. In addition, interesting effects of valence were also observed in attributing emotions to a person. When no conflicting perspective was present, as predicted, responses were faster and more accurate when identifying how someone would feel when the response options permitted participants to make judgments solely on the basis of valence (e.g. happy or angry) than when they demanded distinction between two emotions of the same valence (e.g. sad or angry). This is in line with the idea that events may be appraised first on a valence dimension, followed by differentiation of discrete emotions (Ruys & Stapel, 2008). However, when two individuals had conflicting perspectives, the advantage of having different valence response options disappeared. There was a larger effect of conflict on response times and participants were less accurate in attributing emotions to a person when the perspective of another person evoked an emotion of differing valence than when it evoked a different emotion of the same valence. Further analysis then indicated that these effects were specific to attributing positive emotions to a person when another person had a negative perspective (e.g. when the target passed their driving test (happy), but the other person failed their driving test (sad)), suggesting that it may be difficult to quarantine a positive perspective from a conflicting negative perspective. In support of this, there is evidence from many areas of psychology suggesting that negative events are more potent and salient than equivalent positive events

(Baumeister, Bratslavsky, Finkenauer, Vohs, 2001; Rozin & Royzman, 2001), and may therefore be more difficult to inhibit. Alternatively, these responses might not represent failures in perspective-taking per se, but may instead result from effects of empathy. Consider the situation above, would you feel just as happy at passing your driving test if a good friend fails theirs at the same time? In other words, participants may have deliberatively adjusted their emotional predictions in empathy for the bad fortune of the other person.

In addition, there was tendency for this effect of negative conflict to be stronger on self judgments than on other judgments; individuals made less positive judgments when judging how they would feel about a positive event when the other-referent had a negative perspective than when judging how the other person would feel in response to a positive event when the self-referent had a negative perspective. Though any conclusions drawn on the basis of this can only be very tentative given the small number of scenarios, it might suggest that people assume that others will be less affected by the misfortunes of others than themselves. This observation was followed up and is discussed further in Chapter 5.

Prevailing perspective-taking models suggest that we make predictions about others by first predicting how we would respond and then adjusting these predictions for perceived differences between ourselves and others (Epley, 2008; Epley et al., 2004a; Nickerson, 1999). The current study was not designed to evaluate the anchoring-adjustment hypothesis and so it is only considered briefly here. In scenarios where there was only one perspective, no differences were observed in self and other judgments. However, while an anchoring-adjustment model might predict longer response times to make other judgments, it does so only to the extent that participants adjust their self predictions as a result of perceived differences between self and other (Epley, 2008; Nickerson, 1999). As little information was provided about the other and as there were only two possible responses there was little need to make any adjustments to predictions of how participants themselves would feel when making other judgments (Batson, 2009; Epley & Caruso, 2009). Moreover, it is argued that adjustment is an effortful process, demanding time and motivation, both of which may have been limited in the current paradigm (Epley et al., 2004a). The finding that other judgments were slower than self judgments in the conflict scenarios is compatible with an anchoring-adjustment model. However, as self judgments were based on a projected perspective, this effect may also be explained if it is assumed that information relating to the self-referent in the scenarios simply became available faster than information relating to the other-referent as a result of enhanced processing (Symons & Johnson, 1997).

Conclusions & Developments

Hypothetical scenarios can't model all aspects of social behaviour; there are clearly differences between perspective-taking in offline hypothetical scenarios and in real-life situations. When using scenarios, participants are constrained by the information provided in the scenarios, whereas in online interactions participants may have access to other cues, such as facial expressions, body language, knowledge of the person etc. (Davis, 2005; Zaki, Bolger, & Oschner., 2008). Moreover, in real emotional situations individuals must extract the relevant information within the context of changing and distracting events (Parkinson & Manstead, 1993) and this may demand motivation to understand the other person's point of view (Myers & Hodges, 2009). Finally, in an offline task somatic and affective responses may not be elicited (Parkinson & Manstead, 1993; Siemer & Reisenzein, 2007), and individuals may be able to regulate how involved they become in a scenario (Parkinson & Manstead, 1993). This may remove cues that may be used in understanding the emotions of others (Decety & Jackson, 2004; Heims, Critchley, Dolan, Mathias, & Cipolotti, 2004) and/or may make it easier to consider someone else's view without focussing excessively on our own emotions or perspective (Savitsky, Epley & Gilovich, 2001). However, even with these limitations, the behavioural paradigm used in Experiment 1 produced a number of effects compatible with existing perspective-taking literature, including effects of perspective interference and perspective salience suggesting it may be suitable (with a few modifications) to investigate some elements of emotional perspective-taking.

Even with the brevity of scenarios and the switching demands of the task, there was evidence to suggest that participants adopted a perspective in imagining the situations. Nonetheless, to encourage increased involvement in the scenarios, in subsequent studies using the paradigm, minimal links were added between scenarios (e.g. 'The next day...') in order to form a continuous story. Further, in studies where participants were required to switch between perspectives in the task (Experiments 5-7), pictures of the participant and of the other protagonist were presented as perspective cues to encourage participants to distinguish between perspectives.

Previous studies have shown that people have a strong tendency to empathise with the emotional states of others, finding that the mood of individuals often assimilates to the emotional states of others (Wild et al., 2001) and that just observing or hearing about another person's misfortune can generate empathic concern (Coke et al., 1978). However, this has mostly been when the perspective of the individual is one of a neutral observer to the other person's emotional state. The findings of the current study suggested that people are very sensitive to the (negative) experiences of others in social situations even when their own emotional experience is very different. The next chapter, Chapter 3, considers further how the empathiser's emotional experience might affect how they respond to the positive and negative emotional experiences of others. This meant that the focus of the paradigm shifted from the ability to identify emotional perspectives to the effect of another person's conflicting perspective on anticipated responses to events. As a result, the use of discrete emotions was dropped and replaced with a dimensional rating of affect (from Bad to Good). In addition, all responses were now assumed to be meaningful in how participants would feel and be affected by the emotions of others and therefore no answers were considered incorrect.

Chapter 3

Effects of the Empathiser's Emotional Experience on Empathy for the Good and Bad Fortunes of Others

The experiences of others frequently evoke emotional reactions in us. Just hearing about a person's misfortune is sufficient to elicit concern for that person's distress (Coke et al., 1978). Recent research has begun to identify possible neural mechanisms underlying our capacity for empathy, showing that observing, reading about and imagining the emotional experiences of others commonly activate brain structures involved in our own experience of emotions (Decety & Chaminade, 2003; Jabbi et al., 2008; Ruby & Decety, 2004). Such evidence has led to the suggestion that shared representations between self and others may support our ability to understand and experience the feelings of others (Decety & Jackson, 2004; Decety & Lamm, 2006). This research has also shown that our ability to empathise with others is not tied to responding to immediate environmental cues and may be modulated by characteristics of the social context (de Vignemont & Singer, 2006). Mental flexibility and cognitive control processes are thought to allow us to generate empathy in the absence of low-level emotional cues (e.g. in the absence of facial expressions) and to modulate our emotional response to others (Decety & Jackson, 2004; Decety & Lamm, 2006). The current study focuses on two factors that might be expected to affect our emotional response to the fortunes of others: the valence (positive or negative) of the other person's emotional experience and the empathiser's own experience.

Phenomenal experience suggests that we often feel pleasure for other people's successes, yet there is little empirical evidence for positive empathy (Jabbi et al., 2007; Royzman & Rozin, 2006). Further, other people's fortunes do not always occur in isolation from our own emotional experiences, and our response to their fortunes may be affected by our own. Imagine, for example, how you would feel if a friend was offered a job they really wanted.

Then, imagine how you would feel in the same situation if you were struggling to find employment. Would your friend's success evoke positive feeling if frustrated and stressed by your own situation? Conversely, first imagine how you would feel if a friend failed to get the job they really wanted. Then, imagine how you would feel in the same situation if you had just been offered a desired job. Would your friend's situation elicit negative feelings if elated and excited by your own success? Most empathy studies have been exclusively concerned with responses to other people's negative states and have looked at empathy when the empathiser merely observes a person's emotional state. The study reported here aimed to consider how people respond to the good, as well as the bad, fortunes of others and how the empathiser's own experience might influence such responses.

Effects of Emotional Valence on Empathy

Current theories of empathy suggest that perception of other people's emotional states activates emotion representations involved in our own experience of emotions eliciting autonomic and somatic responses consistent with that person's state, unless otherwise inhibited (Preston & de Waal, 2002). These representations may be activated by direct perception of other people's emotions (e.g. from facial cues) or via perspective-taking (Decety & Jackson, 2004; Preston & de Waal, 2002). However, the salience of cues to other people's states may affect whether and to what extent these representations are activated (Preston & de Waal, 2002). Negative stimuli are thought to command greater attention, to result in more extensive processing and to hold attention for longer than positive stimuli (Nasrallah, Carmel, & Lavie, 2009; Peeters & Czapinski, 1990). For example, in the emotional variant of the Stroop paradigm, it is usually found that participants take longer to name the colour ink a word is written in when the word is emotional than when it is neutral and this is thought to occur because emotions capture attention. Using this paradigm, Pratto and John (1991) found that this delay was longer for negative trait adjectives than for positive trait adjectives, suggesting that negative stimuli captures attention more than positive. In another study, it was found that participants were better able to detect whether briefly presented and masked words were emotional or not when they were negative than when they were positive (Nasrallah et al., 2009). Similarly, negative characteristics have been found to receive greater weight in person impressions than positive traits (Peeters & Czapinski, 1990). This has been described as a negativity bias and is thought to serve an adaptive purpose, resulting from the greater need for action and urgency following negative events (Baumeister et al., 2001). Such a negativity bias would predict that cues to other people's negative states may be more salient or arousing than cues to their positive states and may, therefore, be more likely to activate emotion representations and to result in empathy than their positive states.

This is, perhaps, in line with our phenomenal experience of empathy, but there is not a significant amount of empirical data to support the assumption that negative empathy is greater than positive. In a functional Magnetic Resonance Imaging (fMRI) study, Jabbi et al. (2007) found that empathy for gustatory pleasure (in response to viewing people drinking pleasant liquids) was similar in magnitude to empathy for gustatory disgust (viewing people drinking distasteful liquids). In a series of studies, Rozyman and Rozin (2006) asked participants to recall times when they had felt happy or sad for a person, finding that participants recalled slightly (but not significantly) more incidences of sympathy (negative empathy) than of positive empathy. Similarly, in one study participants were asked to imagine their response to a bad or good experience of another person, and it was found that negative empathy was not rated significantly more intensely than positive empathy, at least when the imagined other was a close friend. They did find, however, that for acquaintances fewer incidences of positive empathy were recalled than of negative empathy, and that positive empathy was rated as less intense than negative empathy, suggesting that positive empathy may be more dependent on having an emotional attachment to the other person than negative empathy. However, this data was mostly based on participants' recall, which may be influenced by memory biases, and even in the study where participants considered their response to another person's good or bad fortune, it was left to participants to choose events to imagine, losing some degree of experimental control. In sum, there is not much empirical evidence to support the assumption that negative empathy is greater than positive; though the lack of published studies of positive empathy may offer indirect evidence for this. The current study aimed to address this by investigating responses to the good, as well as the bad, fortunes of others.

Effects of the Empathiser's Fortune on Empathy

Research has shown that individuals readily empathise with the emotional experiences of others (Decety & Chaminade, 2003), but in most instances this has been when individuals simply watch, listen or read about another person's state or situation from an external observer perspective. Sometimes an empathiser may be emotionally involved in the situation in which another person has good or bad fortune, and their emotional experience might affect their response to that other's fortune for a number of reasons. Firstly, experiencing an emotional event may reduce resources available for processing information about the other person's state, as a result of attentional narrowing (Easterbrook, 1959; Levine & Edelstein, 2009) or increased self-focus (Wood, Salzberg, & Goldsamt, 1990). Negative emotional arousal, in particular, has been associated with increased self-focus and may, therefore, be especially likely to affect whether the other person's state is attended to (Wood et al., 1990). For instance, negative moods have been found to increase the number of personal pronouns used in sentence completion tasks and the number of self-focused thoughts produced in thought listing procedures (Wood et al., 1990). Being in an emotional state may also affect detection of other people's emotional states in a valence specific way, biasing attention to congruent emotional cues in the environment (affective congruency effect; Bower, 1981; Preston & de Waal, 2002). In support of this, individuals in a happy mood have been found to display a positive bias, and those in a sad mood a negative bias, in the recognition of emotional facial expressions (Niedenthal et al., 2000) and depressed individuals have a tendency to interpret neutral faces as sad and happy faces as neutral, displaying a negativity bias (Gur et al., 1992; Leppänen et al., 2004). It has been suggested that an empathiser's emotional experience may prime emotion representations so that weaker cues are required to activate them to a threshold necessary for conscious awareness (Bower, 1981), meaning that individuals may respond quicker and more intensely to other people's congruous emotional situations (Preston & de Waal, 2002). Consistent with this, shared positive experiences have been found to increase positive affect (Jakobs, Fischer, & Manstead, 1997). Thus, as well as affecting attention to the other person, an empathiser's emotional experience may also mean that they respond quicker and more intensely to the congruous emotional situations of others (Preston & de Waal, 2002).

Empathy may also be modulated by cognitive appraisals and information about the social context (de Vignemont & Singer, 2006), which might include the empathiser's own emotional experience. Individuals often compare themselves to others in social situations, affecting how they evaluate situations, and as a result their own fortune may determine how they respond to the fortunes of those others (Smith, 2000). Consistent with this, Brigham et al. (1997) found that when a target was perceived to be superior in terms of their achievements and social life, individuals reported less sympathy and greater pleasure on hearing about that person's bad fortune. In another study, hearing about another person's superior attributes was found to result in envy (Takahashi et al., 2009), and then later when hearing about that person's bad fortune participants reported pleasure (as opposed to sympathy). Other studies have suggested that an empathiser's concurrent emotional experiences can also affect responses to the fortunes of others. In one study, participants were given false feedback on their performance on an ability test as well as feedback about another person's performance before being asked to rate how happy or sad they felt for the other person (Smith et al., 2006). Individuals were less happy for a high performing other when informed that they had done poorly themselves compared to when they had also done well or received no feedback themselves. Similarly, McFarland, Buehler, and MacKay (2001) gave participants feedback about a friend's social perception ability and found that their mood assimilated to that feedback (more positive mood when that person's performance was high than low) when no information was provided about their own ability, but not when given feedback suggesting that their ability was lower than that of a high scoring other. The above findings suggest that another person's good fortune may be less likely to elicit positive empathy when the empathiser perceives themselves to have poorer fortune. Conversely, an empathiser who experiences good fortune may find it easier to feel pleasure for another person's good fortune.

The empathiser's own fortune may also affect how the other person's bad fortune is appraised and whether empathy is elicited. In situations where two individuals share similar bad fortunes the events may be appraised as less serious, and as result less empathy may be generated. In support of this, in the study by Smith et al. (2006) participants reported less sadness for a low performing other when they had done poorly themselves. Conversely, when the empathiser has good fortune the bad fortune of another person may seem much worse in comparison and may evoke strong feelings of empathy. In addition, such positive inequity may even lead to feelings of guilt, which may then motivate prosocial behaviours (Baumeister, Stillwell, & Heatherton, 1994). In one study individuals were asked to imagine that they were rewarded either more, the same or less than another person who had perform similarly in a situation, and to report how much satisfaction or guilt they would feel (Austin, McGinn, & Susmilch, 1980). Individuals were less satisfied if they had been under-rewarded, but receiving more compensation than the other person led to feelings of guilt. In another study positive inequity led participants to behave dishonestly to help a disadvantaged person, even at a cost to themselves (Gino & Pierce, 2009). These findings suggest that positive inequity can sometimes lead to guilt, which may in turn motivate prosocial and empathic responses, and therefore suggest that empathy for a person's bad fortune may be significant even when the empathiser's own fortune is good.

Collectively, these studies suggest various ways in which the empathiser's experience might affect how the other person's fortune is evaluated, influencing whether empathy is elicited. However, the findings of many of these studies are based on a single scenario and scenarios prone to comparisons between self and other (e.g. ability-related feedback), only a few studies have looked at responses to both the good and bad fortunes of others, and other studies can only provide indirect predictions of the effect of the empathiser's experience on empathy (having no measure of empathy). Therefore, the current study aimed to consider how the empathiser's own experience may influence responses to the good and bad fortunes of others across a wide variety of situations. Participants were asked to imagine being in situations in which a friend has bad, neutral or good fortune, whilst their own fortune is bad, neutral or good and to rate how they would feel in each scenario (but were never explicitly asked to consider the other person's feelings). An indirect measure of empathy was then obtained by assessing how the other person's concurrent good and bad fortunes affected participants' emotional ratings. This allowed a more spontaneous assessment of participants' empathy that, arguably, may be less influenced by experimenter demand than asking participants directly how they would feel in response to the other person's fortune (like most previous studies).

From the above studies, various predictions might be made about how the empathiser's experience might affect responses to the good and bad fortunes of others. For instance, if emotional experience results in attentional narrowing or increased self-focus, an empathiser may not be affected by the good or bad fortunes of another person when experiencing an emotional event themselves (compared to when they are a neutral observer to that other's fortune).[2] If emotional experience biases information processing to congruent cues, then more intense positive emotional responses might be expected when both the empathiser and the other person have good fortune and more intense negative emotional responses might be expected when both have bad fortune. Alternatively, less negative affect may result when both experience bad fortune if, as a result, the events are appraised less negatively. If

[2] In the current study, where the events are only imagined and the fortune of the other is explicitly described, it is assumed that this may not play a significant role in participants' judgments, but is described as another potential influence on how people might respond to the fortunes of others in everyday situations (see discussion).

incongruent sources of emotion result in interference (affective congruency effect) then less intense positive and negative emotional responses might be expected when the empathiser and the other have contrasting fortune. Less positive responses to good fortune might also be expected when another person has bad fortune if positive inequity results in feelings of guilt and promotes empathy for the other's bad fortune. Less negative responses to bad fortune might also be expected when another person has good fortune if pleasure for the other person's good fortune is evoked, but if instead it results in envy more intense negative responses to bad fortune may result.

First, a note is provided on some of the terms used in this and subsequent chapters. 'Emotional experience' describes, not the internal feeling of individuals but, the events which may elicit positive or negative feelings in individuals. Secondly, feelings or emotions are described as being evoked, induced etc. but no assumptions are made about whether autonomic and somatic responses are elicited by the scenarios; this refers to the activation of emotional representations, which may remain at a conceptual level.

Experiment 2

METHOD

Design

Participants were asked to imagine themselves in a series of scenarios where their own fortune was either bad, neutral or good, while another person in the scenario also had either bad, neutral or good fortune. Participants rated how they would feel in each scenario on a 7-point rating scale from Bad to Good and response times were recorded.

Participants

24 students at the University of Nottingham (18 female) volunteered to participate in the study, receiving a small inconvenience allowance. Participants were aged between 18 and 25 years (M = 20.42 years, SD = 1.77). All participants were native English speakers.

Stimuli

144 short written scenarios (approximately 3-5 sentences long) described typical daily events that might be expected to elicit positive, negative or little emotion in two protagonists. The scenarios described the perspective of the participant and the perspective of a 'close friend', using the second ('You') and the third person pronouns ('S/he'). Scenarios were presented as episodes within a larger story, describing daily events happening to two individuals over a period of a few years, from going to University to starting working life, and ranged from relatively trivial fortunes, such as receiving a compliment or spilling tea on a new shirt, to more significant fortunes, such as securing a mortgage or breaking-up with a partner. A version of each scenario was written for each of the 9 conditions and one version of each scenario was allocated to a different experimental list (9 lists in total). Participants were then randomly allocated to complete a single experimental list so that they only saw one version of each scenario. Each experimental list contained an equal number of scenarios (n=16) from each of the 9 conditions (see Table 3.1). An example of a scenario is presented in Table 3.1 in this chapter, with further examples in the appendix. The order in which the fortune of self and the fortune of other were described was counterbalanced across scenarios, but within each of the 9 conditions. Scenarios were organised into 8 blocks of 18 scenarios, with 2 scenarios from each condition in each block.

Procedure

Participants were asked to think of the other person (gender congruent with the participant) as a close friend and were told to imagine themselves in the scenarios. Their task was to rate how they would most feel in each scenario. Participants were told that we were interested in their first impressions and were encouraged to respond quickly. Scenarios were presented on a PC computer, programmed using E-Prime (Schneider et al., 2002). A fixation point, appearing for 500ms, preceded each scenario, with each scenario presented over 3 displays: part 1 provided the context of the scenario, and parts 2 and 3 described the fortune of self and the fortune of other (see Figure 3.1). Participants were able to self pace their reading of the scenarios using the spacebar on the computer keyboard. Following each scenario participants were presented with a rating scale from Bad (1) to Good (7) in the centre of the screen and made their responses on the computer keyboard. Participants were given a maximum of 8000ms to respond before the experiment moved on to the next scenario. Participants completed a practice block of 18 scenarios before proceeding with the 8 experimental blocks.

Following the task, participants rated how much they liked the other, how similar they thought they were to the other and how vividly they felt they could imagine the scenarios on a 7-point scale, with higher ratings indicating higher agreement with the item.

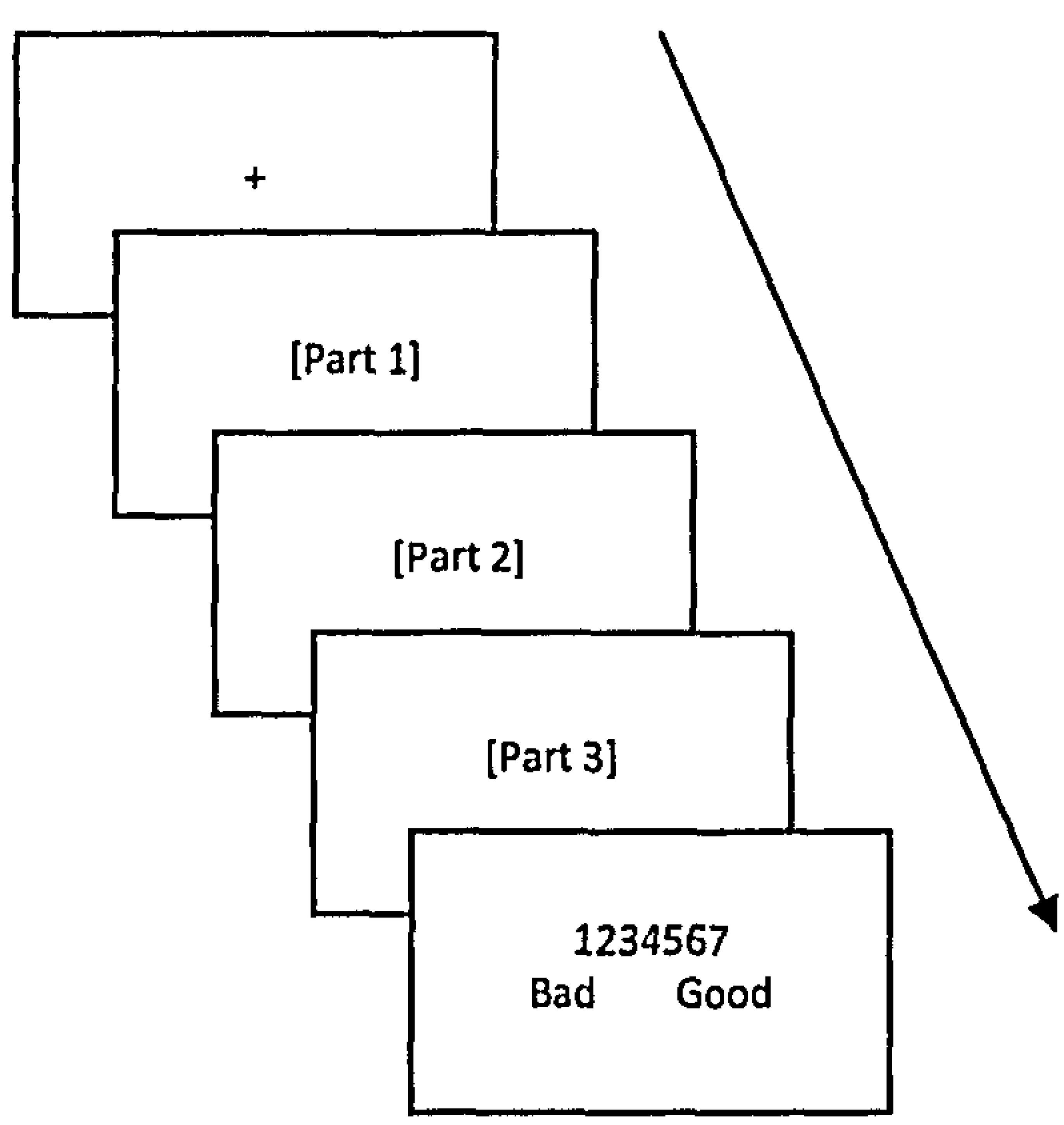

Figure 3.1. Schematic representation of the procedure. Part 1 provided the context of the scenario and Parts 2 & 3 described the fortunes of self and other. The final display presented the rating scale that participants used to make their response.

Table 3.1

An Example of the 9 Different Versions of One Scenario Used in Experiment 2

Fortune of Self	Fortune of Other	
Bad	Bad	'The following evening you and Jane both go to an art class. The teacher confesses that he has lost your painting that you spent hours perfecting. Jane then knocks a pot of paint all over her painting, ruining it.'
Bad	**Neutral**	**'The following evening you go to an art class. Jane goes with you to see whether she wants to join the class. The teacher confesses that he has lost your painting that you spent hours perfecting. Jane observes what kind of activities you do at the class and looks at everyone's work.'**
Bad	Good	'The following evening you and Jane both go to an art class. The teacher confesses that he has lost your painting that you spent hours perfecting. The art teacher then tells Jane that they want to display her painting at a special exhibition.'
Neutral	Bad	'The following evening Jane goes to an art class. You go with her to see whether you want to join the class. You observe what kind of activities Jane does at the class and look at everyone's work. The teacher then confesses that he has lost Jane's painting that she spent hours perfecting.'
Neutral	**Neutral**	**'The following evening you and Jane both go to an art class. You observe everyone working on their paintings and look around the art room. Jane then gets you and her some paper, brushes and paint to start a picture.'**

Neutral	Good	'The following evening Jane goes to an art class. You go with her to see whether you want to join the class. You observe what kind of activities Jane does at the class and look at everyone's work. The art teacher then tells Jane that they want to display her painting at a special exhibition.'
Good	Bad	'The following evening you and Jane both go to an art class. The art teacher tells you that they want to display your painting at a special exhibition. The teacher then confesses that he has lost Jane's painting that she spent hours perfecting.'
Good	**Neutral**	**'The following evening you go to an art class. Jane goes with you to see whether she wants to join the class. The art teacher tells you that they want to display your painting at a special exhibition. Jane observes what kind of activities you do at the class and looks at everyone's work.'**
Good	Good	'The following evening you and Jane both go to an art class. The art teacher tells you that they want to display your painting at a special exhibition. The art teacher then asks Jane if they can frame her paintings to display permanently in the art room.'

Note. *Each participant saw only one version of each scenario. The conditions highlighted in bold represent the three baseline conditions to which effects of the other person's good and bad fortunes on responses were compared. More negative responses when the other person concurrently had bad fortune was taken as a measure of negative empathy and more positive responses when the other person concurrently had good fortune was taken as a measure of positive empathy.*

RESULTS

Exit Questionnaire: Perception of the other and imageability of the scenarios.

Participants indicated that they generally liked the person ($M = 5.38$, $SD = 1.17$) and they considered the other person to be moderately similar to themselves ($M = 4.25$, $SD = 1.82$). They also indicated a high ability to imagine the scenarios ($M = 5.67$, $SD = 1.05$).

Effects of the empathiser's and the other's fortune on emotional responses

Emotional Ratings (see Table 3.2)

The average ratings of participants were first entered into a two-way repeated measure ANOVA of self fortune (good, neutral, bad) and other fortune (good, neutral, bad). This revealed an effect of self fortune ($F(2,46) = 294.23, p < 0.001, \eta_p^2 = 0.93$), with higher ratings following scenarios where participants' fortune was good ($M = 5.55$) than when it was neutral ($M = 4.39$; $t(23) = 11.78, p < 0.001$) and lower ratings when participants' fortune was bad ($M = 2.38$) than when it was neutral ($M = 4.39$; $t(23) = 17.79, p < 0.001$). There was also an effect of other fortune ($F(2,46) = 76.66, p < 0.001, \eta_p^2 = 0.77$), with higher ratings following scenarios when the other person's fortune was good ($M = 4.65$) than when it was neutral ($M = 4.39$; $t(23) = 3.08, p < 0.01$) and lower ratings when the other person's fortune was bad ($M = 3.27$) than when it was neutral ($M = 4.39$; $t(23) = 11.75, p < 0.001$). However, there was also an interaction between self fortune and other fortune ($F(4,46) = 18.38, p < 0.001, \eta_p^2 = 0.44$). In order to explore this interaction, three one-way repeated ANOVAs were performed on each level of self fortune to examine the impact of the other person's fortune on emotional responses when the self experienced neutral, good and bad fortune.

Responses to the good and bad fortunes of another when the experience of self is neutral

There was an effect of other fortune when the self had a neutral perspective ($F(2,46) = 57.73$, $p < 0.001, \eta_p^2 = 0.72$). Consistent with negative empathy, in scenarios where participants' fortune was neutral, ratings were lower when the other person had bad fortune ($M = 3.28$) compared to when the other person also had neutral fortune ($M = 4.75$; $t(23) = 9.46$, $p < 0.001$). In addition, and consistent with positive empathy, ratings were higher when the other person had good fortune ($M = 5.13$) compared to when the other person also had neutral fortune ($M = 4.75$, $t(23) = 2.76$, $p < 0.05$).

Responses to the good and bad fortune of another when the experience of self is positive

There was an effect of other fortune when the self had good fortune ($F(2,46) = 78.00$, $p < 0.001$, $\eta_p^2 = 0.77$). Compatible with negative empathy, participants' responses to good fortune were significantly lower when another person had bad fortune ($M = 4.54$) than when the other person's fortune was neutral ($M = 5.93$; $t(23) = 9.88$, $p < 0.001$). Conversely, and in line with positive empathy, another person's good fortune enhanced responses to receiving good fortune ($M = 6.18$) compared to when the other had neutral fortune ($M = 5.93$; $t(23) = 2.39$, $p < 0.05$).

Responses to the good and bad fortune of another when the experience of self is negative

There was an effect of other fortune when the self had bad fortune ($F(2,46) = 14.85$, $p < 0.001$, $\eta_p^2 = 0.39$). Again consistent with negative empathy, responses to bad fortune were even more negative when another person had bad fortune ($M = 2.00$) compared to when the other person's fortune was neutral ($M = 2.48$; $t(23) = 4.62$, $p < 0.001$). However, another person's good fortune had no significant effect on responses to bad fortune ($M = 2.65$) compared to when the other person had neutral fortune ($M = 2.48$; $t(23) = 1.41$, $p = 0.17$), with participants showing no evidence of positive empathy when their own fortune was bad.

Table 3.2.

Average Emotional Ratings According to the Fortune of Self and the Fortunes of Other in Experiment 2. Standard Deviation in Parentheses.

	Self Fortune		
Other Fortune	Bad	Neutral	Good
Bad	2.00 (0.43)	3.27 (0.57)	4.53 (0.81)
Neutral	2.48 (0.59)	4.75 (0.47)	5.93 (0.55)
Good	2.65 (0.73)	5.12 (0.69)	6.18 (0.49)

Note. *Ratings were made on a scale from 1 (Bad) to 7 (Good).*

Response Times (see Table 3.3)

An arbitrary cut off of 6000ms[3] was used to remove extreme outliers, resulting in less than 1% of data points being excluded. The kurtosis and skewness values of this data were 2.41 and 1.35 respectively, indicating mild positive skew. Therefore, analyses was also repeated on log transformed data (without removing outliers) to check reliability[4]. As both analyses revealed similar effects and as data transformation is considered controversial, analyses of the untransformed data is reported (Aron & Aron, 1999), with any differences between analyses noted. Following pre-processing, response times were first entered into a two-way repeated measure ANOVA of self fortune (good, neutral, bad) and other fortune (good, neutral, bad).

This analysis revealed an effect of self fortune ($F(2,46) = 8.72, p = 0.001, \eta_p^2 = 0.28$), with faster responses following scenarios in which self had bad fortune ($M = 1554.39$ms; $t(23) = 3.55, p < 0.01$) and good fortune ($M = 1586.53$ms; $t(23) = 3.28, p < 0.01$) than when self had neutral fortune ($M = 1730.20$ms). There was no significant difference between scenarios where self had bad fortune and scenarios where self had good fortune ($t(23) = 0.79, p = 0.44$). There was no main effect of other fortune ($F(2,46) < 1, \eta_p^2 = 0.01$). However, there was a

[3] This value was greater than 2 standard deviations of each participant's average response time for all but one participant (M = 3248.74ms, SD = 1698.34).
[4] Log transforming the data reduced skewness to -0.53 and kurtosis to 0.98.

significant interaction between self fortune and other fortune ($F(4,92) = 10.62, p < 0.001, \eta_p^2 = 0.32$). In order to explore this interaction, three one-way repeated ANOVAs were performed on each level of self fortune to examine the impact of the other person's fortune on response times when the self experienced neutral, good and bad fortune.

Responses to the good and bad fortune of another when the experience of self is neutral

There was a trend for an effect of other fortune when self had neutral fortune ($F(2,46) = 3.07, p = 0.06, \eta_p^2 = 0.12$)[5]. Response times were slower when the other person experienced bad fortune ($M = 1785.93$ms; $t(23) = 2.13, p < 0.05$) and good fortune ($M = 1777.81$ms; $t(23) = 2.43, p < 0.05$) than when the other person also had neutral fortune ($M = 1626.87$ms). The other person's good and bad fortunes had comparable effects on response times ($t(23) = 0.10, p = 0.92$). Thus, another person's emotional state (regardless of valence) delayed affective judgments of scenarios in which self had neutral fortune.

Responses to the good and bad fortune of another when the experience of self is positive

There was an effect of other fortune when the self had good fortune ($F(2,46) = 16.65, p < 0.001, \eta_p^2 = 0.42$). Responses were faster when the other person also experienced good fortune ($M = 1420.00$ms) compared to when the other had neutral fortune ($M = 1580.68$ms; $t(23) = 2.65, p < 0.05$). In addition, responses were significantly slower to good fortune when the other experienced bad fortune ($M = 1758.92$ms) compared to when the other had neutral fortune ($M = 1580.68$ms; $t(23) = 3.64, p = 0.001$). In sum, another person's good fortune facilitated affective judgments of scenarios in which self had good fortune while another person's bad fortune delayed judgments.

[5] This trend was not significant using log transformed data ($F(2,46)$, 1.53, $p = 0.23$ $\eta_p^2 = 0.06$).

Responses to the good and bad fortune of another when the experience of self is negative

Finally, there was a significant effect of other fortune when the self had bad fortune ($F(2, 46) = 6.82, p < 0.01, \eta_p^2 = 0.23$). Responses were faster when the other person also had bad fortune ($M = 1376.54$ms) compared to when the other person had neutral fortune ($M = 1628.41$ms; $t(23) = 3.43, p < 0.01$). However, the other person's good fortune ($M = 1658.22$ms) had no significant effect on responses to bad fortune compared to when the other had neutral fortune ($M = 1628.41$ms; $t(23) = 0.31, p = 0.76$). Thus, another person's bad fortune facilitated affective judgments of scenarios in which self had bad fortune, while another person's good fortune had no effect on judgments.

Table 3.3.

Average Response Times (ms) to Make Emotion Judgments According to the Fortune of Self and the Fortunes of Other in Experiment 2. Standard Deviations in Parentheses.

	Self Fortune		
Other Fortune	Bad	Neutral	Good
Bad	1376.54 (504.82)	1785.93 (648.56)	1758.92 (615.22)
Neutral	1628.41 (559.42)	1626.87 (523.53)	1580.68 (587.16)
Good	1658.22 (667.49)	1777.80 (678.41)	1420.00 (490.64)

Summary

Consistent with empathy for another person's bad fortune, ratings were more negative when another person had bad fortune when participants had a neutral perspective and when they had good and bad fortune themselves. In line with this, that person's bad fortune delayed responses to neutral and good fortune and accelerated responses to bad fortune. Consistent with empathy for another person's good fortune, responses were more positive when another person had good fortune when participants had a neutral perspective and when they had good fortune themselves. Again, in line with these ratings the other person's good fortune delayed responses to neutral fortune and accelerated responses to good fortune. However, participants showed no evidence of positive empathy when their own fortune was bad; the other person's good fortune no longer had a positive effect on their emotional responses and had no effect on response times.

Effect of perspective order

Empathy is assumed to arise as a result of the other person's emotional state activating emotion representations, but 'true empathy' requires an awareness of the source of the emotion (i.e. knowing that we feel bad because of what has happened to another person; de Vignemont & Singer, 2006). Participants were sensitive to the good and bad fortunes of others when they had the role of a neutral observer and were sensitive to the bad fortunes of others when they had contrasting fortune. This could reflect empathy for the fortunes of the other person in the situation, but could also result from low-level interference from the other person's fortune. Information about the other person's fortune may have primed emotion representations, producing interference or response competition (Preston & Stansfield, 2008) when participants' own fortune was neutral or incongruent (as opposed to participants deliberatively modulating their responses in empathy for the other). One way to consider this might be to look at scenarios in which the other person's fortune was described first in the scenario (before participants' own fortune) and when it was described second (after participants' own fortune; recalling that the order was counterbalanced). If the other person's fortune only influenced judgments as a result of interference or response competition then it might be predicted that the effects of the other person's fortune would only been observed when that person's fortune was described later in the scenario. When the other person's fortune is described earlier in the scenario, greater time for the effects of the other person's fortune to dissipate, and inhibitory influences from later information about participants' own fortune, may override low-level priming effects of the other person's fortune. To examine this, separate one-way ANOVAs were conducted for scenarios in which the other person's fortune was described first and second, looking at the effect of other fortune (bad, neutral, good) on responses to scenarios in which self fortune was neutral, good and bad. Statistics are reported with Greenhouse-Geisser correction in cases where the Mauchly's test of sphericity indicated that the assumption of sphericity could not be assumed.

Emotional Ratings (See Table 3.4)

Responses to the good and bad fortune of another when the experience of self is neutral

There was an effect of other fortune when the self had neutral fortune whether the other person's fortune was described first ($F(1.35,21.73) = 32.34, p < 0.001, \eta_p^2 = 0.58$) or second ($F(1.40, 32.24) = 65.59, p < 0.001, \eta_p^2 = 0.74$). Irrespective of whether the other person's fortune was described first or second, responses were more negative when the other had bad fortune ($p < 0.001$) and more positive ($p < 0.05$) when the other had good fortune compared to when the other also had neutral fortune.

Responses to the good and bad fortune of another when the experience of self is positive

There was an effect of other fortune when self had good fortune whether the other fortune was described first ($F(1.56,35.86) = 48.28, p < 0.001, \eta_p^2 = 0.67$) or second ($F(2, 46) = 67.95$, $p < 0.001, \eta_p^2 = 0.75$). Regardless of whether the other person's fortune was described first or second, ratings to good fortune were more negative when the other had bad fortune than when the other had neutral fortune ($p < 0.001$). However, ratings to good fortune were only more positive when the other had good fortune compared to when the other had neutral fortune when the other person's fortune was described second ($t(23) = 2.34, p < 0.05$) and not first ($t(23) = 1.53, p = 0.14$).

Responses to the good and bad fortune of another when the experience of self is negative

There was an effect of other fortune when self had bad fortune whether the other fortune was described first ($F(2,46) = 13.80, p < 0.001, \eta_p^2 = 0.38$) or second ($F(2, 46) = 8.29, p = 0.001$,

$\eta_p^2 = 0.27$). Irrespective of whether the other person's fortune was described first or second, ratings to bad fortune were more negative when the other also had bad fortune compared to when the other had neutral fortune ($p < 0.01$). In addition, the other person's good fortune had no effect on responses to bad fortune irrespective of whether it was described first ($t(23) = 1.82, p = 0.08$) or second ($t(23) = 0.68, p = 0.50$).

Table 3.4

Average Emotional Ratings According to the Fortune of Self and the Fortune of Other and When the Other Person's Fortune was Described First and Second in the Scenario in Experiment 2. Standard Deviation in Parentheses.

	Order of Other		Self Fortune	
Other Fortune	Fortune	Bad	Neutral	Good
Bad	First	1.80 (0.51)	3.57 (0.63)	5.02 (0.93)
	Second	2.20 (0.56)	2.99 (0.63)	4.06 (0.90)
Neutral	First	2.19 (0.65)	4.70 (0.46)	6.11 (0.68)
	Second	2.78 (0.65)	4.80 (0.54)	5.76 (0.52)
Good	First	2.39 (0.77)	5.07 (0.70)	6.28 (0.49)
	Second	2.90 (0.83)	5.18 (0.82)	6.08 (0.60)

Note. *Ratings were made on a scale from 1 (Bad) to 7 (Good).*

Response Times (see Table 3.5)

Responses to the good and bad fortune of another when the experience of self is neutral

There was an effect of other fortune when the self had neutral fortune when the other person's fortune was described first ($F(2,46) = 4.59, p < 0.05, \eta_p^2 = 0.17$), but not second ($F(2,46) < 1$, $\eta_p^2 = 0.02$). When the other person's fortune was described first, the other person's bad fortune ($t(23) = 2.93, p < 0.01$) and good fortune ($t(23) = 2.34, p < 0.05$) delayed responses compared to when the other also had neutral fortune, with the other's good or bad fortune having comparable effects on response times ($t(23) = 0.55, p = 0.59$). However, neither the other's good or bad fortune had any effect on response times compared to when the other had neutral fortune when that person's fortune was described second ($p > 0.22$).

Responses to the good and bad fortune of another when the experience of self is positive

There was an effect of other fortune when self had good fortune whether the other fortune was described first ($F(2, 46) = 6.00, p < 0.01, \eta_p^2 = 0.21$) or second ($F(2, 46) = 12.93, p < 0.001, \eta_p^2 = 0.36$). When it was described second, the other person's bad fortune delayed responses to good fortune compared to when they had neutral fortune ($t(23) = 2.90, p < 0.01$) and there was a non-significant trend for their good fortune to facilitate responses to good fortune compared to when the other had neutral fortune ($t(23) = 1.94, p = 0.06$). When it was described first, there was a non-significant trend for the other person's bad fortune to delay responses to good fortune compared to when the other had neutral fortune ($t(23) = 1.97, p = 0.06$) and their good fortune did not significantly facilitate responses to good fortune compared to when the other had neutral fortune ($t(23) = 1.68, p = 0.11$)[6].

Responses to the good and bad fortune of another when the experience of self is negative

There was an effect of other fortune when self had bad fortune whether the other person's fortune was described first ($F(2, 46) = 4.37, p < 0.05, \eta_p^2 = 0.16$) or second ($F(2, 46) = 6.25, p < 0.01, \eta_p^2 = 0.21$). Irrespective of whether the other person's fortune was described first or second, responses to bad fortune were faster when the other also had bad fortune compared to when the other had neutral fortune ($p < 0.05$). The other person's good fortune had no effect

[6] Analyses of log transformed response times indicated that when the other person's fortune was described first, the other person's good fortune significantly facilitated responses to good fortune ($t(23) = 3.06, p < 0.01$), but the other person's bad fortune did not significantly delay responses to good fortune compared to when the other had neutral fortune ($t(23) = 1.35, p = 0.19$).

on responses to bad fortune irrespective of whether it was described first ($t(23) = 0.47, p = 0.64$) or second ($t(23) = 0.21, p = 0.84$).

Table 3.5

Average Response Times (ms) to Make Emotion Judgments According to the Fortune of Self and the Fortune of Other and When the Other Person's Fortune was Described First and Second in the Scenario in Experiment 2. Standard Deviation in Parentheses.

	Order of Other		Self Fortune	
Other Fortune	Fortune	Bad	Neutral	Good
Bad	First	1352.88 (539.20)	1879.45 (746.14)	1702.86 (721.18)
	Second	1399.53 (535.49)	1691.59 (595.20)	1815.65 (582.72)
Neutral	First	1729.53 (623.21)	1645.05 (540.67)	1614.73 (638.75)
	Second	1524.05 (534.47)	1608.23 (547.35)	1546.19 (604.57)
Good	First	1564.45 (648.94)	1824.64 (800.14)	1400.90 (560.35)
	Second	1755.14 (739.14)	1730.97 (629.99)	1437.95 (477.19)

Summary

As a neutral observer to the good and bad fortune of another person, affective judgments assimilated towards that person's fortune even when it was described before participants' own perspective. However, the other person's emotional experience only delayed responses to these scenarios when it was described first and not second. This delay may be compatible with a priming account of the modulation, reflecting a process that resolves interference from the other person's fortune as a result of later information about participants' own neutral fortune. Consistent with this, although responses still assimilated to the other's fortune when it was described earlier in the scenario, it did so to a lesser extent than when it was presented later. In addition, when self had good fortune, the other person's bad fortune dampened responses even when it was described first (before the good fortune of participants), though resulted in greater conflict when it was described second (with a greater response time cost). Generally, greater effects of the other person's fortune were observed when it was described later in the scenario, compatible with an interference or response competition account. However, the other person's bad fortune consistently influenced responses even when described early in the scenario (before participants' own fortune), suggesting that even time and information about their own fortune did not override participants' response to the bad fortune of another. This might indicate that interference and response competition may not be sufficient to explain the effect of the other person's bad fortune on responses.

Effect of Time

Familiarity and having an emotional attachment to the target are thought to increase empathy, or even be necessary for positive empathy (de Vignemont & Singer, 2006; Royzman & Rozin, 2006). This might predict that effects of the other person's fortune might be larger or only observed later in the task, assuming that repeatedly imagining being in situations with a person increases familiarity or results in a sense of attachment to that person. Alternatively, it is possible that, with practice in making emotional judgments, participants may become more efficient at overcoming interference from the other person's fortune over time, becoming less affected by the other person's fortune. In order to examine whether individuals responded differently to the fortunes of the other person over the course of the experiment, the effect of time was examined by splitting participants' data into the first four blocks of trials and the second four blocks of trials and entering time in a repeated measure ANOVA with self fortune and other fortune. Only effects of or interactions with time are reported.

Emotional Ratings (see Table 3.6)

There was no overall effect of time ($F(5,96) < 1$ $\eta_p^2 = 0.01$), but there was a three-way interaction of time, self fortune and other fortune ($F(5,96) = 3.35, p < 0.05, \eta_p^2 = 0.13$). To examine this interaction, the effect of other fortune at each level of self fortune was examined separately for the early and late halves of the experiment using one-way repeated measure

ANOVAs. This revealed that the other person's good fortune only significantly enhanced responses to good fortune ($M = 6.26$) compared to when the other had neutral fortune ($M = 5.83$; $t(23) = 4.13, p < 0.001$) late in the experiment and not early on ($M_{Good} = 6.10$ vs. $M_{Neutral} = 6.04$; $t(23) = 0.47, p = 0.64$). Moreover, while there was no effect of the other person's good fortune on responses to bad fortune early on ($M_{Good} = 2.54$ vs. $M_{Neutral} = 2.48$; $t(23) = 0.39, p = 0.70$), it had a marginally significant effect late in the task, with higher emotional ratings to receiving bad fortune when the other had good fortune ($M = 2.76$) compared to when the other had neutral fortune ($M = 2.49$; $t(23) = 2.07, p = 0.05$). However, conversely, the other person's good fortune ($M = 5.24$) only had a significant effect on responses to neutral fortune compared to when the other also had neutral fortune early on ($M = 4.66$; $t(23) = 3.62, p = 0.001$) and not late in the task ($M_{Good} = 5.01$ vs. $M_{Neutral} = 4.84$; $t(23) = 1.07, p = 0.30$). The impact of the other person's bad fortune on emotional judgments did not differ significantly in any way with time.

Table 3.6

Average Emotional Ratings Made Early and Late in the Task According to the Fortune of Self and the Fortune of Other in Experiment 2. Standard Deviation in Parentheses.

	Time	Self Fortune		
Other Fortune		Bad	Neutral	Good
Bad	Early	1.99 (0.45)	3.27 (0.68)	4.54 (0.86)
	Late	2.02 (0.56)	3.29 (0.64)	4.53 (0.89)
Neutral	Early	2.48 (0.64)	4.66 (0.60)	6.04 (0.63)
	Late	2.49 (0.67)	4.84 (0.46)	5.83 (0.60)
Good	Early	2.54 (0.77)	5.24 (0.81)	6.10 (0.56)
	Late	2.76 (0.82)	5.01 (0.71)	6.26 (0.54)

Note. *Ratings were made on a scale from 1 (Bad) to 7 (Good).*

Response Times (see Table 3.7)

There was a main effect of time, with response times being faster late in the task (M = 1485.83ms) than early on (M =1762.29ms; $F(1,23) = 49.12, p < 0.001, \eta_p^2 = 0.68$). However, there were no interactions with time ($p > 0.77$).

Table 3.7

Average Response Times (ms) to Make Emotion judgments Early and Late in the Task According to the Fortune of Self and the Fortune of Other in Experiment 2. Standard Deviation in Parentheses.

	Time	Self Fortune		
Other Fortune		Bad	Neutral	Good
Bad	Early	1495.16 (527.06)	1948.63 (700.63)	1918.55 (674.51)
	Late	1260.19 (534.02)	1626.09 (685.71)	1599.21 (624.90)
Neutral	Early	1786.95 (593.25)	1773.10 (570.50)	1684.41 (675.30)
	Late	1470.48 (586.71)	1483.95 (529.18)	1476.41 (561.83)
Good	Early	1806.47 (717.43)	1904.88 (750.50)	1542.48 (487.90)
	Late	1506.39 (672.49)	1650.74 (649.87)	1298.94 (533.06)

Summary

Participants were generally faster over time, but the impact of another person's concurrent bad fortune on emotional responses was the same throughout the task. The other person's bad fortune dampened responses to good, neutral and bad fortune from the start to the end of the task, suggesting that developing an attachment to the person was not necessary for negative empathy and that participants did not start to block out their response to that person's bad fortune over time. In contrast, responses to the good fortune of the other person varied throughout the task. The other person's good fortune tended to have an effect on responses to good and bad fortune later in the task (but not early on), consistent with the suggestion that having an attachment to the person is important for positive empathy

(Rozyman & Rozin, 2006). However, in contrast, the other person's good fortune only had an effect on responses to neutral fortune early on (and not later in the task), being more consistent with participants being able to override responses to the good fortunes of others over time.

DISCUSSION

The misfortunes of others often elicit empathy for that person, while the good fortune of others may evoke positive feelings, but not always. Much research has been devoted to investigating the factors that determine when and how we respond to the emotional states of others (de Vignemont & Singer, 2006), but only a few studies have considered empathy for other people's positive experiences and how the empathiser's experience might modulate empathy for the fortunes of others. The current study aimed to address this by looking at how the fortune of the empathiser affected responses to the good and bad fortunes of another person.

Consistent with previous studies, as a neutral observer to another person's fortune, participants reported negative affect on learning about that person's bad fortune (Decety & Chaminade, 2003; Wild et al., 2001). Similarly, and despite evidence that we can often behave according to our own self-interest (Batson, 2008), an empathiser's pleasure at receiving good fortune was significantly dampened by another person's concurrent bad fortune. Another person's bad fortune even exacerbated negative responses to the empathiser's bad fortune, providing no evidence to suggest that sharing negative fates with another person may lessen the misery of misfortune. It is possible that this may only occur when both individuals co-experience the same negative event (Jakobs et al., 1997) or when the negative events have high relevance to each other (such as both failing a test; Smith et al., 2006). This was not true of many of the scenarios here, where the negative events of self and other were often unrelated (e.g. smashing an expensive bottle of wine in a supermarket and forgetting one's purse and not being able to pay for shopping in the supermarket). It is, however, in line with the suggestion that once an emotion representation is primed, it may facilitate processing of similar emotional cues, leading to more intense responses (Preston & de Waal, 2002). In sum, individuals were extremely sensitive to the bad fortune of another person, regardless of their own fortune.

In contrast, empathy for another person's good fortune was smaller in magnitude and contingent on the empathiser's experience. As a neutral observer to the other person's fortune, participants reported positive affect on learning about that person's good fortune, in line with previous studies showing that exposure to positive facial expressions can produce positive affect (Wild et al., 2001), but showing that this can also arise from semantic cues to other people's states. In addition, and consistent with the idea that activation of an emotional representation can augment processing of similar emotional cues, already positive responses to good fortune were enhanced when another person concurrently experienced good fortune (Preston & de Waal, 2002). However, an empathiser's bad fortune eliminated any positive feeling for the good fortune of another, with responses to bad fortune being unaffected by the other person's concurrent good fortune.

In explaining this asymmetry in positive and negative empathy, it should first be noted that when the other person experienced neither good nor bad fortune, positive scenarios were rated as positively as negative scenarios were negatively, suggesting the asymmetry was not the result of differences in the relative negativity and positivity of the events. Then, a first account of the positive-negative asymmetry assumes that it occurs as a result of low-level factors affecting processing of negative and positive information. A large body of evidence has shown that negative information attracts more attention, produces stronger reactions and receives greater weight in evaluative judgments than positive information (Baumeister et al., 2001; Rozin & Royzman, 2001). Following this, another person's negative experience, being more salient or potent, may activate emotion representations more strongly than their positive experiences, intruding more in affective ratings (Preston & de Waal, 2002). A negativity bias may also help account for why positive empathy was not observed when the empathiser had bad fortune. Not only are negative events thought to be more salient or arousing than positive events, but imagining events from a first person perspective has been found to result in more intense emotional responses and greater activation of feeling states than imagining another person in the same situation (e.g. Holmes et al., 2008; Ruby & Decety, 2004). Thus, events that are both negative and linked to a self perspective may be especially salient, preventing intrusion from the good fortunes of others present.

The influence of such low-level processes on judgments is suggested by the greater impact of the other person's bad fortune on responses when it was described later in the scenario than when it was described earlier. This finding would be predicted on the basis of a priming account of the data, with interference or response competition expected to be larger when there is less time to overcome interference before a response is made. However, effects of the other person's fortune were not exclusively observed when it was described late in the scenario and it is suggested that higher level processes may also contribute to the pattern of emotional modulation observed.

Awareness of another person's misfortune may give rise to sympathy (a feeling of concern associated with a desire to alleviate the person's distress; Eisenberg, 2000), or even guilt when one's own fortune is better than theirs (Baumeister et al., 1994). Sympathy and guilt are both considered to be moral emotions and may motivate individuals to respond empathetically towards another person's bad fortune (Eisenberg, 2000). In contrast, another person's good fortune may sometimes lead to perceptions of unfairness and unpleasant feelings such as misery and envy (Brigham et al., 1997; Smith, 2000; Takahashi et al., 2009), which may interfere with any pleasure evoked by the person's good fortune and may even cancel it out. Moreover, responding in empathy for the good fortunes of others may not be reinforced by the same moral standards as negative empathy, contributing to a negative-positive asymmetry in empathy (Royzman & Kumar, 2001). In sum, how individuals respond to the fortunes of others may depend on both low-level features of that other's fortune and on how that person's fortune is appraised, both of which may be influenced by emotional valence and the empathiser's own experience.

A number of points may limit the conclusions of this study. Firstly, neutral situations (those in which both individuals had neither good nor bad fortune) resulted in mildly positive evaluations and ratings to good fortune were already high when the other had neutral fortune. This is consistent with a tendency for people to have a positive outlook on events (Diener & Diener, 1996), but may have reduced sensitivity to positive empathy. This would not explain, however, the lack of positive modulation when self fortune was bad, where there was the most scope for displaying increased positive affect as a result of the other's good fortune. Secondly, the findings of Royzman and Rozin (2006) suggested that positive empathy may depend on having an emotional attachment with the other and though participants were asked to imagine the other was a close friend, it may be difficult to simulate a significant level of attachment in a laboratory task, resulting in an underestimation of positive empathy. Consistent with this, there was some evidence to suggest that positive empathy increased over the course of the task when participants may have developed a greater sense of attachment to the other. Finally, in considering how well these findings translate to empathy in everyday life, it is important to note that, although imagery has been used successfully to induce moods in previous studies (e.g. Panayiotou, Brown, & Vrana, 2007; Salovey, 1992), no measurement of emotional arousal was included in this study, and any emotions elicited by imagery are likely to be much weaker than online experience. In life, an individual's negative experience (or even their positive experiences; Panayiotou et al., 2007) may become the most salient element of a situation them, becoming the focus of their attention and may reduce attention to even the bad fortunes of others (Wood et al., 1990). In general, greater effects of one's own emotional experiences might be expected in real life situations that induce high arousal and when there are less explicit cues to the emotional states of others.

In conclusion, the study suggests that negative empathy is more readily elicited than positive empathy and that an empathiser's poor fortune may be one factor that limits pleasure for the good fortunes of others. Both low (e.g. cue salience) and higher level processes (e.g. social comparisons and moral judgments) may contribute to a positive-negative asymmetry in empathy. These higher-level processes are considered further in Chapters 5 and 6, but the next chapter discusses low-level effects of other people's emotions in the context of two studies investigating whether other sources of emotion can interfere in how individuals evaluate emotional situations.

Chapter 4

Effects of the Source of Other People's Emotions: Low-Level Effects of Other People's Emotions

Other people's emotions can affect our own emotions, thoughts and behaviours. Their influence is such that it can occur outside of our control and even when we are not aware that we have been emotionally affected (Dimberg et al., 2000; Murphy & Zajonc, 1993). Exposure to the emotions of others has been shown to influence mood (e.g. Neumann & Stack, 2000; Wild et al., 2001), to influence anxiety when faced with a threatening situation (Gump & Kulik, 1997), to modulate pleasure in participating in social activities (Fischer, Manstead, & Zaalberg, 2003), and to colour affective judgments about unrelated stimuli (Murphy & Zajonc, 1993; Stapel, Koomen, & Ruys, 2002). Similarly, behaviours such as decision-making (Parkinson & Simons, 2009) and intergroup co-operation (Barsade, 2002) have been found to be affected by the emotions of others. The influence of other people's emotions was also observed in Experiment 2 (reported in Chapter 3), where information about another person's concurrent good or bad fortune was found to modulate how individuals evaluated situations in which they experienced positive, neutral or negative fortune. This chapter begins to consider the different mechanisms by which the other person's emotional experience modulated the affective judgments of participants, drawing on both low and higher level accounts proposed to explain previous findings of affect transfer. In order to focus discussion of these different accounts, two experiments are presented contrasting the effect of another person's concurrent emotional experience on affective judgments of situations (like Experiment 2) with the effect of incongruent emotional faces, presented during situation processing, but as independent to the situation.

Effects of other people's emotions on our own emotional state and without our conscious awareness are described as emotional contagion (Hsee et al., 1990; Neumann & Stack, 2000;

Wild et al., 2001). For instance, in one study listening to a speech of affectively neutral content, but spoken in a sad or happy voice was found to have mood congruent consequences (Neumann & Stack, 2000). After listening to the speech, participants rated their mood more positively if the speech was spoken in a happy tone and rated their mood more negatively if spoken in a sad tone. Moreover, this occurred despite participants showing no awareness of the influence of the speaker's emotions and even influenced judgments about the speaker, with participants who listened to the happy voice reporting that they liked the speaker more than individuals who listened to the sad voice (Neumann & Stack, 2000). Emotional contagion is thought to occur because perception of another person's emotional state activates representations of our own emotional state (Preston & de Waal, 2002). It has been argued that the activation of these representations can explain how affect can bias interpretation of ambiguous events, enhance the salience of mood congruent material, and how it may guide information processing and influence appraisals (Bower, 1981). According to Bower (1981), once affective representations are activated, excitation spreads to associated concepts in memory, lowering their activation threshold so that weaker cues are required for their activation (Bower, 1981). Thus, seeing someone smiling may activate positive affective representations (and may elicit autonomic and somatic responses; Preston & de Waal, 2002), lowering the activation threshold necessary for recognition of stimuli, and for making responses, of congruent valence (Bower, 1981).

A different line of research has offered a more cognitive account of how cues to another person's emotion can influence unrelated affective judgments, described as affective priming (Murphy & Zajonc, 1993; Sweeny, Grabowecky, Suzuki, & Paller, 2009). Like emotional contagion, affective priming is assumed to occur because evaluation of a prime's affective meaning triggers excitation of representations of the same valence, lowering their activation threshold necessary for identification and classification (De Houwer, Hermans, Rothermund, & Wentura, 2002). For instance, in one study participants made affective judgments about novel stimuli (Chinese symbols), which were preceded by briefly presented emotional faces expressing happiness or anger (Murphy & Zajonc, 1993). Despite participants being unaware of the emotional faces, symbols preceded by happy faces were rated as higher in likeability than symbols preceded by angry faces. In another study, priming happy faces (compared to priming fear faces) led to surprised faces being rated more positively (Sweeny et al., 2009). However, unlike emotional contagion, affective priming is thought to operate at a purely conceptual or semantic level.

A third, but related, account proposed to explain how the presence of other people's emotions can influence affective judgments also suggests that emotional cues may activate emotion representations, but places the interference later in the process than at semantic processing, occurring as a result of Stroop-like response competition (De Houwer et al., 2002). In one study, participants were presented with affective words (unpleasant or pleasant) superimposed on faces of congruent or incongruent valence and were asked to classify the words as positive or negative (Stenberg, Wiking, & Dahl, 1998). Sad and angry faces delayed classification of positive words, while happy faces delayed responses to negative words, suggesting that affective processing of the faces interfered even though irrelevant to the task. Similarly, Preston and Stansfield (2008) used a modified Stroop task, in which they superimposed emotion labels onto emotional faces, and asked participants to either match (the superimposed words were basic emotions) or categorise the word (the superimposed words were synonyms of basic emotions) according to a set of 4 basic emotions. It was found that participants were slower to match or categorise the word when the underlying facial expression was incongruent with the word. These effects are assumed to occur because observing a target's emotional state activates semantic representations relating to that state that interfere either at the level of semantic representations or as a result of response competition between the representation of the face and the representation of the word (Preston & Stansfield, 2008).

What is common to these mechanisms (emotional contagion, semantic-level interference and response competition) invoked to explain effects of another person's emotional state on affective judgments is that none of them involve conscious consideration of the feelings of the other person. In contrast, affect transfer may sometimes occur because another person's emotional state provides information that shapes our meaning of an event via social appraisals (Barsade, 2002; Gump & Kulik, 1997; Parkinson & Simons, 2009). In one study, Fischer, Rotteveel, Evers and Manstead (2004) found that participants' judgments of how they would respond to an emotionally ambiguous situation were influenced by descriptions of the emotional reactions of others in the scenario. Participants reported that they would feel sadder when others in the scenarios were described as being sad and angrier when others in the scenario were described as being angry. Further support for effects of other people's emotions on appraisals was found in a diary study conducted by Parkinson and Simons (2009). In this study participants reported their own anxiety and excitement relating to everyday decisions they had made over a three week period, as well as the anxiety and excitement of others present while they made their decisions. Other people's emotions were found to influence not only participants' emotions but their appraisals during decision-making, suggesting that the other person's emotion affected participants' interpretation of the decision-making situation (Parkinson & Simons, 2009). One reason why such affect transfer might occur is because the emotions of others can be a source of information or reference point when there is no objective standard from which to make our judgments (social comparison theory; Festinger, 1954).

In Experiment 2 (reported in Chapter 3), descriptions of another person's concurrent bad fortune led participants to evaluate situations in which they had bad, neutral or good fortune more negatively and, conversely, another person's concurrent good fortune led participants to evaluate situations in which they had neutral or good (but not bad) fortune more positively. As reviewed above, a number of mechanisms have been invoked to explain how cues to other people's emotions can influence affective judgments and it is possible that these may help explain the effects observed in Experiment 2. It may be reasonable to argue that emotional contagion may be an unlikely account of the effects as there were only descriptive cues to the other person's emotion, requiring inference of the other person's likely emotion that may or may not elicit autonomic or somatic responses (Parkinson & Simons, 2009). However, processing of the other person's emotional experience may have activated emotion representations (affective priming) that interfered with representations of participants' own emotional experience either at the level of semantic representations or at response selection (Preston & Stansfield, 2008). For instance, the other person's bad fortune may have activated negative emotion concepts that interfered in positive judgments of participants' own good fortune. This interpretation of the data would also have to account for the negative-positive asymmetry in affective judgments (i.e. the greater effects of the other person's bad fortune on judgments). Compatible with this, there is evidence that negative stimuli have the capacity to interfere in unrelated tasks more than positive stimuli. Using the traditional emotional Stroop task, in which participants are required to name the ink colour of emotional or neutral words, McKenna and Sharma (1995) found that negative, but not positive, words slowed colour naming relative to neutral words (see also Pratto & John, 1991).

In Experiment 2 the other person's fortune influenced judgments more when it was described later in the scenario, following participants' own fortune and just prior to response (i.e. there was a recency effect). This is compatible with accounts of semantic-level interference or response competition if it is assumed that activation of concepts relating to the other person's fortune dissipates with time or is overridden or inhibited by later information. However, another person's bad fortune significantly influenced participants' responses to receiving good fortune even when that person's bad fortune was described before their own good fortune and a significant amount of time had elapsed before response was required. Here, participants had more time to overcome interference from representations of the other person's bad fortune, yet responses were affected nonetheless. Further, in previous studies reporting effects of emotional interference on emotional stimuli (e.g. effects of incongruent emotional faces on the recognition of emotional words) interference is mainly seen in response times, with errors being relatively rare (Preston & Stansfield, 2008; Stenberg et al., 1998). In Experiment 2, another person's bad fortune did not just slow judgments, they modulated the actual responses given, and to a large extent, suggesting that other processes may have contributed to affective judgments in this study.

An alternative explanation of the data, following a social appraisal account, might be that the other person's emotional experience altered participants' understanding of the emotional situation and affected their emotional judgments as a result. In support of this, after doing the task a number of participants informally commented on their reluctance to respond that they would feel good when another person simultaneously had bad fortune.

The aim of Experiments 3 and 4 was to examine whether a different source of other people's emotions, i.e., emotional facial expressions, would influence affective judgments of emotional events even when they have no relevance to the emotional event. Participants made affective judgments about positive or negative events while being presented with conflicting or non-conflicting information about another person's emotional experience in the situation (as in Experiment 2), or while being presented with conflicting or non-conflicting emotional faces. Following the findings of Experiment 2, it was predicted that participants would make less positive judgments in response to good fortune when another person was described as experiencing bad fortune, but that responses to bad fortune would be largely unaffected by information about another person's good fortune. Emotional faces were presented as part of a separate secondary task and it was assumed that participants would not perceive these as being relevant to the events in the scenarios. Social appraisal-based affect transfer is thought to occur because the emotional stimulus is perceived to be part of the social context in which the target stimulus is appraised and because it adds information concerning how the emotional situation should be interpreted (Parkinson & Simons, 2009). Following this, it might be assumed that emotional facial expressions that have no meaningful relevance to the events in the situation are unlikely to influence affective judgments via appraisals. However, emotional facial expressions might influence affective judgments to the extent that they induce affective responses (emotional contagion), produce semantic-level interference or lead to response competition as result of activating incongruent emotion representations.

Experiment 3

METHOD

Design

A within-subject design was used, manipulating the imagined emotional experience of self (bad fortune/good fortune), the emotional state of a second person, which could be neutral (no conflict) or conflicting with the fortune of self (conflict (positive /negative)) and the source of the conflicting emotion ('another's fortune'/'emotional face'). In addition, scenarios were included in which the self experienced a neutral event while the other person's state was either positive or negative. These scenarios were included to make a neutral response a valid response option. Response times and the proportion of good, bad and neutral responses to good, bad and neutral fortune scenarios were recorded.

Participants

24 participants (23 female) took part in the study, with ages ranging between 18 and 26 years (M = 19.92 years, SD = 1.74). All participants were native English speakers. Participants were recruited from the student population at the University of Nottingham, receiving a small inconvenience allowance.

Materials

The scenarios were the same or of a similar type to Experiment 2, with additional scenarios added to meet the number of scenarios needed for the current experiment. In this experiment, unlike Experiment 2, and in order to reduce the number of scenarios, congruent emotional situations (i.e. where self and other both have good fortune or both have bad fortune) were not included. The main scenarios of interest were those where participants were asked to imagine that they had good or bad fortune and the other source of emotion (another person's fortune or an emotional face) was either neutral (no conflict) or of contrasting valence (conflict). Different versions of 128 scenarios were presented in each of the 8 conditions, with each version allocated to a different experimental list. Participants were then randomly allocated to an experimental list so that each participant saw each scenario only once. In addition to these scenarios, each experimental list contained an additional 40 scenarios where participants' own fortune was neutral and the other source of emotion (another person's fortune or an emotional face) was positive or negative (in order to make 'neutral' a valid response option). Like for the main scenarios, different versions of the 40 scenarios were presented in each of the 4 neutral conditions, with each version allocated to a different experimental list.

Each experimental list contained 16 of each of the 8 main conditions and 10 of each of the 4 neutral fortune conditions (see Table 4.1). The 'another's fortune' and the 'emotional face' conditions were presented as separate experiments; half of the participants were first presented with scenarios in which the source of conflict was another person's fortune in the situation (84 scenarios in total) followed by scenarios where the source of conflict was an emotional face (84 scenarios in total) and the remaining participants completed these conditions in the reverse order. Both the 'another's fortune' and the 'emotional face' condition were divided into 4 blocks of 21 scenarios (containing 4 scenarios from each of the main conditions and 5 neutral scenarios).

In the 'another's fortune' condition, and like Experiment 2, the scenarios described the emotional experience of participants ('You..') and that of a second person ('S/he...'). The order in which the perspectives were described was counterbalanced across scenarios, but within conditions. In the 'emotional face' condition, the scenarios were modified to remove references to the other person within the scenario, and instead a photograph of an actor displaying a neutral, positive or negative facial expression was presented during scenario processing. Examples of scenarios are provided in the Appendix.

Table 4.1

Number of Scenarios Presented to Each Participant in Each Condition in Experiment 3.

Condition	Self Fortune	Conflict	No. of Scenarios
'Another's fortune'	Good	No Conflict	16
	Good	Conflict (Negative)	16
	Bad	No Conflict	16
	Bad	Conflict (Positive)	16
	Neutral	Conflict (Negative)	10
	Neutral	Conflict (Positive)	10
'Emotional face'	Good	No Conflict	16
	Good	Conflict (Negative)	16
	Bad	No Conflict	16
	Bad	Conflict (Positive)	16
	Neutral	Conflict (Negative)	10
	Neutral	Conflict (Positive)	10

Photographs used in the 'emotional face' condition

The nature (e.g. annoyed, sad etc.) and the intensity of the emotional experience of the other in the 'another's fortune' condition varied and an attempt was made to reflect this in the 'emotional face' condition. Photographs of a single male (for male participants) and of a single female (for female participants) were produced by asking an actor to mime different positive and negative emotions of different intensities, as well as neutral expressions. Different photographs were used for each of the 84 scenarios in the task (32 neutral, 26 positive, 26 negative). Photographs were cropped so that only the actor's face was displayed and were approximately 4.77° x 6.77° in size (Figure 4.1). Additional photographs (40 good, 40 bad and 45 neutral male and female photographs) were initially piloted with 5 participants who did not participate in the main study (4 female, aged 19-24 years ($M = 21.4$ years, $SD = 1.8$)). Participants were asked to rate the photographs on a scale from bad (1) to good (7). The 26 photographs scoring most negatively, the 26 photographs scoring most positively and the 32 most neutral scoring photographs were selected for use in the experiment (Table 4.2).

To confirm that the bad faces were rated significantly more negative, and the good faces more positive, than the neutral faces, ratings for the male and female faces were submitted separately into an independent t-test based on an item analysis. Both female ($M_{Bad} = 1.60$ vs. $M_{Neutral} = 4.19$; $t(64) = 35.72, p < 0.001$) and male negative faces ($M_{Bad} = 1.32$ vs. $M_{Neutral} = 3.89$; $t(64) = 30.05, p < 0.001$) were rated significantly lower than the neutral faces. Conversely, both female ($M_{Good} = 6.59$ vs. $M_{Neutral} = 4.19$; $t(64) = 35.77, p < 0.001$) and male positive faces ($M_{Good} = 6.70$ vs. $M_{Neutral} = 3.89$; $t(64) = 33.83, p < 0.001$) were rated significantly higher than the neutral faces.

Figure 4.1. Examples of the female and male, positive, neutral and negative photographs used in the 'emotional face' condition of Experiment 3.

Table 4.2

Average Emotional Ratings for the Female and Male, Negative, Neutral and Positive Photographs Used in the 'Emotional Face' Condition of Experiment 3. Standard Deviation in Parentheses.

		Average Rating
Female	Negative	1.60 (0.29)
	Neutral	4.19 (0.30)
	Positive	6.59 (0.24)
Male	Negative	1.32 (0.26)
	Neutral	3.89 (0.40)
	Positive	6.70 (0.23)

Note. Ratings were made on a scale from Bad (1) to Good (7).

Procedure

Each participant was randomly allocated to complete either the 'another's fortune' or the 'emotional face' condition first (half of participants completed the conditions in each order). Both conditions were programmed using E-Prime (Schneider et al., 2002). Before both conditions, participants were introduced to the other person (in the scenarios or in the photographs) by a name and a photograph only. Different protagonists were used in each condition (e.g. Jane and Kate). Participants were asked to imagine being in the scenarios and following each scenario to judge how they would feel. Participants completed 12 practice scenarios before each condition.

'Another's fortune' condition

The procedure in the 'another's fortune' condition was similar to Experiment 2, with the exception of the cue used for participants to make their response and in the use of a forced choice rather than a rating response. Each scenario was preceded by a central fixation point, presented for 500ms, and was then presented across three displays, with part 1 introducing the context of the scenario and parts 2 & 3 describing the perspective of the participant and that of the other person (Figure 4.2a & b). Participants were able to self pace their reading of the scenarios by pressing the spacebar key on the keyboard. Participants were given up to 10000ms to read each display. After participants indicated that they had read the last part of the scenario (by pressing the spacebar key) participants were cued with a photograph of them self and their response options to make their emotion judgments. For each scenario, participants were presented with a forced choice of two options presented either side of the fixation point (Bad vs. Neutral, Neutral vs. Good or Bad vs. Good) and made their response using one of two mouse keys. Response options always reflected the emotional state of self and other in the given scenario. Participants were given 10000ms to make their response before the task moved on to the next scenario, but were encouraged to respond quickly.

'Emotion face' condition

In the 'emotional face' condition, the part of the scenario describing the other person's perspective in the 'another's fortune' condition (either part 2 or 3) was replaced with an emotional face. Thus, emotional faces were presented either in the middle of the scenario (before information about participants' own fortune) or at the end of the scenario (after information about participants' own fortune). As for the 'another's fortune' condition, participants were able to self pace their reading of the scenario, but were exposed to the emotional face for 500ms to ensure participants did not press spacebar immediately. The emotional faces were presented centrally on a white background (Figure 4.2c & d). In addition, to increase the incidental nature of the emotional faces, and to ensure the emotional expressions were not perceived as linked to events in the scenario (i.e. smiling at the participant's bad fortune), participants were asked to perform a very simple secondary task (adding minimal cognitive load). A small yellow letter (font size 18) was superimposed on, each photograph centrally (but did not obstruct the faces), and participants were prompted to report whether the letter was a z or an x using the keys on the keyboard (Figure 4.2c & d). Participants were given 2000ms to make a response. After participants indicated that they had read the last part of the scenario, or had made their letter judgment in the 50% of scenarios where the emotional face was presented at the end of the scenarios, participants were cued with a photograph of them self and their response options to make their judgments as for the 'another's fortune' condition.

After completing both conditions, participants were asked to rate how much they liked the other person, how similar to the other person they perceived themselves to be and how vividly they could imagine the scenarios in each condition (all on a 7-point scale from 'Not at all' (1) to 'Extremely (7)).

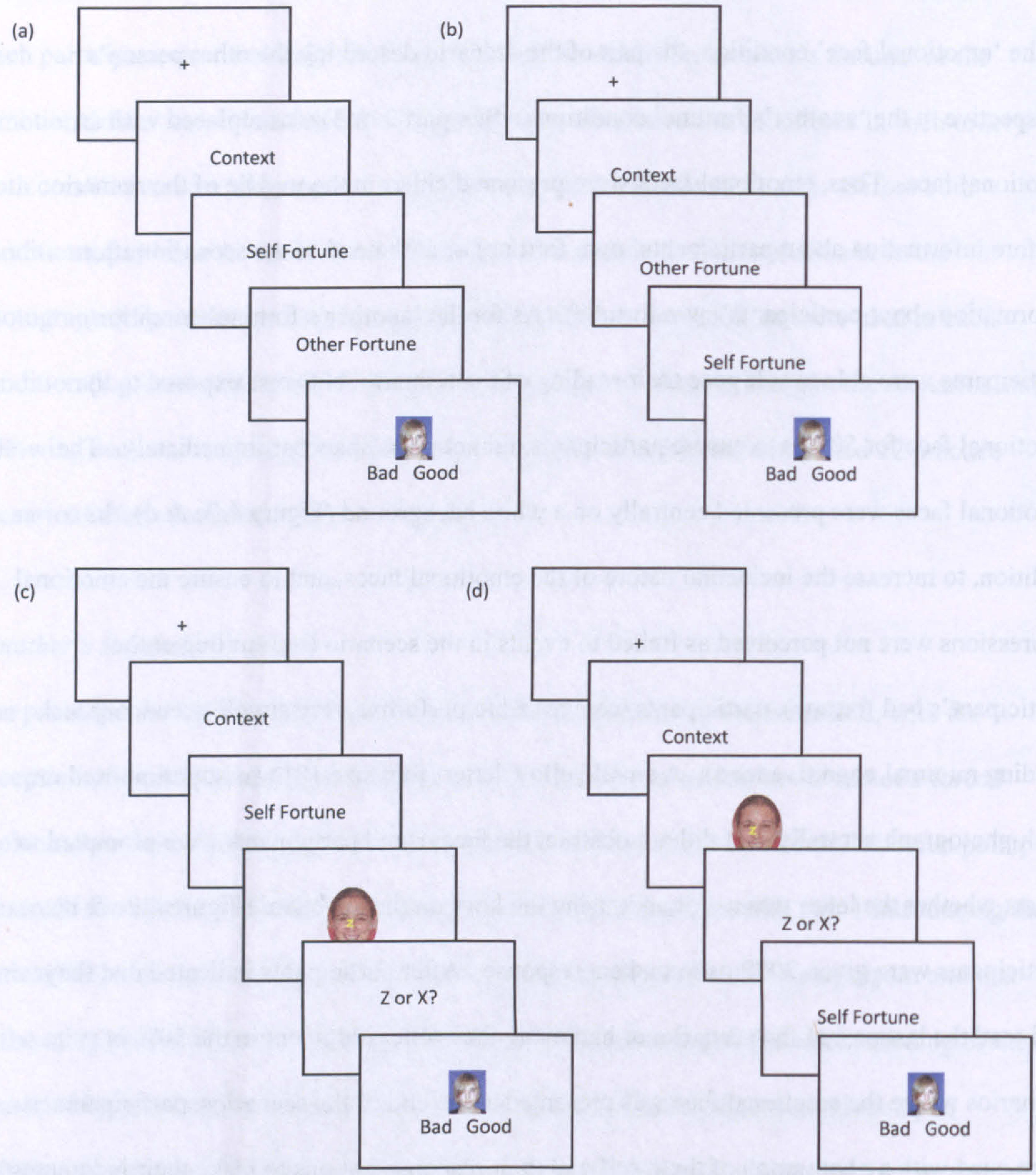

Figure 4.2. Schematic representation of the procedure in the 'another's fortune' (a & b) and the 'emotional face' condition (c & d) in Experiment 3. Participants' own fortune (self fortune) was described before the other person's emotional state for half of the scenarios in each condition and after the other person's emotional state in the other half.

RESULTS

Exit questionnaire: Impressions of the other and reported ability to imagine the scenarios.

Participants reported moderately liking the other in the 'another's fortune' condition (M = 5.08, SD = 0.97) and in the 'emotional face' condition (M = 4.54, SD = 0.66), though liking was higher for the other in the 'another's fortune' condition ($t(23) = 2.18, p < 0.05$). Perceived similarity was also moderate in both conditions, but was again higher for the other in the 'another's fortune' condition (M = 4.29, SD = 0.91) than in the 'emotional face' condition (M = 3.71, SD = 0.95; $t(23) = 2.51, p < 0.05$). These differences are considered in the General Discussion. However, presentation of emotional faces during scenario processing did not appear to disrupt the ability of participants to imagine the scenarios, with high imageability reported in both the 'another's fortune' (M = 6.17, SD = 0.87) and the 'emotional face' conditions (M = 6.04, SD = 0.86; $t(23) = 0.83, p = 0.42$).

Performance in the secondary task

Participants were generally accurate in identifying the letter superimposed on emotional faces (M = 92.25%, SD = 14.72).

Responses to good and bad fortune

Emotional Responses (see Figure 4.3a)

The proportion of bad responses made to bad fortune and good responses made to good fortune were analysed in a three-way repeated measure ANOVA of fortune (bad/good), conflict (no conflict/conflict) and conflict source ('emotional face'/'another's fortune'). This analysis revealed an effect of fortune ($F(1,23) = 18.73, p < 0.001, \eta_p^2 = 0.45$), with more bad responses (M = 88.30%) than good responses (M = 79.00%). There was also an effect of conflict ($F(1,23) = 20.00, p < 0.001, \eta_p^2 = 0.47$) and an effect of source ($F(1,23) = 76.24, p <$

0.001, $\eta_p^2 = 0.77$), with more responses in line with the fortune of self when there was no conflict ($M = 87.00\%$) than when there was conflict ($M = 80.30\%$) and when the source was an emotional face ($M = 91.70\%$) than when it was another person's fortune in the scenario ($M = 75.60\%$). However, these main effects were qualified by a number of interactions, including between fortune and conflict ($F(1,23) = 47.21, p < 0.001, \eta_p^2 = 0.67$), source and fortune ($F(1,23) = 17.47, p < 0.001, \eta_p^2 = 0.43$) and source and conflict ($F(1,23) = 52.47, p < 0.001, \eta_p^2 = 0.70$), as well as a three-way interaction between source, fortune and conflict ($F(1,23) = 63.29, p < 0.001, \eta_p^2 = 0.73$). As the three-way interaction qualifies the two-way interactions only this interaction was broken down, with separate two-way repeated measure ANOVAs (fortune x conflict) performed on the 'another's fortune' and the 'emotional face' conditions.

'Another's fortune' condition

There was a significant effect of fortune ($F(1,23) = 26.57, p < 0.001, \eta_p^2 = 0.54$), with significantly more bad responses made to bad fortune ($M = 83.70\%$) than good responses to good fortune ($M = 67.60\%$). There was also a significant effect of conflict ($F(1,23) = 49.70$, $p < 0.001, \eta_p^2 = 0.68$), with significantly more responses in line with participants' own fortune with no conflict ($M = 83.70\%$) than with conflict ($M = 67.60\%$). However, these effects were qualified by an interaction between fortune and conflict ($F(1,23) = 114.36, p < 0.001, \eta_p^2 = 0.83$). Follow-up analyses indicated that participants made less good responses to good fortune when another person had bad fortune ($M = 50.88\%$) than when that other had neutral fortune ($M = 84.33\%$; $t(23) = 10.63, p < 0.001$), but made just as many bad responses to bad fortune when another person had good fortune ($M = 84.29\%$) as when the other had neutral fortune ($M = 83.04\%$; $t(23) = 0.52, p = 0.61$).

'Emotional face' condition

In contrast to when another person experienced a contrasting emotional event in the scenario, when the source of the conflicting emotion was an emotional face presented during the scenario, there was no effect of fortune (M_{Bad} = 92.90% vs. M_{Good} = 90.50%; $F(1,23) = 1.21$, $p = 0.28$, $\eta_p^2 = 0.05$), no effect of conflict ($M_{No\ Conflict}$ = 90.30% vs. $M_{Conflict}$ = 93.10%; $F(1,23) = 3.14$, $p = 0.09$, $\eta_p^2 = 0.12$) and no interaction between fortune and conflict ($F(1,23) = 1.83$, $p = 0.19$, $\eta_p^2 = 0.07$).

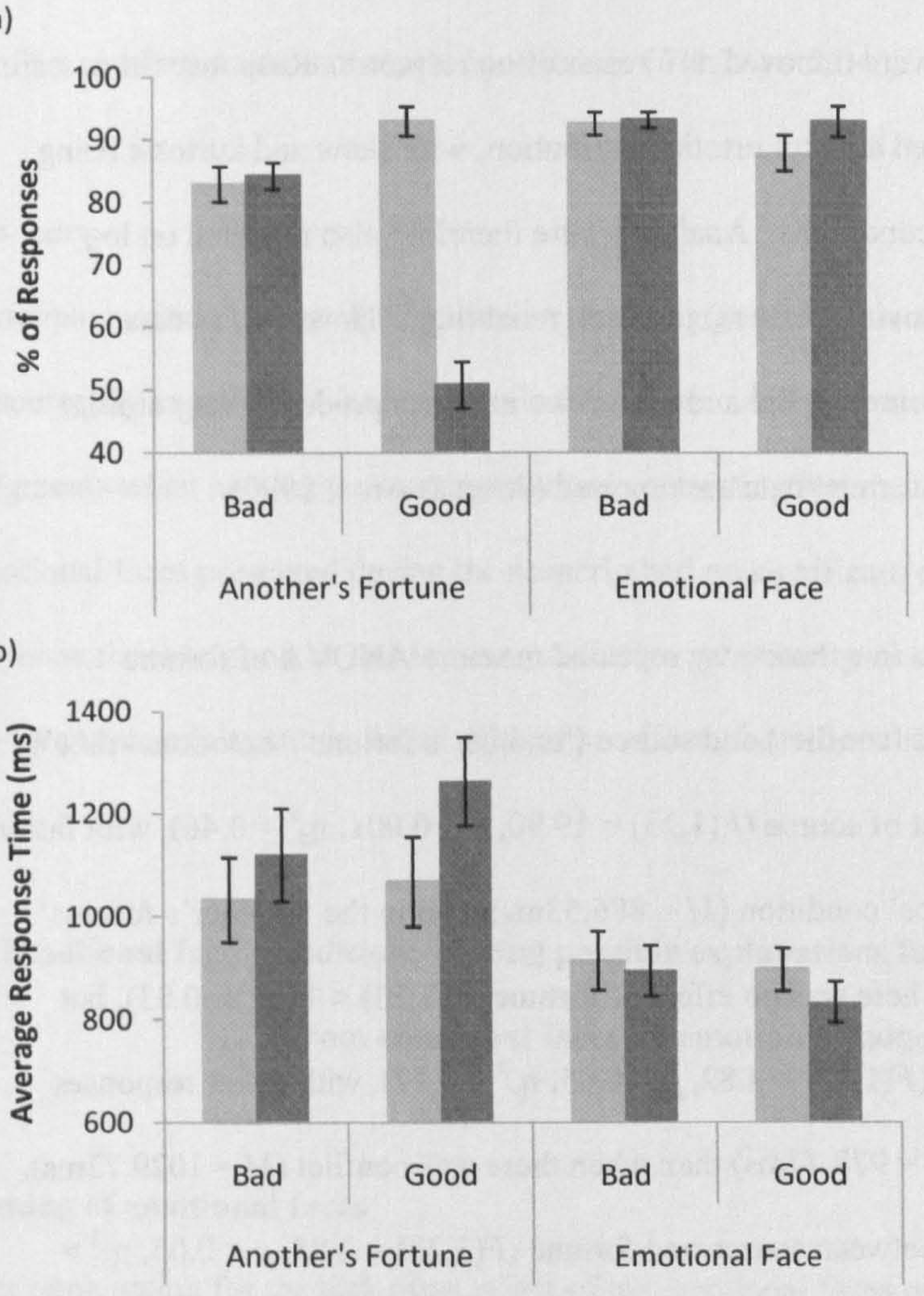

Figure 4.3. Proportion of bad responses to bad fortune and good responses to good fortune (a) and response times to scenarios of good and bad fortune (b) when another person had neutral or contrasting fortune in the scenario or when a neutral or conflicting emotional face was presented in Experiment 3. 1 standard error bars displayed.

Response times (see Figure 4.3b)

As participants were making judgments about how they would feel (where there is no objective correct response), response times were analysed irrespective of response. An arbitrary cut off of 5000ms was used to remove extreme outliers[7], resulting in the exclusion of 0.2% of data points in the 'emotional face' condition and 0.9% in the 'another's fortune' condition. No data points in the 'emotional face' condition and less than 0.1% in the 'another's fortune' condition were removed as a result of no response. Response times were positively skewed and displayed a leptokurtotic distribution, with skew and kurtosis being equal to 2.36 and 7.30 across conditions. Analyses were therefore also repeated on log transformed data (without removing outliers) to check reliability[8]. However, as data transformation is considered controversial and as the two analyses produced very similar results, analyses of the untransformed data are reported (Aron & Aron, 1999).

Responses times were analysed in a three-way repeated measure ANOVA of fortune (bad/good), conflict (no conflict/conflict) and source ('another's fortune'/'emotional face'). This analysis revealed an effect of source ($F(1,23) = 19.90, p < 0.001, \eta_p^2 = 0.46$), with faster responses in the 'emotional face' condition ($M = 886.53$ms) than in the 'another's fortune' condition ($M = 1121.96$ms). There was no effect of fortune ($F(1,23) < 1, \eta_p^2 = 0.03$), but there was an effect of conflict ($F(1,23) = 4.82, p < 0.05, \eta_p^2 = 0.17$), with faster responses when there was no conflict ($M = 978.77$ms) than when there was conflict ($M = 1029.72$ms). There was also an interaction between source and fortune ($F(1,23) = 4.85, p < 0.05, \eta_p^2 = 0.17$). Paired t-tests revealed that participants were slower to respond to both good ($M_{\text{'Another's Fortune'}} = 1165.91$ vs. $M_{\text{'Emotional Face'}} = 867.18$ms; $t(23) = 5.39, p < 0.001$) and bad fortune ($M_{\text{'Another's Fortune'}} = 1078.02$ vs. $M_{\text{'Emotional Face'}} = 905.87$ms; $t(23) = 2.67, p < 0.05$) in the 'another's fortune' condition than in the 'emotional face' condition, but the effect was numerically larger in response to good fortune. There was also an interaction between source

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[7] The average response times of all participants fell within 2 standard deviations of this value.
[8] Log transformation reduced skewness and kurtosis to 0.74 and 1.04 across conditions.

and conflict ($F(1,23) = 17.23, p < 0.001, \eta_p^2 = 0.43$). Paired t-tests revealed that responses were slower in the 'another's fortune' condition when the other had contrasting fortune (M = 1192.89ms) than when the other had neutral fortune (M = 1051.04ms; $t(23) = 3.51, p < 0.01$). In contrast, if anything responses were slightly faster in the 'emotional face' condition when a conflicting emotional face was presented (M = 866.55ms) than when a neutral face was presented (M = 906.50ms; $t(23) = 1.99, p = 0.06$). The three-way interaction between source, conflict and fortune did not reach significance ($F(1,23) = 2.04, p = 0.17, \eta_p^2 = 0.08$)[9].

Summary

Participants made less good responses to receiving good fortune when another person concurrently experienced bad fortune in the scenario and were slower to make emotional judgments when another person experienced contrasting fortune in the scenario. In contrast, emotional faces presented during the scenario had no significant effect on responses or response times to good or bad fortune. A further set of analyses were then performed to explore some explanations for the lack of an effect of emotional faces on judgments.

'Emotional face' condition: Testing possible explanations for the lack of interference from emotional faces on emotional judgments.

Timing of emotional faces

One explanation for the lack of an effect of the emotional faces on responses to good and bad fortune is that effects of emotional faces are short-lasting or easily disrupted by intervening events. In Experiment 3, emotional faces were presented either early in the scenario (before descriptions of participants' own fortune) or late in the scenario (after participants' own

[9] The three-way interaction between source, fortune and conflict reached significance using log transformed response times ($F(1,23) = 4.86, p < 0.05, \eta_p^2 = 0.17$). Exploration of this interaction, indicated that, in the 'another's fortune' condition, responses were slower to good fortune when another person had bad fortune ($t(23)= 3.50, p < 0.01$), but there was only a trend for responses to be slower to bad fortune when another person had good fortune ($t(23) = 1.92, p = 0.07$). In the 'emotional face' condition, there was no effect of conflict on responses to good fortune ($t(23) = 1.34, p = 0.19$) or bad fortune ($t(23) = 0.02, p = 0.98$).

fortune, just prior to response). If the emotional faces have short-lasting effects then it is possible that these may be observed by just considering scenarios where the emotional face was presented late in the scenario. To examine this, a separate repeated-measure ANOVA of fortune and conflict was performed on these scenarios.

Emotional Responses (see Figure 4.4a)

There was no effect of fortune ($F(1,23) = 3.03, p = 0.10, \eta_p^2 = 0.12$), but there was an effect of conflict when the emotional face was presented late in the scenario ($F(1,23) = 4.85, p < 0.05, \eta_p^2 = 0.17$), with more responses in line with participants' own fortune when a conflicting emotional face was presented ($M = 92.60\%$) than when there was no conflict ($M = 88.50\%$). However, this was qualified by an interaction between fortune and conflict ($F(1,23) = 5.63, p < 0.05, \eta_p^2 = 0.20$)[10]. Further analyses, revealed that more good responses were made to good fortune when a conflicting negative face was presented ($M = 92.30\%$) than when a neutral face was presented ($M = 83.40\%$; $t(23) = 2.68, p < 0.05$). In contrast, responses to bad fortune were similar whether a conflicting positive face ($M = 92.92\%$) or a neutral face was presented ($M = 93.54\%$; $t(23) = 0.31, p = 0.76$).

Response Times (see Figure 4.4b)

For response times, there was no effect of fortune ($F(1,23) = 2.78, p = 0.11, \eta_p^2 = 0.11$), no effect of conflict ($F(1,23) = 1.96, p = 0.18, \eta_p^2 = 0.08$) and no interaction between fortune and conflict ($F(1,23) < 1, \eta_p^2 = 0.01$) even when the emotional face was presented late in the scenario.

Summary

Thus, there was some evidence to indicate that (negative) emotional faces had short-lasting effects on affective judgments; but participants actually made more, not less, positive

[10] Neither the main effect of conflict ($F(1,23) = 2.20, p = 0.15, \eta_p^2 = 0.09$) nor the interaction between conflict and fortune ($F(1,23) = 0.29, p = 0.60, \eta_p^2 = 0.01$) were present when the emotional faces were presented early in the scenario.

responses to good fortune when negative faces were presented late in the scenario. This contrasts with the finding that another person's bad fortune in the scenario resulted in significantly less positive responses to good fortune.

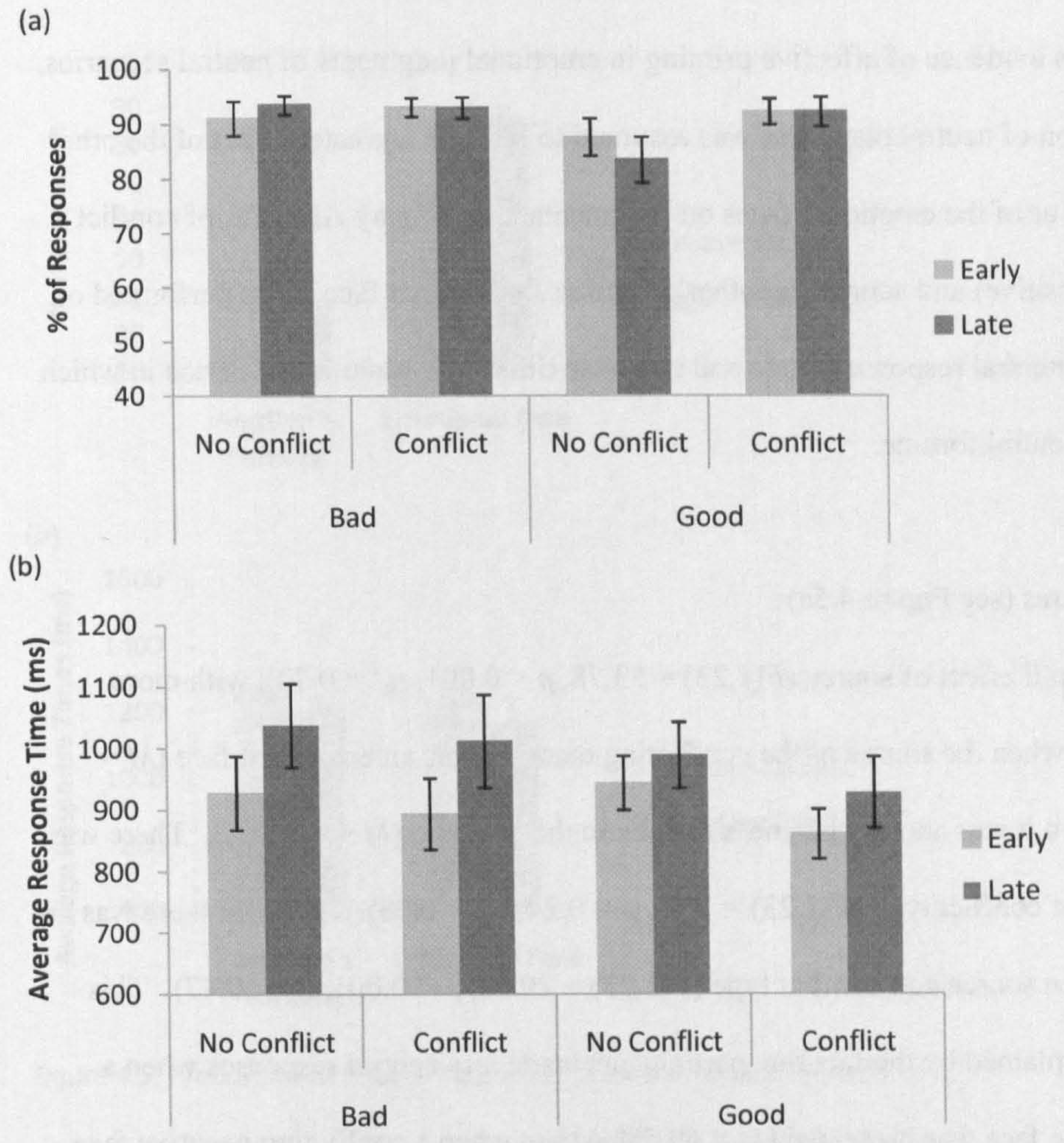


Figure 4.4. Proportion of bad responses to bad fortune and good responses to good fortune (a) and average response times (ms) to respond to scenarios of good and bad fortune (b) in the 'emotional face' condition of Experiment 3 when a neutral or conflicting emotional face was presented early and late in the scenario. 1 standard error bars displayed.

Responses to neutral fortune

Priming effects of emotional faces have usually been observed on affective judgments of affectively ambiguous or neutral stimuli (Murphy & Zajonc, 1983; Stapel et al., 2002). A feature of Experiment 3 was the inclusion of scenarios in which participants' own fortune was neutral (included to make 'neutral' a viable response); advantage was taken of this to examine whether there was evidence of affective priming in emotional judgments of neutral scenarios. A lower proportion of neutral responses was assumed to indicate a greater effect of the other person's fortunes or of the emotional faces on judgments. A two-way ANOVA of conflict type (negative/ positive) and source ('another's fortune'/'emotional face') was performed on the proportion of neutral responses made and response times in evaluating scenarios in which participants had neutral fortune.

Emotional responses (see Figure 4.5a)

There was an overall effect of source ($F(1,23) = 53.78, p < 0.001, \eta_p^2 = 0.70$), with more neutral responses when the source of the conflicting emotion was an emotional face (M = 78.10%) than when it was another person's fortune in the scenario (M = 43.30%). There was no overall effect of conflict type ($F(1,23) = 1.45, p = 0.24, \eta_p^2 = 0.06$). However there was an interaction between source and conflict type ($F(1,23) = 20.60, p < 0.001, \eta_p^2 = 0.47$). This interaction was explained by the fact that participants made less neutral responses when a conflicting positive face was presented (M = 69.58%) than when a conflicting negative face was presented (M = 86.67%; $t(23) = 3.74, p = 0.001$), but made a similar proportion of neutral responses when another person had good fortune (M = 47.08%) as when they had bad fortune in the scenario (M = 39.58%; $t(23) = 1.49, p = 0.15$). However, more neutral responses were made when the source of the conflict was an emotional face than when it was another person's fortune in the scenario for both negative ($t(23) = 8.37, p < 0.001$) and positive conflict ($t(23) = 4.25$, $p < 0.001$).

Response times (see Figure 4.5b)

There was no effect of source ($F(1,23) < 1$, $\eta_p^2 = 0.01$), no effect of conflict type ($F(1,23) = 2.89$, $p = 0.10$, $\eta_p^2 = 0.11$) and no interaction between source and conflict type ($F(1,23) < 1$, $\eta_p^2 = 0.00$) in response times.

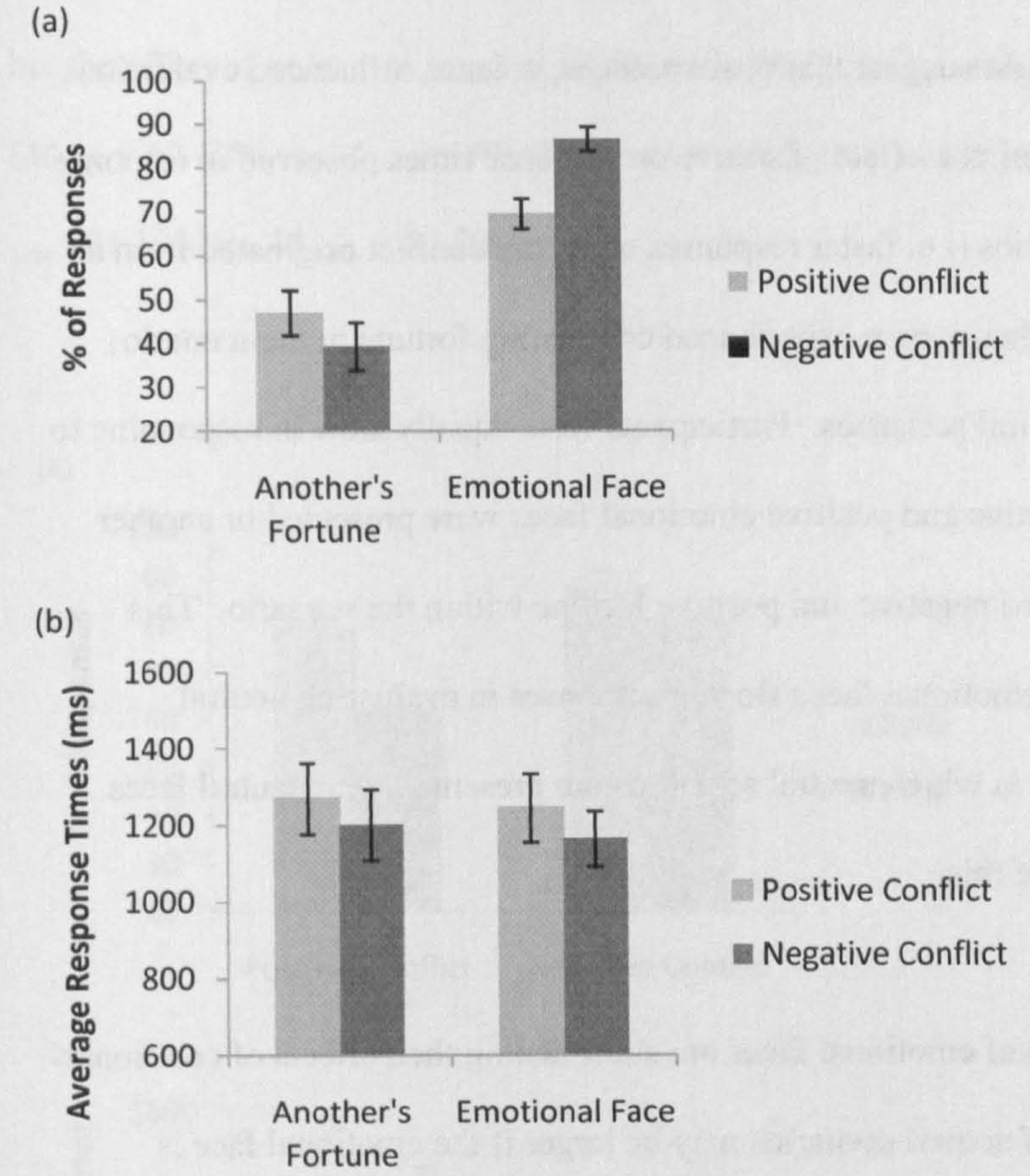


Figure 4.5. Proportion of neutral responses (a) and response times (b) to neutral scenarios when another person experienced a positive or negative event in the scenario or when a positive or negative emotional face was presented in Experiment 3. 1 standard error bars displayed.

Summary

In the 'emotional face' condition, participants made a lower proportion of neutral responses to neutral scenarios than they did good and bad responses to good and bad fortune scenarios.

This was also true in the 'another's fortune' condition. This may partly result from difficulty in finding events that are perceived as unequivocally neutral. However, participants made less neutral responses when a positive emotional face was presented during the scenario than when a negative emotional face was presented. Recalling that the same neutral scenarios were used with negative and positive faces (for different participants), the different effect of positive and negative faces might suggest that positive faces, at least, influenced evaluations of neutral scenarios. In addition, the effect of source on response times observed in response to good and bad fortune scenarios (i.e. faster responses when the conflict originated from an emotional face than when another person experienced contrasting fortune in the scenario) disappeared in response to neutral scenarios. Participants were equally slow in responding to neutral scenarios whether negative and positive emotional faces were presented or another person concurrently experienced negative and positive fortune within the scenario. This might tentatively suggest that emotional faces slowed responses in evaluating neutral scenarios; a baseline condition in which neutral scenarios are presented with neutral faces would provide a stronger test of this.

It is also possible that if effects of emotional faces are short-lasting then effects of emotional faces on affective judgments of neutral scenarios may be larger if the emotional face is presented later in the scenario. This was examined below.

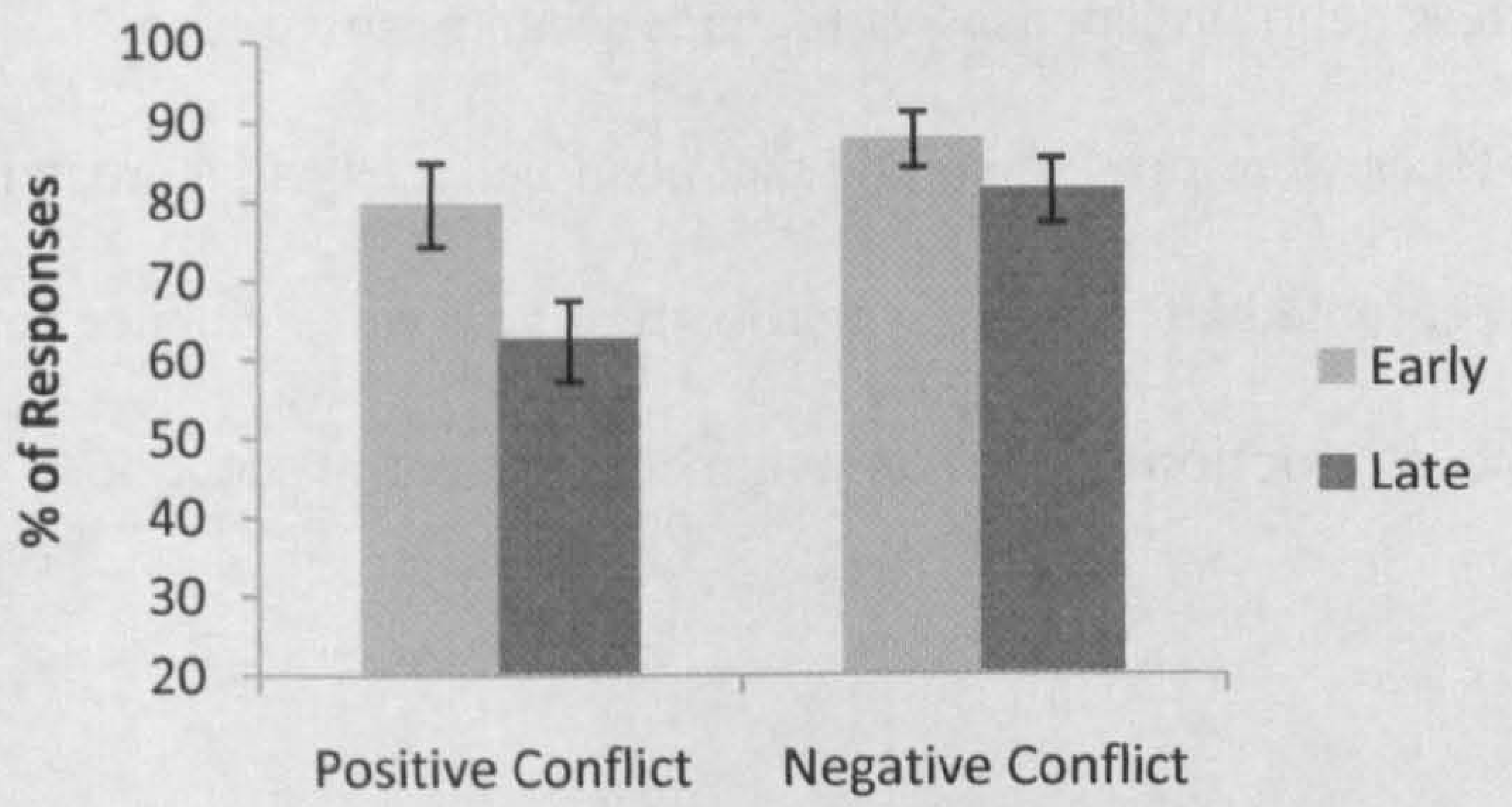
Timing of emotional faces and responses to neutral fortune

There were no neutral scenarios with neutral faces presented and therefore it was not possible to assess whether the emotional faces only had an effect when they were presented later in the scenario by considering these scenarios alone. The effect of the timing of the photograph on neutral scenarios was assessed by conducting an ANOVA of order (early/ late) and conflict type (negative/positive). A lower number of neutral responses when the emotional faces were presented later than when presented earlier might indicate that emotional faces had short-lasting effects on judgments.

Emotional Responses (see Figure 4.6a)

There was an effect of order on neutral scenarios ($F(1,23) = 8.29, p < 0.01, \eta_p^2 = 0.27$), with less neutral responses when the emotional face was presented after participants' own fortune (just prior to response; $M = 72.00\%$) than when it was presented before ($M = 83.80\%$). The interaction with conflict type did not reach significance ($F(1,23) = 2.86, p = 0.11, \eta_p^2 = 0.11$), but the effect of order was numerically larger when positive emotional faces were presented ($M_{Late} = 62.60\%$ vs. $M_{Early} = 79.90\%$) than when negative emotional faces were presented ($M_{Late} = 81.30\%$ vs. $M_{Early} = 87.70\%$).

(a)



(b)

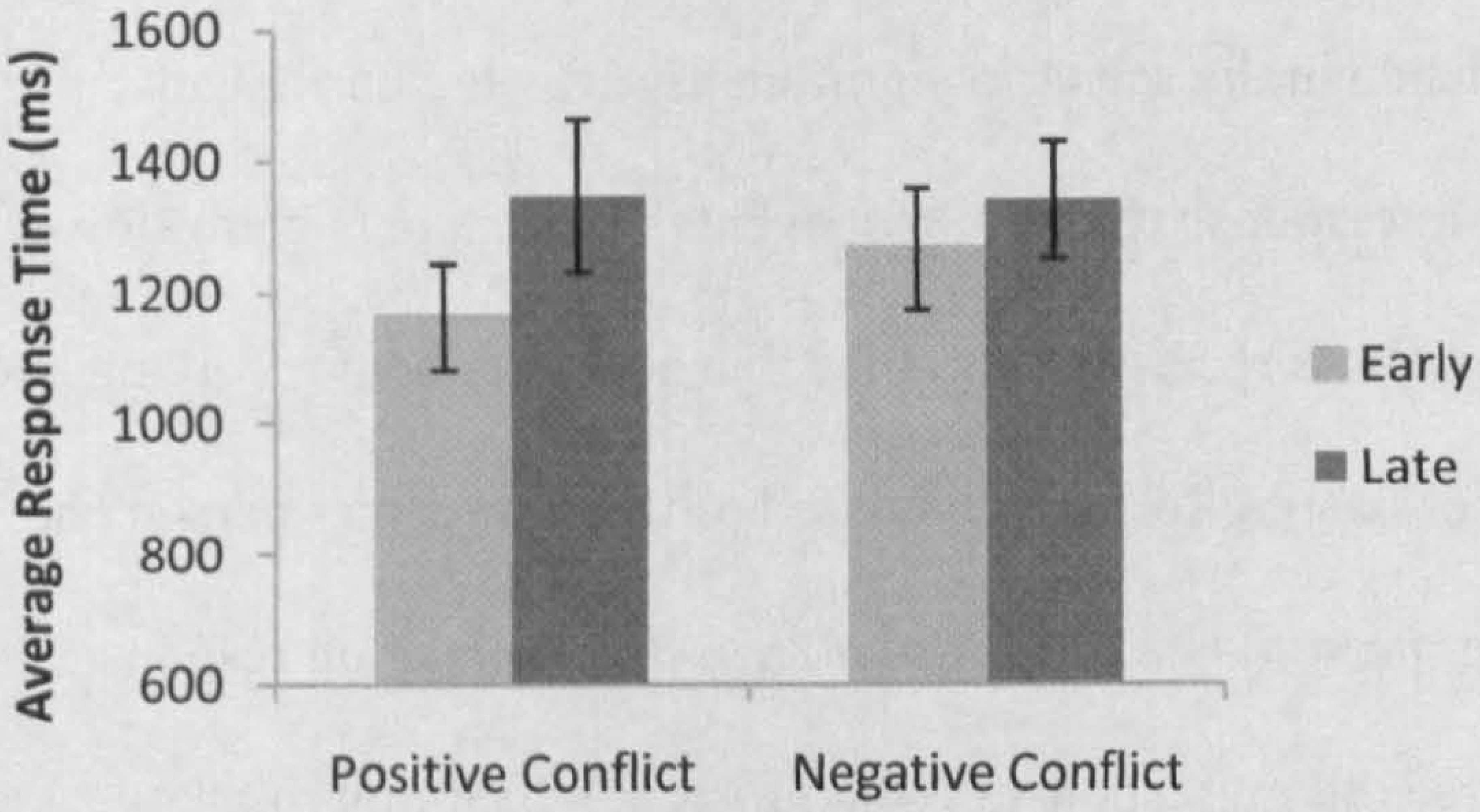


Figure 4.6. Proportion of neutral responses (a) and response times (b) to neutral scenarios in the emotional face condition of Experiment 3 when a positive or negative face was presented early or late in the scenario. 1 standard error bars displayed.

Response Times (see Figure 4.6b)

There was also a trend towards an effect of order on response times to neutral scenarios ($F(1,23) = 4.08, p = 0.06, \eta_p^2 = 0.15$)[11], with slower responses when the emotional face appeared after participants' own fortune ($M = 1345.77$) than when it appeared before ($M = 1215.99$ms). There was no interaction between conflict type and order ($F(1,23) < 1, \eta_p^2 = 0.04$).

Summary

Participants made less neutral responses and were slower to make responses (particularly for positive emotional faces) when the emotional face was presented later in the scenario, just prior to response. The finding that less neutral responses were made when positive faces were presented than when negative faces were presented, and that positive faces had a greater effect on affective judgments when presented later in the scenario, might provide evidence for short-lasting affective priming effects of emotional faces on judgments of neutral scenarios.

DISCUSSION

Another person's emotional experience in the scenario significantly affected participants' judgments of how they would feel in response to emotional events. Participants were slower to predict that they would feel good about receiving good fortune and bad about receiving bad fortune when another person had contrasting fortune compared to when the other person had neutral fortune. However, the other person's bad fortune had a greater impact on responses to good fortune (than their good fortune did on responses to bad fortune), resulting in a large reduction in the proportion of positive responses to good fortune. This positive-negative asymmetry replicates the pattern observed in Experiment 2 using a different response measure (a forced choice response rather than a rating response), where another person's bad fortune had a greater impact on judgments than another person's good fortune. In contrast,

[11] This was trend was not significant using log transformed response times ($F(1,23) = 1.19, p = 0.29, \eta_p^2 = 0.05$).

incongruent emotional faces did not interfere in responses to good and bad fortune. In fact, if anything, response times were slightly faster when conflicting emotional faces were presented than when there was no conflict and when negative emotional faces were presented late in the scenario participants made more, not less, good responses in line with their own good fortune (see general discussion for discussion of neutral scenarios). However, a number of methodological issues could account for the small effect of incongruent emotional faces on affective judgments and therefore a second experiment was undertaken to address some of these concerns.

Firstly, the quality of the photographs was considered. Although a pilot indicated that individuals could successfully recognise the emotional expressions, this was conducted under free viewing conditions and it is possible that recognition may have been poorer with the shorter presentations in the study. The pictures were taken under different lighting conditions in order to create variation in pictures and to create more naturalistic conditions, but this may have affected participants' ability to process the photographs at shorter presentations. In the second experiment, a new set of photographs were therefore selected from a validated picture database, the NimStim database (Tottenham et al., 2009), and were presented for longer durations to facilitate processing. A second concern was that the secondary task may have affected processing of the facial expressions. Although the letters superimposed on the pictures did not obscure the facial expressions, attention may have focused on the letter, drawing attention away from the emotional significance of the facial expression. In support of this, in one study participants viewed hands being penetrating by a needle and were either asked to rate the intensity of the pain felt by the owner of the hand or to count the number of hands in the image (Gu & Han, 2007). Focusing on the physical features of the stimulus was found to reduce empathy-related neural responses to the stimulus compared to when participants rated pain intensity (Gu & Han, 2007). Therefore, in the second experiment, a new secondary task was chosen, designed to encourage processing of the evaluative meaning of the faces; asking participants to make judgments about the valence of the emotional faces.

Finally, there was some evidence to suggest that the affective meaning of the photographs was processed, but that the effects of this processing were of short duration, dissipating soon after the offset of the photograph. Therefore, to increase the chance of detecting short-lasting effects of the emotional faces, in the second experiment, emotional faces were presented at three points in each scenario, at the beginning, in the middle and just prior to response.

Experiment 4

METHOD

Design

The design was the same as Experiment 3.

Participants

24 participants (14 female) took part in the study, with ages ranging between 20 and 22 years ($M = 20.71$ years, $SD = 0.69$). All participants were native English speakers. Participants were recruited from the student population at the University of Nottingham and received a small inconvenience allowance.

Materials

The scenarios were taken from those used in Experiments 2 and 3. The number of scenarios in each of the main conditions was reduced from 16 to 12 to shorten the total duration of the experiment, but, to match the main conditions, neutral fortune scenarios were increased from 10 to 12 scenarios per condition. Thus, in the 'another's fortune condition', each participant was presented with 12 good fortune and 12 bad fortune scenarios where the second person's experience was either neutral or conflicting with the fortune of participants (negative or positive) and 12 scenarios in which participants' own fortune was neutral, but where the second person's experience was either positive or negative (72 scenarios in total; Table 4.3).

In the 'emotional face' condition, the scenarios were again modified to remove references to the other person within the scenario. Photographs of an actor displaying neutral, positive or negative facial expressions were then displayed at three points in the scenario, at the beginning, in the middle and at the end. Each participant was presented with 12 good fortune and bad fortune scenarios, where the emotional face was either neutral or conflicting with the fortune of participants (negative or positive) and 12 scenarios in which participants' own fortune was neutral, but where the emotional face was either positive or negative (72 scenarios in total; Table 4.3). In addition, in the 'emotional face' condition, participants were presented with 8 filler scenarios (2 in each of the 4 blocks; see below). These scenarios described relatively neutral events in order to maintain the balance of positive and negative events across the 'emotional face' and the 'another's fortune' condition.

For this study, photographs were selected from the NimStim database (Tottenham et al., 2009). This is a database of 672 photographs of 43 actors (male and female) of different ethnicities and posing eight expressions: happy, sad, angry, fear, surprised, disgust, neutral, and calm. The photographs display a frontal head shot of the actor on a plain background (Figure 4.7). From the database, 4 happy, 4 sad and 4 neutral male faces (for male participants), and female faces (for female participants), were selected. The identity of the male and female actors varied in the photographs selected (using 6 different females and 6 different male actors across emotional expressions). Each photograph was used an equal number of times in each condition. As participants were predominantly Caucasian, Caucasian actors were chosen for the photographs. Only sad (and not other negative) expressions were selected as these most closely matched the nature of the other person's emotional experiences in the 'another's fortune' condition. Fear and disgust were not representative of the other person's emotional experiences in this condition and angry faces may have been perceived as threatening and the anger as self-directed. This was not true of anger inducing events within scenarios, where anger could result from the situation or the action of a third person and not from something the participant did. Photographs were approximately 4.77° x 6.77° in size.

Table 4.3

Number of Scenarios Presented to Each Participant in Each Condition in Experiment 4.

Condition	Self Fortune	Conflict	No. of scenarios
'Another's fortune'	Good	No Conflict	12
	Good	Conflict (Negative)	12
	Bad	No Conflict	12
	Bad	Conflict (Positive)	12
	Neutral	Conflict (Negative)	12
	Neutral	Conflict (Positive)	12
'Emotional face'	Good	No Conflict	12
	Good	Conflict (Negative)	12
	Bad	No Conflict	12
	Bad	Conflict (Positive)	12
	Neutral	Conflict (Negative)	12
	Neutral	Conflict (Positive)	12

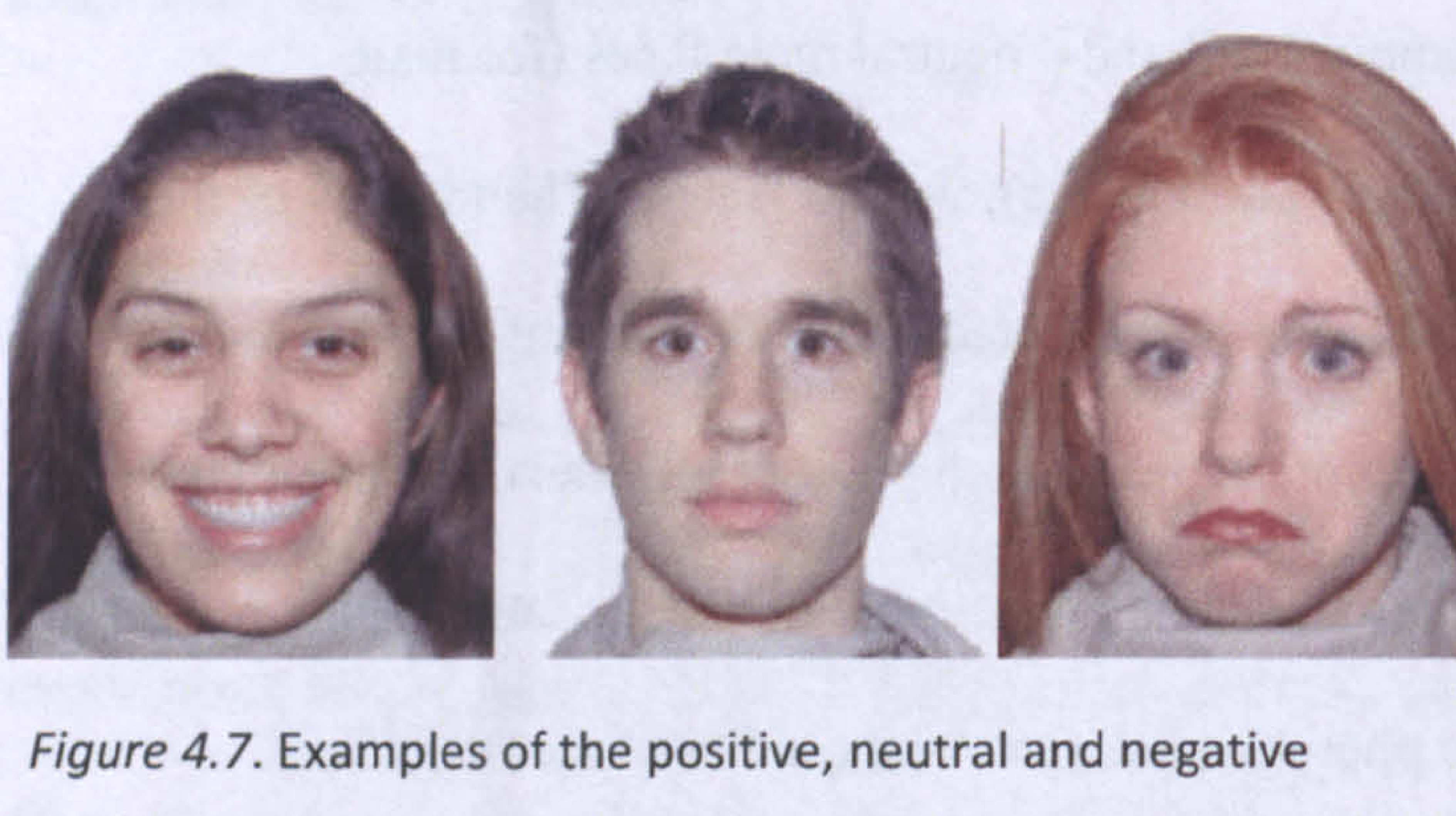


Figure 4.7. Examples of the positive, neutral and negative photographs selected from the NimStim database (Tottenham et al., 2009) and used in the 'emotional face' condition in Experiment 4.

Procedure

Each participant was randomly allocated to complete either the 'another's fortune or the 'emotional face' condition first. Both conditions were programmed using E-Prime (Schneider et al., 2002). For both conditions, participants first completed a practice block of 10 scenarios (with an additional 2 filler scenarios in the 'emotional face' condition; see below).

'Another's fortune' condition

The procedure for the 'another's fortune' condition was the same as Experiment 3, with 4 blocks of 18 scenarios. The only exceptions were that participants were no longer cued to respond with a photograph of them self[12], but were simply presented with their response options, and the time given to respond was cut to 8000ms, with Experiment 3 suggesting that this was ample time for participants to make their judgments.

'Emotional face' condition

For the 'emotional face' condition, several changes to Experiment 3 were made and so the procedure is described in full here (Figure 4.8). Participants were exposed to emotional faces three times, at the beginning, in the middle and at the end of each scenario. This was done to increase exposure to the other person's emotion and to increase the possibility of detecting short-lasting effects of the emotional faces. In addition, to encourage participants to process the faces, rather than making letter judgments like in Experiment 3, on filler scenarios participants made judgments about the valence of the emotional faces. While on experimental scenarios the three photographs displayed within a scenario were identical, on filler scenarios the actor in the third photograph had a different identity, and participants were

[12] The photograph used to cue participants to respond in Experiment 3 formed part of the design to allow comparisons between the 'another's fortune' condition in Experiment 3 (where participants only made self judgments) and Experiment 6 (presented in Chapter 5; where they switched between making self and other judgments; the experiments are not presented chronologically). However, because participants always made self judgments in Experiment 4, it was not considered necessary to provide a perspective cue and therefore this did not form part of the design of Experiment 4. Please note that because the 'another's fortune' and the 'emotional face' condition are compared within experiments this difference should have no bearing on the interpretation of the findings.

asked to judge whether the actor's expression in that photograph was of the same or of difference valence to the preceding two photographs presented during the scenario. This condition had 4 blocks of 20 scenarios (including 2 filler scenarios).

A centrally presented fixation point was presented for 500ms, followed by an emotional face for 1000ms, part 1 of the scenario, an emotional face for 1000ms, part 2 of the scenario, an emotional face for 1000ms and then finally the cue to make a judgment. This cue was either response options to make an emotion judgment (Bad vs. Neutral, Neutral vs. Good or Bad vs. Good) or, on filler trials, response options to make an expression judgment (Same vs. Different). Participants were able to self pace their reading of parts 1 and 2 of the scenario using the spacebar key on the keyboard. They were given up to 10000ms to read each part of the scenario. Participants made their response by pressing one of the two mouse keys. Participants were given 8000ms to respond, but were encouraged to respond quickly.

After completing both conditions, participants rated how much they liked the other person and how similar to the other person they perceived themselves to be in the 'another's fortune condition[13]' and how vividly they could imagine the scenarios in both the 'another's fortune' and the 'emotional face' conditions (all on a 7-point scale from 'Not at all' (1) to 'Extremely (7)).

[13] The identity of the other in the 'emotional face' condition in Experiment 4 varied and therefore these questions were not appropriate for this condition.

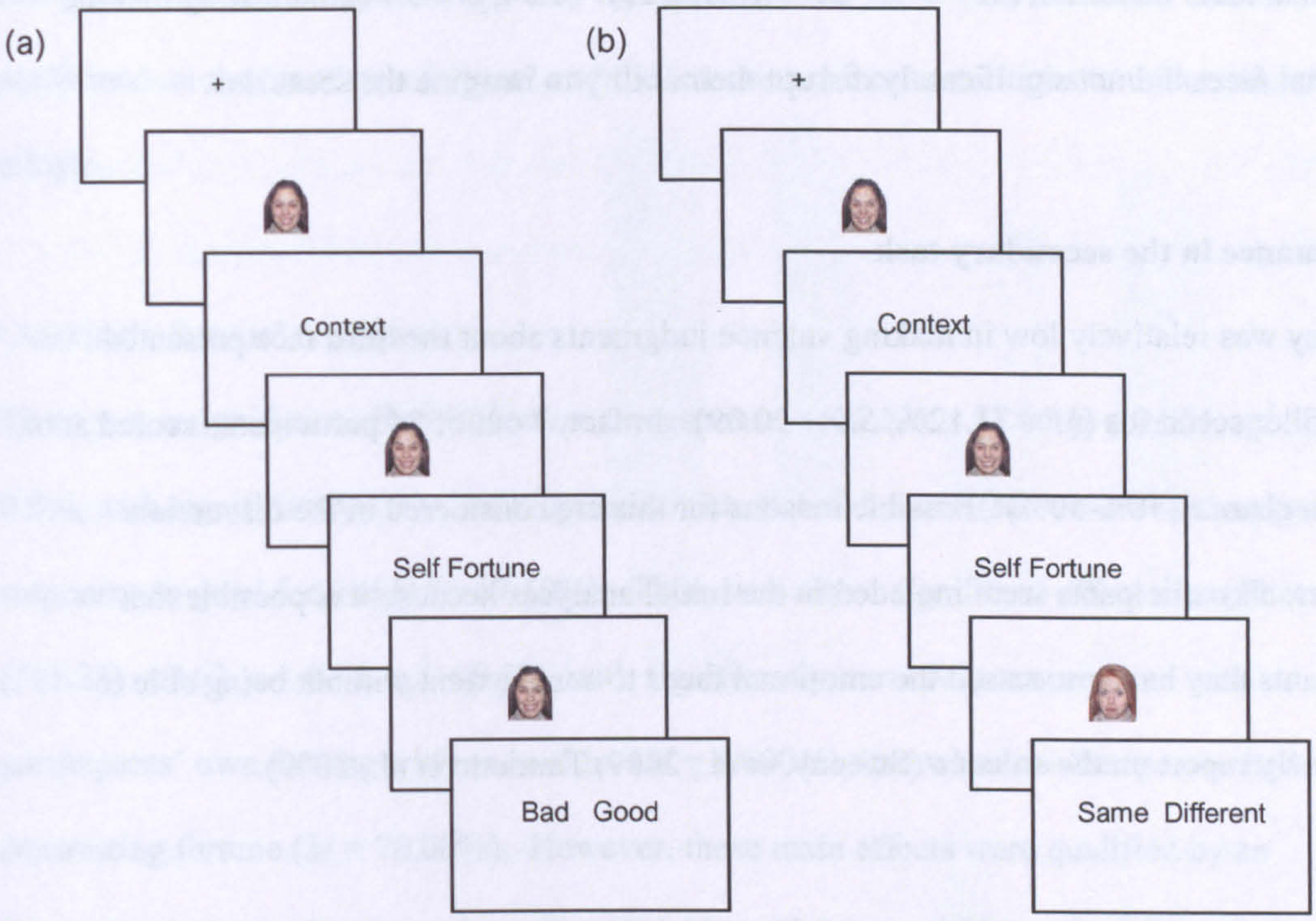


Figure 4.8. Schematic of the procedure of experimental (a) and filler scenarios (b) in the 'emotional face' condition in Experiment 4. The 'another's fortune' condition followed the procedure used in Experiment 3, with the exception that participants were no longer cued with a photograph of them self.

RESULTS

Exit questionnaire: Impressions of the other and reported ability to imagine the scenarios.

Participants in this experiment reported liking the other in the 'another's fortune' condition slightly less than in Experiment 3, but the other was still moderately liked (M = 4.45, SD = 1.10). Participants in this experiment also rated their ability to imagine the scenarios lower than participants in Experiment 3, despite using the same pool of scenarios. However, they did not rate their ability to imagine the scenarios in the 'another's fortune' condition (M =

5.42, $SD = 0.97$) to be significantly different to their ability to imagine the scenarios in the 'emotional face' condition ($M = 4.92$, $SD = 1.25$; $t(23) = 1.54$, $p = 0.14$), indicating that the emotional faces did not significantly disrupt their ability to imagine the scenarios.

Performance in the secondary task

Accuracy was relatively low in making valence judgments about the third face presented within filler scenarios ($M = 71.12\%$, $SD = 20.09$). In fact, 7 out of 24 participants scored at or less than chance (38%-50%). Possible reasons for this are considered in the discussion. However, all participants were included in the initial analyses because it is possible that participants may have processed the emotional faces to some extent without being able to consciously report on the valence (Sweeny, et al., 2009; Tamietto et al., 2009).

Responses to good and bad fortune

Emotional Responses (see Figure 4.9a)

The proportion of bad responses made to bad fortune and good responses made to good fortune were analysed in a three-way repeated measure ANOVA of fortune (bad/good), conflict (no conflict/conflict) and conflict source ('another's fortune'/'emotional face'). This analysis revealed an effect of fortune ($F(1,23) = 18.57$, $p < 0.001$, $\eta_p^2 = 0.47$), with more bad responses ($M = 89.90\%$) than good responses ($M = 80.80\%$). There was also an effect of conflict ($F(1,23) = 5.48$, $p < 0.05$, $\eta_p^2 = 0.19$) and an effect of source ($F(1,23) = 111.33$, $p < 0.001$, $\eta_p^2 = 0.83$), with more responses in line with the fortune of participants when there was no conflict ($M = 88.10\%$) than when there was conflict ($M = 82.50\%$) and when the source was an emotional face ($M = 93.70\%$) than when it was another person's fortune in the scenario ($M = 77.00\%$). However, these main effects were qualified by a number of interactions, including between fortune and conflict ($F(1,23) = 28.92$, $p < 0.001$, $\eta_p^2 = 0.56$), source and fortune ($F(1,23) = 29.30$, $p < 0.001$, $\eta_p^2 = 0.56$) and source and conflict ($F(1,23) = 12.08$, $p < 0.01$, $\eta_p^2 = 0.34$), as well as a three-way interaction between source, fortune and conflict ($F(1,23) = 45.94, p < 0.001, \eta_p^2 = 0.66$). As the three-way interaction qualified the two-way interactions, separate two-way repeated measure ANOVAs (fortune x conflict) were performed on the 'another's fortune' and the 'emotional face' conditions to understand these effects.

'Another's fortune' condition

There was a significant effect of fortune on responses ($F(1,23) = 33.66, p < 0.001, \eta_p^2 = 0.59$), with significantly more bad responses made to bad fortune ($M = 86.50\%$) than good responses to good fortune ($M = 67.50\%$). There was also a significant effect of conflict ($F(1,23) = 9.63, p < 0.01, \eta_p^2 = 0.30$), with significantly more responses in line with participants' own fortune with no conflict ($M = 84.00\%$) than when another person had contrasting fortune ($M = 70.00\%$). However, these main effects were qualified by an interaction between fortune and conflict ($F(1,23) = 52.56, p < 0.001, \eta_p^2 = 0.70$). Follow-up analyses indicated that participants made less good responses to good fortune when another person had bad fortune ($M = 51.75\%$) then when another person had neutral fortune ($M = 83.29\%$; $t(23) = 5.18, p < 0.001$), but made a similar proportion of bad responses to bad fortune whether another person had good fortune ($M = 88.25\%$) or neutral fortune ($M = 84.75\%$; $t(23) = 0.41,\ p = 0.69$).

'Emotional face' condition

In contrast to when another person experienced a contrasting emotional event in the scenario, when the source of the conflicting emotion was a emotional face presented during the scenario, there was no effect of fortune ($M_{Bad} = 93.30\%$ vs. $M_{Good} = 94.00\%$; $F(1,23) < 1$, $\eta_p^2 = 0.00$), no effect of conflict ($M_{No\ Conflict} = 92.30\%$ vs. $M_{Conflict} = 95.00\%$; $F(1, 23) = 2.73$, $p = 0.11, \eta_p^2 = 0.11$) and no interaction between fortune and conflict ($F(1, 23) < 1, \eta_p^2 = 0.02$).

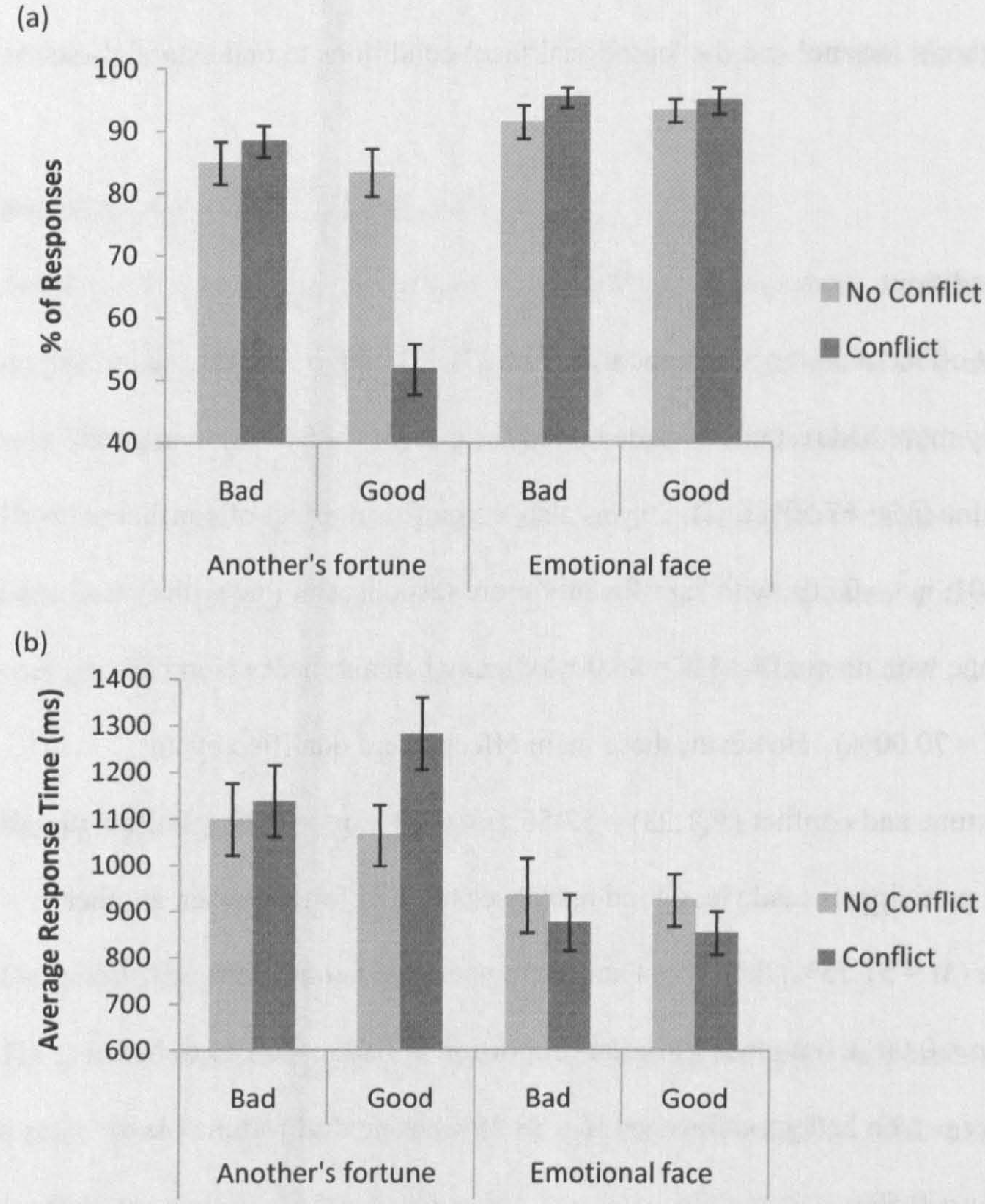


Figure 4.9. Proportion of bad responses to bad fortune and good responses to good fortune (a) and response times to scenarios of good and bad fortune (b) when another person had neutral or contrasting fortune in the scenario or when a neutral or conflicting emotional face was presented in Experiment 4. 1 standard error bars displayed.

Response times (see Figure 4.9b)

An arbitrary cut off of 5000ms was used to remove extreme outliers[14], resulting in the exclusion of 0.5% of data points in the 'emotional face' condition and 0.6% in the 'another's fortune' condition. 0.2% of data points were removed as a result of no response in the 'emotional face' condition and less than 0.1% in the 'another's fortune' condition. Response times were again positively skewed with a leptokurtotic distribution, with skewness and kurtosis values of 2.19 and 7.64 across conditions. Therefore, analyses were also repeated on log transformed data (without removing outliers) to check reliability[15], however based on the same principle as Experiment 3, analyses of the untransformed data is reported.

Response times made to bad and good fortune were analysed in a three-way repeated measure ANOVA of fortune (bad/good), conflict (no conflict/conflict) and source ('another's fortune'/'emotional face'). This analysis revealed an effect of source ($F(1,23)= 21.55, p < 0.001, \eta_p^2 = 0.48$), with faster responses in the 'emotional face' condition ($M = 896.96$ms) than in the 'another's fortune' condition ($M = 1145.89$ms). There was no effect of fortune ($F(1,23) <1$) or of conflict ($F(1,23) <1$). However, there was an interaction between source and conflict ($F(1,23)=13.54, p = 0.001, \eta_p^2 = 0.37$) and a trend for an interaction of source x conflict x fortune ($F(1,23) = 3.81, p = 0.06, \eta_p^2 = 0.14$).[16] Separate two-way repeated measures ANOVAs (fortune x conflict) were performed on the 'another's fortune' and the 'emotional face' conditions to understand these interactions.

'Another's fortune' condition

There was no effect of fortune ($F(1,23) = 1.50, p = 0.23, \eta_p^2 = 0.06$), but there was an effect of conflict ($F(1,23) = 5.76, p < 0.05, \eta_p^2 = 0.20$), with faster response times when there was no conflict ($M = 1081.05$ms) than when another person had contrasting fortune in the

[14] The average response times of all participants fell within 2 standard deviations of this value.
[15] Log transformation reduced skewness to 0.26 and kurtosis to 0.05.
[16] This trend was significant using log transformed response times ($F(1,23) = 4.34$, $p < 0.05$, $\eta_p^2 = 0.16$).

scenario (M = 1210.73ms). The interaction between fortune and conflict failed to reach significance ($F(1,23) = 3.29, p = 0.08, \eta_p^2 = 0.13$)[17], however planned comparisons revealed that participants were slower to respond to good fortune when another person had bad fortune (M = 1283.52ms) than when another person had neutral fortune (M = 1064.04ms; $t(23) = 3.32, p < 0.01$), but were not significantly slower to response to bad fortune when another person had good fortune (M = 1137.94ms) than when another person had neutral fortune (M = 1098.06ms; $t(23) = 0.50, p = 0.62$).

'Emotional face' condition

Again, there was no effect of fortune on response times ($F(1, 23) < 1, \eta_p^2 = 0.00$), but there was an effect of conflict ($F(1,23) = 5.61, p < 0.05, \eta_p^2 = 0.20$)[18]. However, in contrast to the 'another's fortune' condition, response times were faster when a conflicting emotional face was presented (M = 865.19ms) than when a neutral face was presented (M = 928.74ms). There was no interaction between fortune and conflict ($F(1, 23) < 1, \eta_p^2 = 0.04$).

Summary

Consistent with Experiment 3, participants made less good responses to good fortune, and were significantly slower to make responses, when another person concurrently had bad fortune in the scenario. In contrast, and also consistent with Experiment 3, conflicting emotional faces had no effect on judgments, and responses times were actually faster when conflicting emotional faces were presented. Like for Experiment 3, further analyses were then undertaken to examine possible explanations for why emotional faces did not interfere in affective judgments.

[17] This trend reached significance using log transformed response times ($F(1,23) = 4.70, p < 0.05, \eta_p^2 = 0.17$).
[18] This was only a trend using log transformed response times ($F(1,23) = 3.88, p = 0.06, \eta_p^2 = 0.14$).

'Emotional face' condition: Testing possible explanations for the lack of interference from emotional faces on emotional judgments.

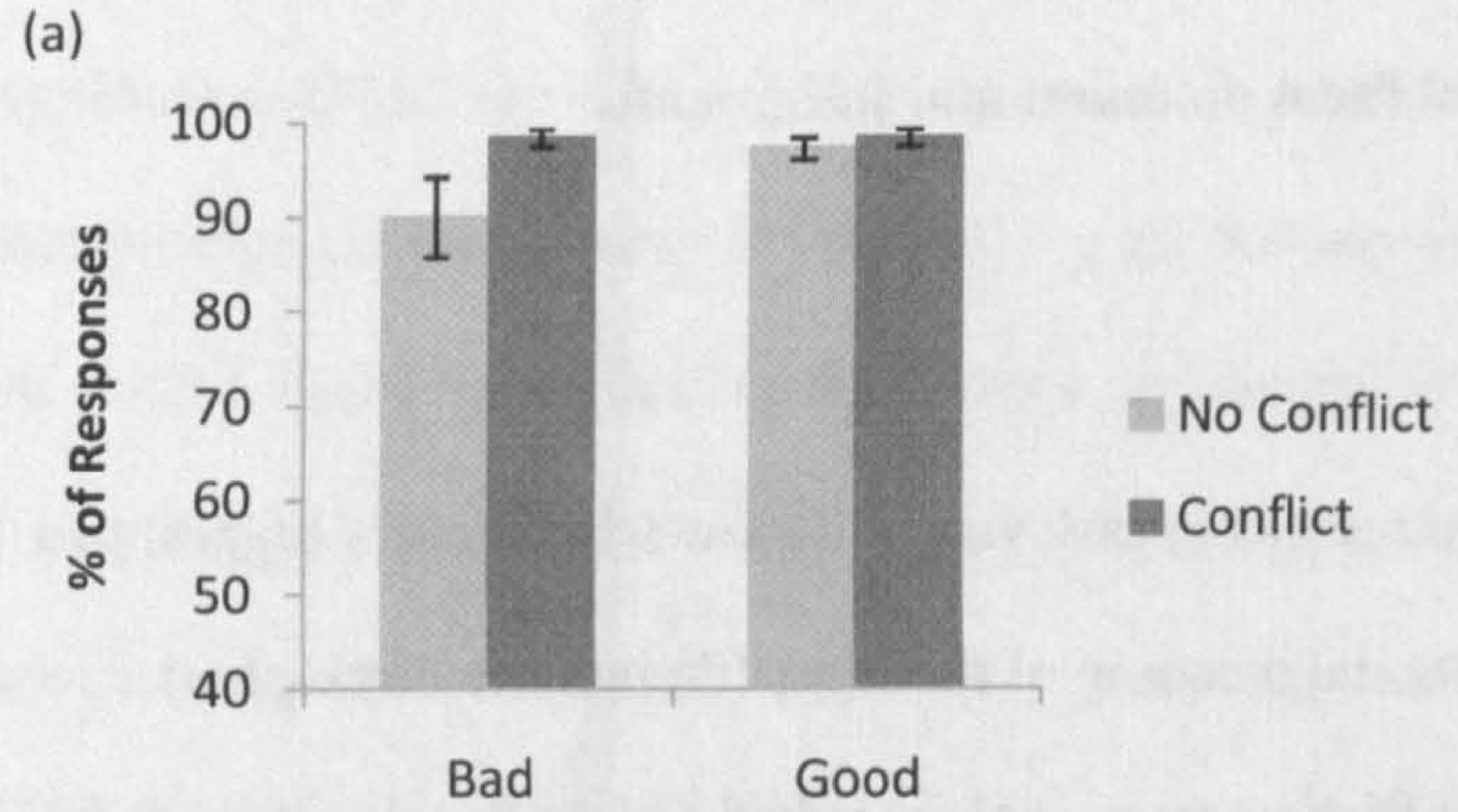
Awareness of the Emotional Faces

As reported above, performance in the secondary task was quite low which might suggest that not all participants processed the emotional meaning of the faces (though see discussion), providing one explanation for why conflicting emotional faces had little effect on responses. This was tested by performing a separate analyses of the 14 participants who scored highest on the secondary task (using an accuracy score of equal to or greater that 75% as an arbitrary cut off; $M = 86.00\%$, $SD = 8.34$), and who therefore appeared to show greater awareness of the emotional faces.

Emotional responses (see Figure 4.10a)

These participants displayed an overall effect of conflict on responses to good and bad fortune ($F(1,13) = 4.71, p < 0.05, \eta_p^2 = 0.27$), with more responses in line with their own fortune when conflicting emotional faces were presented ($M = 98.30\%$) than when a neutral face was presented ($M = 93.60\%$). There was no effect of fortune ($F(1,13) = 1.84, p = 0.20, \eta_p^2 = 0.12$) and no interaction between fortune and conflict ($F(1,13) = 2.69, p = 0.13, \eta_p^2 = 0.17$). However, the effect of conflict was mostly driven by an increase in bad responses to bad fortune when positive emotional faces were presented ($M = 98.30\%$) compared to when a neutral face was presented ($M = 90.00\%$). The proportion of good responses to good fortune was almost at ceiling whether a negative ($M = 98.30\%$) or a neutral face was presented ($M = 97.10\%$)[19].

[19] The remaining participants, who had low accuracy on the secondary task, did not show this effect of conflict ($F(1,9) < 1$).



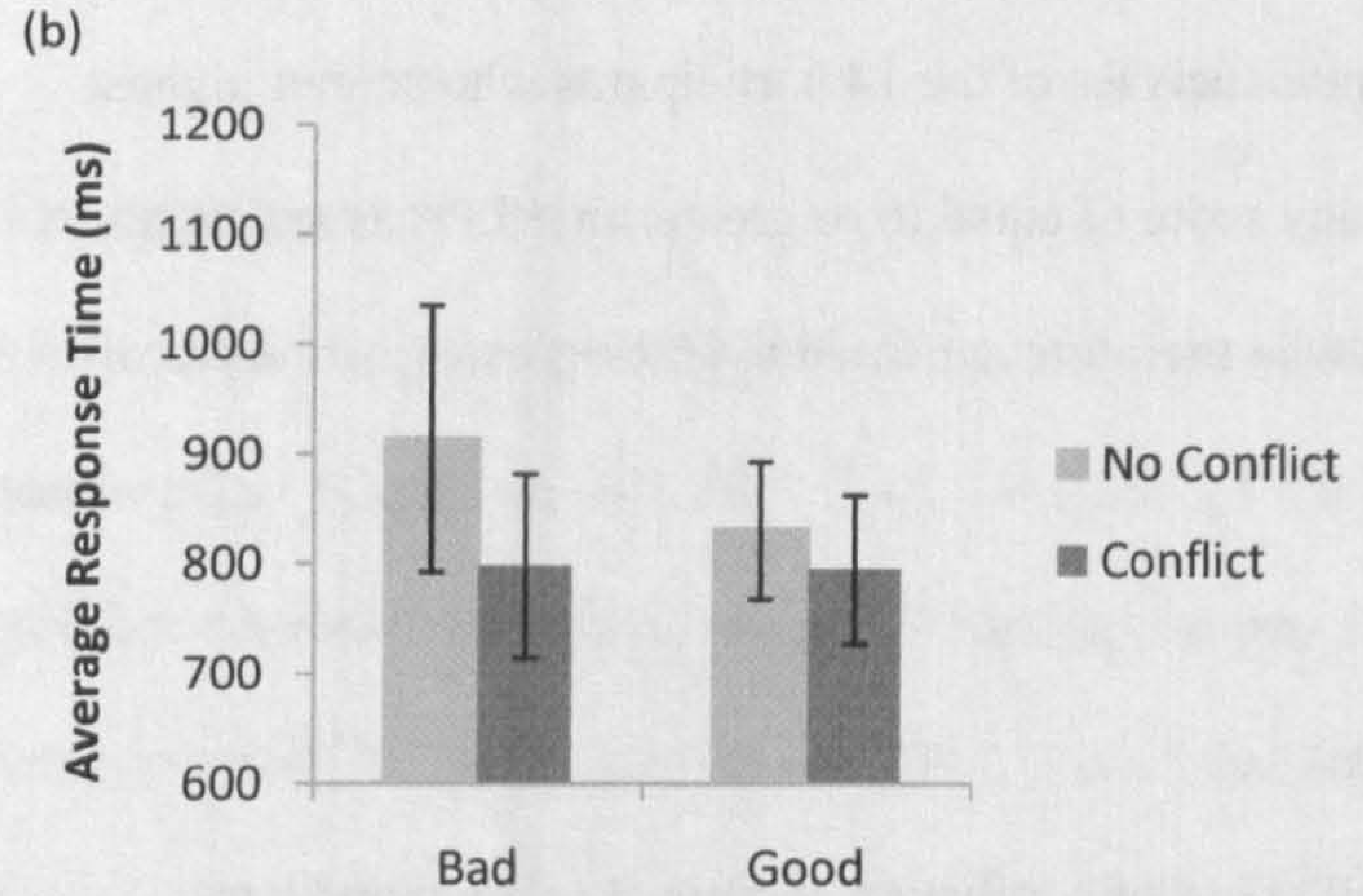


Figure 4.10. Proportion of bad responses to bad fortune and good responses to good fortune (a) and responses times to scenarios of good and bad fortune (b) in the 'emotional face' condition in Experiment 4 when a neutral or conflicting emotional face was presented, in participants who scored 75% or greater in the secondary task (N = 14). 1 standard error bars displayed.

Response times (see Figure 4.10b)

These participants displayed no effect of fortune on response times ($F(1,13) < 1$, $\eta_p^2 = 0.03$). However, there was a trend towards an effect of conflict ($F(1,13) = 3.95$, $p = 0.07$, $\eta_p^2 = 0.23$), with faster responses when conflicting emotional faces were presented ($M = 797.00$ms) than when neutral faces were presented ($M = 872.13$ms)[20]. There was no interaction between fortune and conflict ($F(1,13) = 1.22$, $p = 0.29$, $\eta_p^2 = 0.09$), though like for the emotional

[20] Response times were also faster with conflict ($M = 960.65$ms) than without conflict ($M = 1007.99$ms) for the remaining participants, though this was not significant ($F(1,9) = 1.52$, $p = 0.25$, $\eta_p^2 = 0.14$).

response data, the trend for an effect of conflict was more evident on responses to bad fortune, where positive emotional faces facilitated responses (M = 798.64ms) compared to neutral faces (M = 913.70ms). Negative emotional faces (M = 795.36ms) had a smaller facilitatory effect on responses to good fortune (relative to neutral faces; M = 830.56ms).

In sum, for participants who showed greater awareness of the emotional faces, conflicting emotional faces appeared to facilitate affective judgments (particularly positive emotional faces), with more responses in line with their own fortune and faster responses in conflict conditions than in no conflict conditions.

Response to neutral fortune

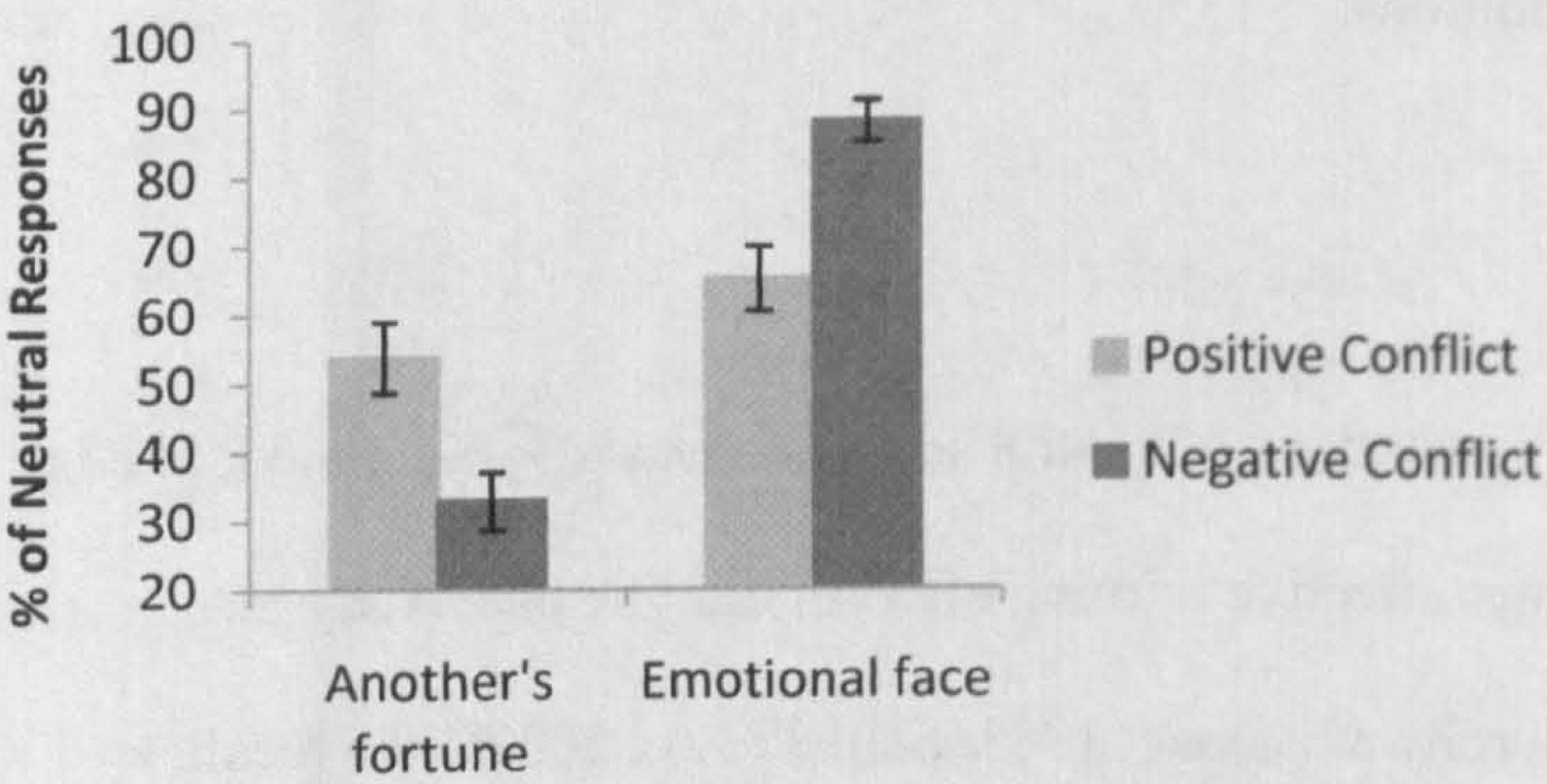
The effect of emotional faces on evaluations of neutral scenarios was also examined, like in Experiment 3, to determine whether affective priming effects might be observed on affectively ambiguous events (Murphy & Zajonc, 1983; Stapel et al., 2002). To recall, a lower number of neutral responses might indicate greater effect of the other person's good or bad fortune in the scenario or of the negative and positive faces presented during the scenario. The proportion of neutral responses and response times to neutral scenarios were analysed in a two-way repeated measure ANOVA of conflict type (negative/positive) and source ('another's fortune'/'emotional face').

Emotional responses (see Figure 4.11a)

There was an overall effect of source ($F(1,23) = 32.52, p < 0.001, \eta_p^2 = 0.59$), with more neutral responses when emotional faces were presented (M = 76.80%) than when another person had good or bad fortune in the scenario (M = 43.40%). There was no overall effect of conflict type ($F(1,23) < 1, \eta_p^2 = 0.00$). However there was an interaction between source and conflict type ($F(1,23) = 61.97, p < 0.001, \eta_p^2 = 0.73$). This interaction was explained by the fact that participants made less neutral responses when positive emotional faces were presented (M = 65.29%) than when negative emotional faces were presented (M = 88.29%;

$t(23) = 4.58, p < 0.001$), but made more neutral responses when another person had good fortune in the scenario ($M = 53.87\%$) than when another person had bad fortune in the scenario ($M = 32.96\%$; $t(23) = 5.51, p < 0.001$). In addition, significantly more neutral responses were made in the 'emotional face' condition than in the 'another's fortune' condition only with negative conflict ($t(23) = 9.58, p < 0.001$), and not with positive conflict ($t(23) = 1.60, p = 0.12$).

(a)



(b)

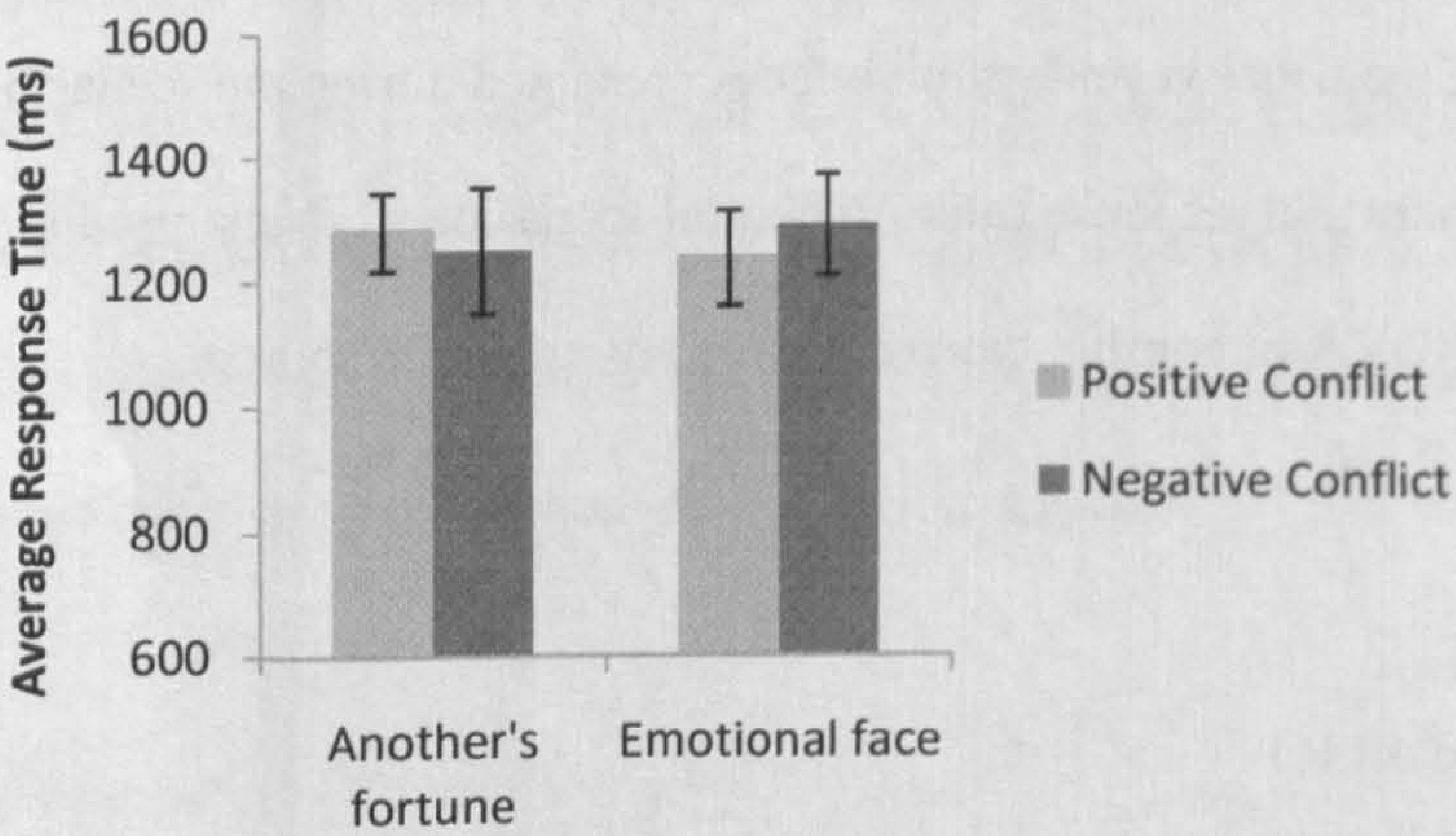


Figure 4.11. Proportion of neutral responses made in Experiment 4 to neutral events (a) and response times to scenarios of neutral fortune (b) when another person experienced a positive or negative event or when a positive or negative emotional face was presented. 1 standard error bars displayed.

Response times (see Figure 11b)

There was no effect of source ($F(1,23) < 1$, $\eta_p^2 = 0.00$), no effect of conflict type ($F(1,23) < 1$, $\eta_p^2 = 0.00$) and no interaction between source and conflict type on response times ($F(1,23) < 1$, $\eta_p^2 = 0.04$).

Summary

A similar pattern of results was observed to Experiment 3. Participants made less neutral responses when a positive emotional face was presented than when a negative emotional face was presented. Again, as the same scenarios (across participants) were presented in the two conditions, differences in the perceived neutrality of the scenarios in the two conditions could not explain the results. In addition, in this experiment, neutral responses in the 'emotional face' condition fell close to the level of neutral responses made in the 'another's fortune' condition when positive emotional faces were presented during processing. These findings might indicate that positive emotional faces (at least) biased judgments of neutral scenarios. Moreover, the effect of source on response times observed following judgments about good and bad fortune scenarios disappeared on neutral scenarios, where another person's fortune and emotional faces appeared to have a similar effect on response times.

DISCUSSION

Performance of participants on the secondary task, requiring them to identify whether the third emotional face presented during a scenario was of the same or of different valence to two emotional faces presented earlier in the scenario, was poor suggesting that it was not successful in encouraging participants to evaluate the affective content of the faces. The poor performance might be explained by the fact that there were only a low number of these scenarios, discouraging participants from spending much effort on focusing on the faces. Misunderstanding of the task may have also contributed to the poor accuracy. In these scenarios, the identity of the third face was different to the preceding faces to help participants identify when they would be required to make a judgment about the affective content of the faces (as opposed to about the scenarios). However, despite clear instructions, some participants may have thought they were making judgments about the identity of the third face and not about the valence of the face. Consistent with this, the majority of errors were to respond that the faces were of different valence when they were the same. Alternatively, even having understood the instructions correctly, the change in identity may have made it difficult for participants to compare facial expressions, with the more salient change in identity resulting in the large number of 'different' judgments.

However, even when only those participants who appeared to have assessed the affective meaning of the faces were considered, incongruent emotional faces did not have the same effect as another person's contrasting fortune in the scenarios, with the findings of Experiment 4 largely mirroring those observed in Experiment 3. Participants made less good responses and were slower to respond to good fortune when another person had bad fortune in the scenario, while responses to bad fortune were unaffected by another person's good fortune in the scenario. In contrast, more (not less) responses in line with participants' own fortune (at least for participants showing greater awareness of the emotional faces) and faster responses were observed when a conflicting emotional face was presented. This may be explained by the different response options used in the two conflict conditions; being easier to discriminate between feeling good or bad (conflict condition) than between good/bad and neutral (no conflict condition). However, it was only those participants who showed greater awareness of the emotional faces who showed an effect of conflicting positive emotional faces on responses to bad fortune, which might tentatively suggest that conflicting emotional faces did affect affective judgments (albeit only slightly and in a different way to another person's contrasting fortune in the scenario).

GENERAL DISCUSSION

When making everyday decisions and when experiencing emotional events we are often surrounded by others who may send out subtle signals that influence our emotional reactions and our behaviour (Fischer et al., 2003; Gump & Kulik, 1997; Parkinson & Simons, 2009). This may occur outside of our awareness and control, but may also occur because we look to others as a source of information in evaluating a situation and our response to that situation (Neumann & Stack, 2000; Parkinson & Simons, 2009). In this chapter, two experiments compared the effects of another person's concurrent emotional experience ('another's fortune condition) with the effects of isolated emotional faces ('emotional face' condition) on affective judgments made about emotional situations. Replicating the findings from Experiment 2, in both experiments another person's contrasting fortune in the scenario had a large, but asymmetrical effect on affective judgments. Participants made slower and less positive responses to scenarios in which they received good fortune when another person had bad fortune. In contrast, responses to scenarios in which participants had bad fortune were largely unaffected by another person's concurrent good fortune. Low-level explanations might suggest that information about the other person's fortune primed emotional representations, producing semantic-level interference or response competition (Preston & Stansfield, 2008). The finding that negative information produced greater interference is compatible with a general negativity bias (Baumeister et al., 2001). Such a low-level account might also predict that other sources of conflicting emotion, such as emotional faces, may also interfere in affective judgments even when they occur outside of, and have no relevance to, the situation. The two experiments reported here found little evidence for this, finding that conflicting emotional faces presented during scenario processing had little effect on affective judgments of positive or negative situations, and if anything had a tendency to facilitate rather than to interfere in responses. An alternative and higher level explanation of the effect of another person's bad fortune on affective judgments might be that the other person's emotional experiences altered how participants appraised the situations. The (lack of) effect of emotional faces on affective judgments is first discussed, considering what this may say about the processes underlying the modulation of affective judgments by another person's fortune, before briefly considering higher level accounts and limitations of the current experiments.

In view of previous findings that have observed effects of emotional faces on affective judgments it is interesting to consider why such effects were not observed here. Emotional faces have been found to bias unrelated affective judgments (Murphy & Zajonc, 1993; Sweeny et al., 2009) and to interfere in the identification of incongruent emotional stimuli when presented in conjunction with that emotional stimulus (Preston & Stansfield, 2008; Sternberg et al., 1998). In the current studies, participants, if anything, had a tendency to be faster, not slower, when conflicting emotional faces were present and participants made more, not less, responses in line with their own fortune when a conflicting emotional face was presented late in the scenario (Experiment 3) and when they displayed greater awareness of the emotional faces (Experiment 4). These discrepancies with previous studies may be explained by differences in the presentation of the emotional faces and the nature of the target stimuli. Firstly, effects of affective priming have sometimes only been observed when participants are not consciously aware of the prime and not when the prime is presented for durations that allow conscious recognition (Stapel & Koomen, 2005; Stapel et al., 2002). This is thought to occur because at longer durations, as they become aware of the prime, participants are able to label the source of information activated by the prime so that it is less likely to contaminate their judgments (Murphy & Zajonc, 1993; Stapel et al., 2002; Tamietto et al., 2009). In the current experiments, emotional faces were presented for durations far longer that those found to be necessary for conscious recognition, which may have acted against affective priming effects. It is important to note that this was also the case with information about another person's emotional fortune, which may argue against an affective priming account of the effect of another person's bad fortune on affective judgments.

Secondly, effects of affective priming or emotional contagion have been mostly reported when there is little competing emotional information (e.g. when the target stimulus or situation is affectively ambiguous). For instance, affective priming has been found to influence judgments of affectively neutral Chinese symbols (Murphy & Zajonc, 1993) and emotional contagion has been reported when participants are placed in novel situations (Gump & Kulik, 1997). Affective priming from emotional faces may not be able to compete with activation of emotional representations from unambiguous affective targets. In support of this, there was some evidence to suggest that emotional faces influenced responses to neutral events; less neutral responses were made to neutral scenarios when positive emotional faces were presented than when negative emotional faces were presented and when emotional faces were presented later rather than earlier in the scenario. In the absence of strong emotion representations activated by the scenario, (positive) emotional faces may have influenced affective judgments (Bower, 1981). This might also argue against a purely affective priming account of another person's bad fortune on affective judgments, which produced large interference on affective judgments relating to even unambiguously positive scenarios.

Thirdly, studies that have observed effects of incongruent emotional faces on emotional stimuli have presented the face and the target simultaneously as a single object (i.e. faces overlaid by a word), and with both present at response (Haas, Omura, Constable, & Canli, 2006; Preston & Stansfield, 2008; Stenberg et al., 1998). Presenting conflicting emotional stimuli (and the response) sequentially, as was the case in both the 'emotional face' and the 'another's fortune' conditions in the current experiments, may have reduced semantic-level interference and response competition. However, while emotional faces did not interfere in affective judgments about emotional situations when presented in this way, information about another person's bad fortune did, which might indicate that additional processes may contribute to the modulatory effect of another person's fortune on judgments.

Not only did conflicting emotional faces have minimal effects on affective judgments, but the little effects that were observed were in the opposite direction to the effect of another person's fortune in the situation. For instance, another person's bad fortune had a larger impact on responses to neutral scenarios than another person's good fortune, but positive emotional faces appeared to influence responses to neutral scenarios more than negative emotional faces. Although negative faces appear to attract more attention, being detected faster in visual search tasks (Hansen & Hansen, 1988), it has been found that positive faces are recognised quicker (Lëppanen & Hietanen, 2004), which may help explain the greater effect of positive faces on judgments. Alternatively, it is possible that the positive expressions in the photographs were expressed more strongly than the negative expressions, resulting in greater effects on judgments (Wild et al., 2001). It has also been suggested that individuals typically have a positively biased baseline affect and a lower threshold for making positive judgments (Diener & Diener, 1996; Matlin & Gawron, 1979; Taylor, 1991), which may offer a third explanation of the greater effect of positive faces. The activation necessary to result in a positive judgment may be less than that required to make a negative judgment, such that even weak activation from irrelevant positive faces may be sufficient to meet the threshold for a positive response. In contrast, the finding that another person's bad fortune influenced neutral judgments more than another person's good fortunes goes against a lower positive threshold and might suggest that processes other than affective priming may be involved.

In addition, rather than interfere in positive and negative affective judgments, like another person's fortune, conflicting emotional faces, if anything, appeared to facilitate responses. This is consistent with studies that have observed that, under some conditions, exposure to emotional faces can result in contrastive responses (Epstude & Mussweiler, 2009; Stapel et al., 2002). For example, Stapel et al. (2002) found that at extremely short prime durations a neutral target face was evaluated more positively when preceded by a happy face than when preceded by a sad face, but found that this pattern was reversed at slightly longer durations, with the target being rated more positively following negative primes. In another study, Epstude and Mussweiler (2009) found that participants cognitively primed to search for dissimilarities displayed contrastive effects on mood after viewing sets of emotional images, reporting better mood following negative scenes than following positive scenes. Contrastive effects are thought to occur because the prime triggers a comparison process between the target and the cue (Stapel et al., 2002). This may explain why responses tended to be faster and more in line with the individual's own fortune when a conflicting emotional face was present (in participants with greater awareness of the emotional faces (Experiment 4) or when negative emotional faces were presented late in the scenario (Experiment 3)). In affectively ambiguous (neutral) situations, emotional faces may have acted as a source of information in judgments, resulting in assimilative responses (Bower, 1981; Murphy & Zajonc, 1993). In contrast, in emotional situations, conflicting emotional faces may have provided a standard from which participants compared their emotional situation (Festinger, 1954), which may have facilitated affective judgments in line with their own fortune. In fact, it is possible that contrastive effects of conflicting emotional faces may have been underestimated in the current experiments, with responses to good and bad fortune scenarios without a conflicting emotional face being close to ceiling.

The fact that another person's fortune did not facilitate responses, and even interfered in judgments, indicates that it did not just serve as comparison standard from which to make affective judgments; higher level processes may also be important in explaining the effects of another person's fortune. The misfortunes of others frequently elicit empathy or concern which may have affected how participants appraised and evaluated the situations in which another person concurrently had bad fortune. In other words, participants may have modulated how they would feel in emotional situations in empathy for the other's bad fortune. Isolated emotional faces, presented as irrelevant to an emotional situation, may not have the same capacity to elicit such empathy, explaining why they did not have the same effect (see below). It also has been suggested that individuals may be motivated to minimise the impact of negative emotions where possible (Taylor, 1991), which may be easier to do when the negative emotion arises from an isolated and irrelevant emotional face. However, unlike another person's bad fortune, another person's good fortune did not modulate responses to bad fortune. This may also be explained in terms of higher level, or appraisal, processes. While another person's good fortune may result in pleasure for that person, it may also evoke envy, especially when one's own fortune pales in comparison (Smith, 2000; Smith & Kim, 2007; Takahashi et al., 2009). The misery of envy may be such that it cancels out positive empathy, and may help explain why the other person's good fortune had little apparent effect on responses to bad fortune.

In summary, not only did another person's concurrent emotional experience modulate affective judgments of situations to a significantly larger degree than emotional faces occurring outside of those emotional situations, but the effects of the two sources of emotion were often in different directions. Although low-level processes (e.g. semantic-level interference and response competition) may play a role in explaining the effect of another person's fortune on participants' affective judgments (observed in Experiments 2-4), it is suggested that the other person's fortune may have also affected how participants appraised the emotional situations. Descriptions of the other person's fortune may have formed part of the social context in which participants evaluated the events, affecting their judgments via appraisals, including those relating to social comparisons and empathy. In contrast, emotional faces presented during the scenarios, being recognise as irrelevant, may not have influenced appraisals of the situations, and as a result may explain why they had little influence on affective judgments.

However, firm conclusions may be limited for a number of reasons. Firstly, it is possible that information about the other person's fortune, because it required more processing, may have more strongly activated emotion representations than emotional faces, which were presented as part of a secondary task and as irrelevant to the situations. This may help explain why this information interfered in affective judgments, while the emotional faces did not, without assuming that information about the other person's fortune influenced how participants appraised the situations. However, the magnitude of the effect of the other person's bad fortune on responses (and not just on response times), its effect on responses to situations in which participants themselves had good fortune (and not just when they had neutral fortune), and its effect on responses even when that person's bad fortune was described early in the scenario and some time before response (see Experiment 2 in Chapter 3), might suggest that low-level accounts may be insufficient to explain the effects of the other person's fortune on affective judgments.

Secondly, while emotional faces had little effect on affective judgments in the current study, it is possible that under different conditions they might. For instance, one reason why another person's fortunes, but not emotional faces, influenced judgments may be because the information about the other person's situation affords greater elaboration and richer representations of the other person's emotional state than emotional faces. Circumstances that encourage individuals to understand how the person in the photograph might be feeling and why may lead to effects of emotional faces on affective judgments. This may be true of real life situations, where seeing someone looking sad may prompt us to consider the cause of their distress. In support of this, Neumann and Stack (2000) found that instructions to imagine the feelings of a person making a speech of neutral content but spoken in a happy or sad tone increased the emotional response of participants to the speech.

In addition, having an affective-link with the person and being familiar with the person are believed to increase empathy (de Vignemont & Singer, 2006) and, despite being an imagined other, imagining situations involving another person may have created a sense of a relationship and familiarity with that person that promoted empathy. It is unlikely that the emotional faces created the same perception of a relationship (especially in Experiment 4, where different actors were used), possibly helping to explain why negative emotional faces elicited little empathy (unlike another person's bad fortune in the scenario). In support of this, in Experiment 3 (where the same actor was used for all scenarios), participants reported being more similar to and liking the other in the scenario more than the other in the emotional face condition. Observing another person's emotional state may influence affective responses more when individuals perceive a relationship or familiarity with that person (de Vignemont & Singer, 2006; Preston & de Waal., 2002).

It is also possible that the paradigm (and the forced choice response) was not sensitive enough to detect subtle effects of the emotional faces. One solution to this might be to use a rating response, which would also be able to detangle whether the tendency for participants to produce faster responses with conflicting emotional faces was a result of the emotional face or the different response options used in the conflict and no conflict conditions.

A final limitation of the current studies is that there is no direct evidence that information about another person's emotion contributed to affective judgments via their effects on social appraisals. Stronger evidence for this would be if the same information about the other person's fortune resulted in different effects on affective judgments depending on the context (Chapter 5 and 6). Similarly, if emotional faces that are perceived to be part of the social context influence affective judgments in conditions where emotional faces presented as unrelated to the situation do not, it may provide stronger support for appraisal-based transfer of affect. In conclusion, priming of emotion representations as a result of processing the other person's emotional experience may contribute to participants' affective judgments, particularly in response to neutral events where they may serve as a source of information in the absence of emotional information from participants' own neutral fortune. However, it is suggested that the modulation of emotional judgments by another person's concurrent fortune (observed in Experiments 2, 3 and 4) is not solely the result of contagion, affective priming or response competition, but may occur at least in part due to effects of the other person's emotional experience on appraisals, such as those arising from social comparisons and empathy.

The role of cognitive appraisals is considered further in Chapter 6, but Chapter 5 now returns to an observation made in Experiment 1. In this study, individuals made less positive responses to positive events when another person simultaneously had bad fortune (like Experiments 2, 3 and 4), both when making self predictions and when making other predictions. If it is assumed that this occurred because participants modulated their emotional predictions in empathy for the other person's bad fortune, this might suggest that individuals predict empathy in others. However, there was also a tendency for participants to make slightly more positive responses to positive events when a second person had bad fortune (less empathic modulation) when making other predictions that when making self predictions. Due to the low number of critical trials, it was difficult to make any strong conclusions on the basis of this observation, but the pattern is consistent with the idea that individuals may anticipate less empathy in others. This was explored further in three experiments reported in the next chapter.

Chapter 5

Predicting Empathy in Self and Others

'You and Lucy have coffee with some friends. Your friends are going to see a band play live. They have a spare ticket and offer it to Lucy. It is Lucy's favourite band. It is also your favourite band and so you ring the box office to try and get a ticket. The tickets are sold out. You can't see the band in concert.' How do you think Lucy feels? Would you predict that she would feel happy in anticipation of seeing her favourite band or would you predict that she would feel bad for you? The results of Experiments 2, 3 and 4 are consistent with anticipated empathy in self judgments, with individuals reporting less pleasure at receiving good fortune when another person had bad fortune; this chapter reports on three studies investigating whether individuals predict empathy in *others*. People often experience different emotional fortunes to other people around them, and may be affected by the emotional states of those others and therefore predicting a person's emotional response to an event may require taking into account the emotional experiences of other people present. Whether we anticipate empathy in others, like in ourselves, is also interesting because it has relevance to how we think of the thoughts, feelings and intentions of self and others more generally.

A common idea of how we understand others is that we use ourselves as a basis for our predictions about other people's thoughts, intentions and feelings (Decety, 2005). According to this view, self predictions serve as default and then depending on motivation, cognitive resources and the extent to which the other person is perceived as similar to ourselves we may adjust these predictions to infer the mental states of others (Epley et al., 2004a, 2004b; Gilovich et al., 2000; Nickerson, 1999). Consistent with this account, individuals often make egocentric errors in their judgments about others, failing to adequately take into account differences between themselves and others (Royzman, Cassidy, & Baron, 2003). Individuals judge that others will make the same decisions, and respond and behave in the same way that they themselves would (false consensus effect; Monin & Norton, 2003; Ross, Greene, & House, 1977) and have a tendency to be biased by their own privileged knowledge when judging what others know (curse of knowledge; Epley et al., 2004a; Royzman et al., 2003). This view has also drawn support from neuroimaging work, which has shown large overlap in the neural networks involved in thinking about self and others (e.g. Mitchell et al., 2005; Ruby & Decety, 2004; Vogeley et al., 2001). If we infer the mental states of others based on how we ourselves would react, our emotional judgments for others would be expected to be similar to our emotional judgments for self. Compatible with this, Pollmann and Finkenauer (2008) found that affective forecasts for others were comparable to affective forecasts for self, both suffering from an impact bias (overestimating the bearing an emotional event would have on emotional experience). Thus, if we use ourselves as a model to understand other people's emotions (or if we use the same intuitive theories when making self and other judgments; Siemer & Reisenzein, 2007) individuals should make the same emotional predictions for other as for self; predicting that another person would also feel empathy for the concurrent emotional experiences of others present.

However, a second line of research has also highlighted differences in how we think of ourselves and others (Pronin, 2008), which may result in different emotional predictions for self and others. Individuals evaluate themselves more positively on most traits than an average other (the better-than-average effect, Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Leary, 2006) and assess their own perceptions as being more accurate than other people's perceptions (Pronin, Ross, & Gilovich, 2004). One view is that these effects arise out of a need to maintain a positive self image (Alicke et., 1995; Leary, 2006), though it has also been suggested that limits in information processing or the use of different sources of information may account for biases in comparative judgments (Chambers & Windschitl, 2004; Pronin et al., 2004). Disparities in the amount, quality or accessibility of self knowledge compared to knowledge about others may lead to different self and other predictions (Chambers & Windschitl, 2004; Pronin, 2008). Individuals rate their own emotions and responses more intensely than that of others, for example, reporting that they care more about their community (Monin & Norton, 2003), that they like pleasant music more than their peers (Chambers & Suls, 2007), and that others would be less affected by embarrassment than themselves (Sabini, Cosmos, Siepmann, & Stein, 1999; Van Boven et al., 2005). Moreover, and particularly relevant to this chapter, in a study by McFarland and Miller (1990) participants reported that they would be more uncomfortable at having to watch someone receiving medical treatment for painful wounds than the average person, suggesting that they may perceive their own empathy to be greater than that of others. It has been argued that individuals may underestimate the feelings of others because, whereas we have direct access to our own feelings, we are reliant on external cues to other people's emotions, which may fail to represent the extent of their subjective emotional experience (Chambers & Suls, 2007; Pollmann & Finkenauer, 2008; Pronin, 2008).

Findings from the perspective-taking and empathy literature might also predict differences in emotional responses when making self and other predictions. Studies asking participants to either imagine themselves or another person in emotional situations have found that participants report more intense feelings and more strongly recruit brain regions involved in affective processing when imagining situations from a first-person perspective (Jackson et al., 2006; Lamm et al., 2007). Further, some studies have actually encouraged individuals to think about emotional situations or memories from a third-person or observer perspective as a strategy to down-regulate the intensity of the emotions felt (Holmes et al., 2008; Ochsner et al. 2004b). Adopting a third-person perspective has proven successful in reducing the experience of emotions and is thought to promote a more detached approach to viewing emotional situations. Similarly, maintaining an objective perspective when listening to a person describing a distressing situation may produce less empathic concern than when imagining how the person feels (Coke et al., 1978). Collectively, these findings might suggest that individuals may be less affected by the concurrent fortunes of others when adopting a third-person perspective, and may therefore anticipate less empathy when making other predictions. Thus, to the extent that we judge ourselves to be more perceptive and empathic than others (the better-than-average effect), that we underestimate the strength of other people's empathic feelings (emotional intensity bias), or that taking another person's perspective encourages a more objective approach to thinking about emotional situations, differences in self and other emotional predictions may be observed.

One final set of experiments may offer insight into whether individuals anticipate empathy in others (Epley, Gilovich, & Savitsky, 2002). In four studies, participants were asked to anticipate how an observer would judge them in a potentially embarrassing situation, such as performing poorly on a quiz. The experience of the observer was manipulated so that they would be in a better or worse position to empathise with the participant's (the solver's) situation. For example, in one study, the observer was either given a copy of the quiz with the answers or a copy of the questions without the answers. This was done in the presence of the solver so that the solver was aware of whether the observer knew the answers to the quiz or not. After performing poorly on the quiz (designed to be particularly difficult), solvers were asked to judge how the observer would rate their performance. Despite being aware of whether the observer knew or did not know the answers to the quiz, solvers failed to take this into account when anticipating how the observer would rate their poor performance, judging naive observers to rate them as harshly as knowledgeable observers. In actual fact, observers judged solvers less harshly for performing poorly when they did not know the answers to the quiz themselves. Thus, solvers failed to anticipate the empathy that observers may feel when they considered how the observer would rate their embarrassing performance. However, in another study, it was found that participants were able to take into account an observer's empathy if first asked to rate the ability of the observer to empathise with them. The authors concluded that individuals are able to anticipate empathy in others, but often overlook it in their online judgements (Epley et al., 2002). While this study did not allow direct comparisons of empathy in self and other judgments and within the same participants, following from this study, we might expect that individuals may fail to predict or at least have a tendency to underestimate empathy in others. The study by McFarland and Miller (1990) described above also strongly indicates that individuals may not anticipate as much empathy in others as they do in themselves. However, in this study participants were asked to judge both how they and how the average person would feel in response to the suffering of another person in the same questionnaire and this may have encouraged direct comparisons between themselves and others. Such comparisons may be particularly susceptible to motivational biases that lead people to judge themselves to be better than others (Leary, 2006), encouraging participants to judge their own empathy to be greater than that of others.

In the three studies reported here we examined the extent to which individuals anticipate their own and other people's empathy by looking at the degree to which they adjusted their predictions of how they or someone else would feel in response to emotional events for the emotional experiences of a second person present in the situation. In Experiments 2-4, described in previous chapters, participants were presented with a series of scenarios in which they received either good or bad fortune while a second person simultaneously experienced a neutral event or an event of contrasting fortune. Using a rating (Experiment 2) or a forced choice response (Experiments 3 & 4), individuals judged that they themselves would feel less good at receiving good fortune when another person concurrently experienced bad fortune, consistent with anticipated empathy for that other's bad fortune. In contrast, individuals judged that they would feel just as bad at receiving bad fortune when another person simultaneously had good fortune, seeming not to predict any positive empathy for the other's good fortune. The studies reported here used the same paradigm as Experiments 2-4, but participants switched between judging how they would feel and how someone else would feel in Experiment 5 and 6, and only judged how someone else would feel in Experiment 7. Self and other judgments were then compared to examine (a) whether participants generally made similar emotional predictions for others as they did for themselves (anticipating negative but not positive empathy) and (b) whether predicted empathy (sensitivity to the emotional experiences of others) observed in other judgments differed from that in self judgments. Importantly, even when participants made both self and other judgments (Experiment 5 & 6) they made these following different situations, preventing direct comparisons between their own and other people's empathy. This may therefore provide a stronger test of whether individuals underestimate empathy in others.

In addition, as a general point, these studies were able to test whether emotional predictions in the current paradigm can be modulated by perspective-taking instructions (imagine self vs. imagine other). Such modulation would offer support for the involvement of higher level processes (compared to low-level processes, such as affective priming) in the effect of another person's fortune on affective judgments observed in Experiments 1-4.

Experiment 5

METHOD

Design

A 2x2x2 within subject design was used to look at the extent to which individuals adjusted emotional predictions for the emotional experience of a second person when making self and other judgments. The factors were the perspective from which the emotion was judged (self/other), the fortune of the target perspective (good/bad) and the conflict between the fortunes of self and other (no conflict/conflict). In addition, a set of scenarios were included in which the target perspective was a neutral observer (having neutral fortune) to the good or bad fortune of the second person in order to encourage use of the full range of the rating scale in making emotion judgments. Average ratings of how the target would feel and response times were recorded as dependent variables.

Participants

24 participants (18 female), aged between 18 and 20 years (M = 19.13 years, SD = 0.85), took part in Experiment 5. Participants were all native English speakers and were recruited from the student population at the University of Nottingham, receiving a small inconvenience allowance.

Stimuli

Participants were presented with a set of 128 scenarios, taken from the pool of scenarios used in Experiments 2-4, but in Experiment 5 the target could either be self or other. Scenarios were, again, presented as episodes within a larger story, describing daily events happening to two individuals over a period of a few years. As in the previous experiments, the scenarios were written in the second ('You') and third person pronouns ('S/he'), to reflect the perspective of the participant and that of another person. The order in which the two perspectives (self or other) were described was counterbalanced across scenarios. In each scenario, the target protagonist (self or other) could receive either good fortune or bad fortune, while the second protagonist (other or self) simultaneously experienced a neutral event (no conflict) or an event of contrasting fortune (conflict). Different versions of the same scenarios were again used in each of the 8 conditions (see Table 5.1), meaning that scenarios presented across the different conditions were closely matched. A version of each scenario was allocated to a different experimental list and participants were then randomly allocated to an experimental list, so that each participant saw each scenario only once. Each experimental list contained an equal number of scenarios from each experimental condition (16 scenarios per condition[21]; see Table 5.1). An additional 40 scenarios were included in which the target perspective (self or other) experienced a neutral event while the other protagonist experienced good or bad fortune. Like for the main scenarios, different versions of the 40 scenarios were presented in each of the 4 neutral conditions, with each version

[21] The incorrect versions of two scenarios were included in two experimental lists, which meant some participants had a slightly unbalanced number of scenarios for each condition, receiving 17 of one condition and 15 of another.

allocated to a different experimental list. Each experimental list contained an equal number (n=10) of the four possible types of neutral scenarios (see Table 5.1). Stories were split into 8 blocks of 21 scenarios, containing 2 scenarios from each of the 8 main conditions and 5 neutral scenarios (totalling 168 scenarios). Participants were also presented with a practice block of 12 scenarios (including 4 neutral scenarios). Examples of scenarios are provided in the appendix.

Table 5.1

Number of Scenarios Presented to Each Participant in Each Condition in Experiments 5 & 6.

Fortune of Self	Fortune of Other	Perspective Cued	No. of Scenarios
Good	Neutral	Self	16
Good	Bad	Self	16
Bad	Neutral	Self	16
Bad	Good	Self	16
Neutral	Good	Other	16
Bad	Good	Other	16
Neutral	Bad	Other	16
Fortune	Bad	Other	16
Neutral	Good	Self	10
Neutral	Bad	Self	10
Good	Neutral	Other	10
Bad	Neutral	Other	10

Procedure

The procedure was essentially the same as Experiment 2, with two main exceptions; firstly, in half of the scenarios participants judged how another person would feel, rather than only judging how they would feel, and secondly participants were presented with a photograph of themselves or that of another person to cue them to which perspective to take. Participants were introduced to the 'other' protagonist (gender congruent with the participant) using a photograph and were asked to imagine that 'John' or 'Kate' was a close friend of theirs.

They were asked to read and imagine themselves in the scenarios and, depending on the cue, to judge how they or the other person would most feel. The experiment was programmed using E-Prime (Schneider et al., 2002). Each trial began with a fixation point presented for 500ms and scenarios were then presented across 3 displays: part 1 providing the context of the scenario and parts 2 and 3 describing the two perspectives (Figure 5.1a). Participants were able to self-pace their reading of the events and, after indicating that they had read part 3 of the scenario, were then cued with a photograph of them self or that of John/Kate to judge how they or John/Kate would feel. Participants made their judgments on a 7-point scale from Bad (1) to Good (7), using the computer keyboard to respond, and were encouraged to respond quickly. Participants were given a maximum limit of 15000ms to respond before the next scenario.

Following the task, participants rated how much they liked the other, how similar they thought they were to the other and how vividly they felt they could imagine the scenarios on a 7-point scale, with higher ratings indicating high agreement with the item.

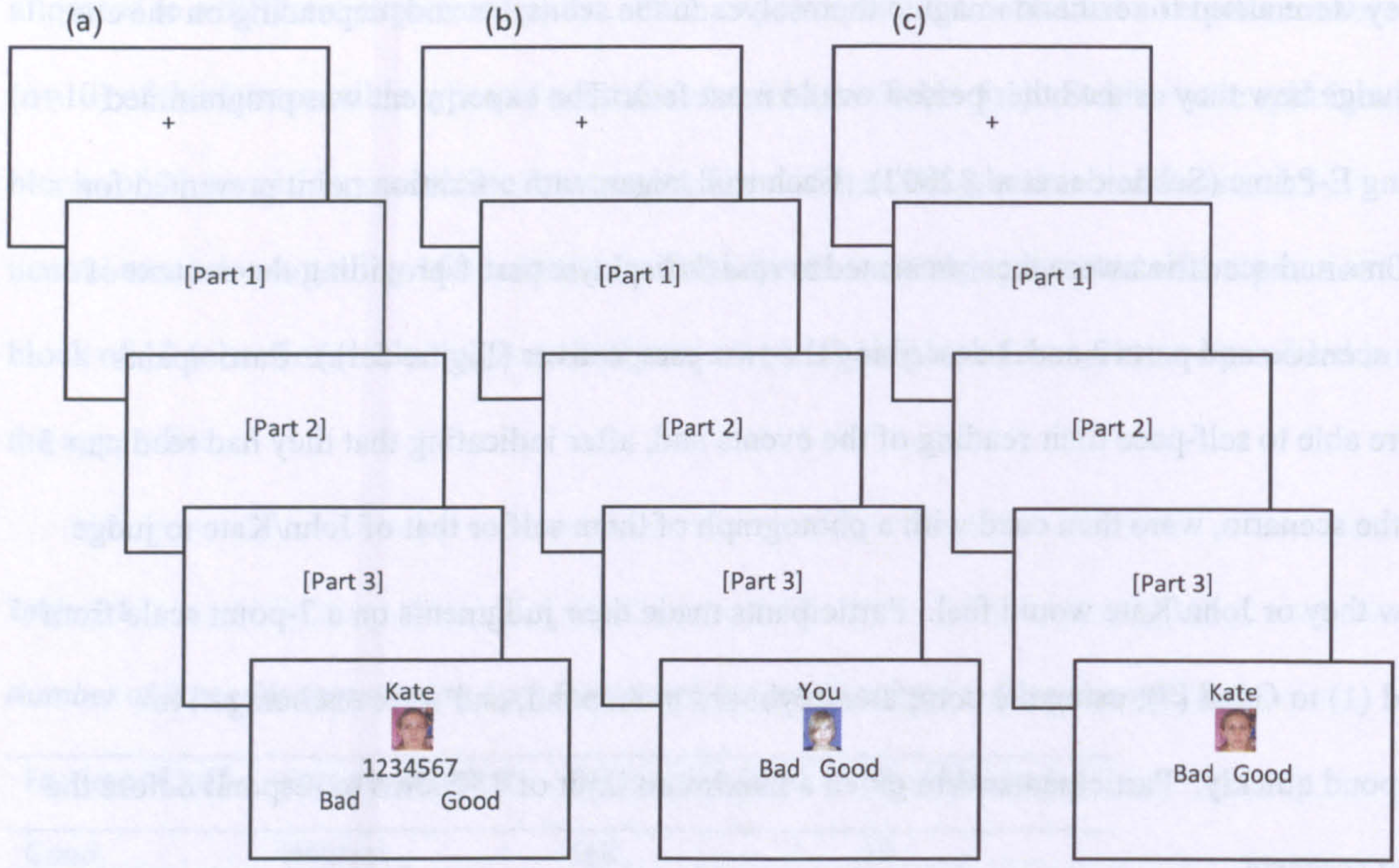


Figure 5.1. Schematic representation of the procedure used in Experiment 5 (a), Experiment 6 (b) and Experiment 7 (c). Participants were able to self-pace their reading of the scenario and were then presented with the perspective cue and their response options.

RESULTS

Exit Questionnaire: Impressions of the Other and reported ability to imagine the scenarios

Generally, participants reported liking the other in the scenario ($M = 5.17$, $SD = 1.05$). Perceived similarity ($M = 4.38$, $SD = 1.21$) was moderate and the ability to imagine the scenarios was quite high ($M = 5.25$, $SD = 0.79$). These values were comparable to Experiment 2 (reported in Chapter 3), indicating that perspective switching did not notably affect perception of the other or the ability to imagine the scenarios.

Responses to good and bad fortune

Emotional Ratings (see Table 5.2)

If participants were sensitive to the bad and good fortunes of a second person when making self and other judgments, it was expected that responses to good fortune would be lower (more negative) when another person concurrently had bad fortune (with conflict), but that responses to bad fortune would be higher (more positive) when another person concurrently had good fortune (with conflict). In order to examine this, two repeated measure two-way ANOVAs were performed on rating responses, with the factors perspective (self/other) and conflict (no conflict/conflict).[22]

The analysis of responses to bad fortune revealed no effect of perspective ($F(1,23) < 1$, $\eta_p^2 = 0.01$), no effect of conflict ($F(1,23) = 3.68$, $p = 0.07$, $\eta_p^2 = 0.14$) and no interaction between perspective and conflict ($F(1,23) = 2.34$, $p = 0.14$, $\eta_p^2 = 0.09$). The analysis of responses to good fortune revealed no effect of perspective ($F(1,23) = 1.55$, $p = 0.23$, $\eta_p^2 = 0.06$), but an effect of conflict ($F(1,23) = 149.85$, $p < 0.001$, $\eta_p^2 = 0.87$). Ratings were lower (less positive) in response to good fortune when the second person simultaneously experienced bad fortune ($M = 4.70$) compared to when the second person experienced neutral fortune ($M = 5.80$). However, this was the same for both self ($M_{Conflict} = 4.59$ vs. $M_{No\ Conflict} = 5.78$) and other judgments ($M_{Conflict} = 4.81$ vs. $M_{No\ Conflict} = 5.82$); there was no interaction between perspective and conflict ($F(1,23) = 1.63$, $p = 0.22$, $\eta_p^2 = 0.07$).

[22] Separate ANOVAs were performed on good fortune and bad fortune scenarios rather than conducting a three-way analysis including fortune as a factor, because this allowed testing of the study predictions without resulting in effects and interactions with conflict that would be difficult to interpret due to the different expected directions of the effect of conflict on ratings for the good and bad fortune conditions.

Table 5.2

Average Ratings Given Following Scenarios of Good and Bad Fortune, With and Without Conflict, and Following Neutral Fortune when the Second Person had Good or Bad Fortune, When Making Self and Other Judgments in Experiment 5. Standard Deviation in Parentheses.

Fortune	Conflict	Self	Other
Bad	No Conflict	2.49 (0.62)	2.37 (0.42)
	Conflict	2.51 (0.50)	2.55 (0.55)
Good	No Conflict	5.78 (0.43)	5.82 (0.49)
	Conflict	4.59 (0.58)	4.81 (0.72)
Neutral	Good fortune	4.70 (0.48)	4.56 (0.57)
Neutral	Bad fortune	3.55 (0.45)	3.74 (0.49)

Note. Responses were made on a 7-point scale from Bad (1) to Good (7).

Response Times (see Figure 5.2a)

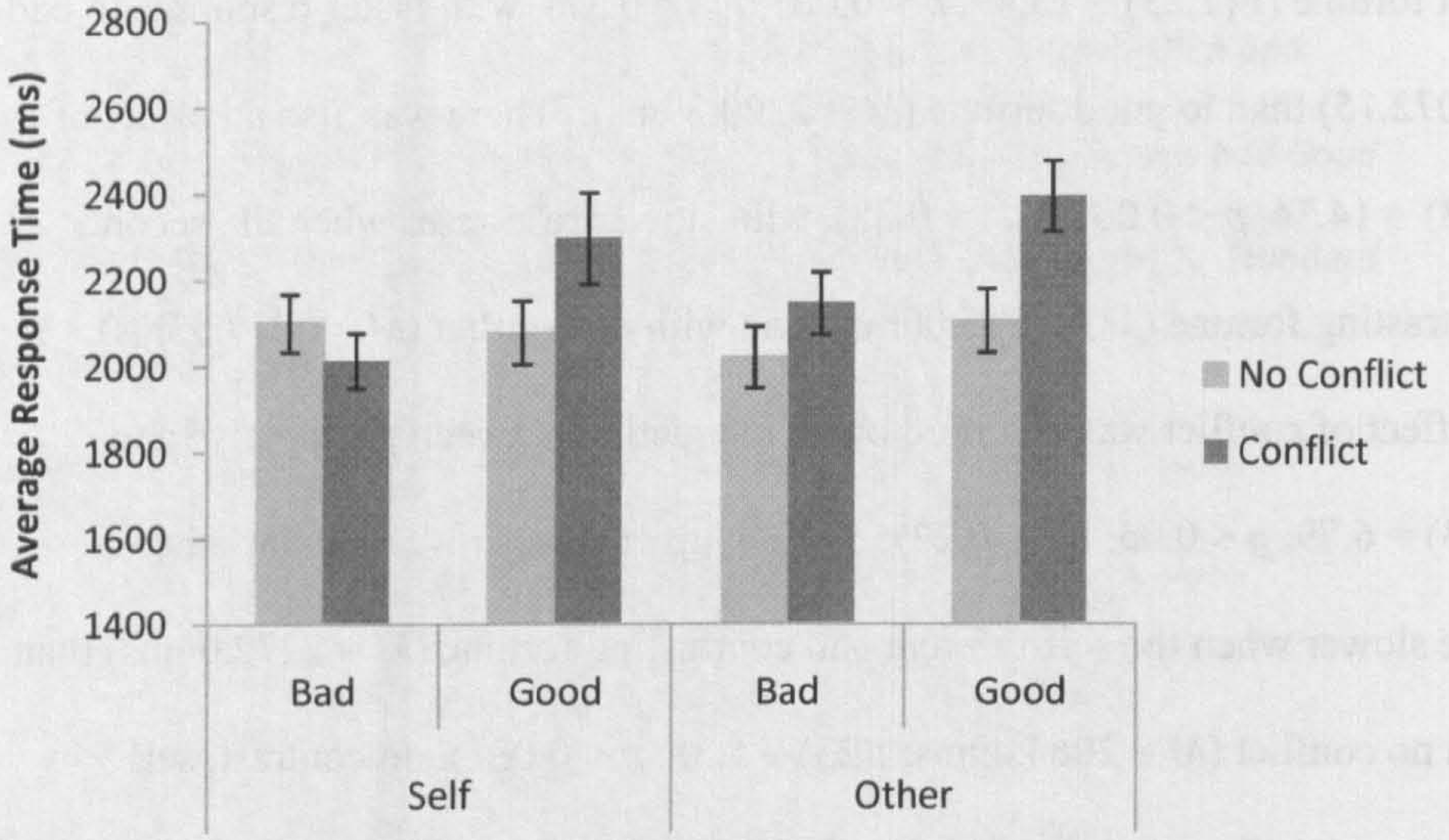
No data points were removed as a result of no response. An arbitrary cut of 6000ms was used to remove extreme outliers[23]. This resulted in the removal of between 0.01% and 2.34% of data points across conditions. Response times were mildly positively skewed, with skewness and kurtosis values of 1.24 and 1.71. Analyses was repeated on log transformed response times to check reliability[24], but as data transformation is considered controversial and as the two analyses produced very similar results, analyses of the untransformed data is reported (Aron & Aron, 1999). A 2x2 x2 repeated measure ANOVA, with the factors perspective (self/other), fortune (good/bad) and conflict (no conflict/ conflict) was performed on response times.

[23] The average response times of all but two participants (participant 1: M = 3002.17ms, SD = 2092.31; and participant 2: M = 3219.60, SD = 1472.09) were within 2 standard deviations of this value.
[24] Log transforming the data reduced skewness to 0.53 and kurtosis to 0.80.

There was no significant effect of perspective ($F(1,23) = 1.77, p = 0.20, \eta_p^2 = 0.07$), but there was an effect of fortune ($F(1,23) = 13.49, p < 0.001, \eta_p^2 = 0.37$), with faster responses to bad fortune ($M = 2072.15$) than to good fortune ($M = 2220.37$ms). There was also an effect of conflict ($F(1,23) = 14.34, p < 0.001, \eta_p^2 = 0.38$), with slower responses when the second person had contrasting fortune ($M = 2215.00$ms) than with no conflict ($M = 2077.53$ms). However, the effect of conflict was qualified by an interaction between perspective and conflict ($F(1,23) = 6.79, p < 0.05, \eta_p^2 = 0.23$). Follow-up analyses revealed that other judgments were slower when the self-referent had contrasting fortune ($M = 2272.06$ms) than when there was no conflict ($M = 2064.49$ms; $t(23) = 5.38, p < 0.001$). In contrast, self judgments were not significantly slower when the other referent had contrasting fortune ($M = 2158.60$ms) than when there was no conflict ($M = 2090.83$ms; $t(23) = 1.32, p = 0.20$). In addition, self judgments ($M = 2158.60$ms) were made faster than other judgments with conflict ($M = 2272.06$ms; $t(23) = 2.14, p < 0.05$), but self judgments ($M = 2090.83$ms) were not faster than other judgments when there was no conflict ($M = 2064.49$ms; $t(23) = 0.90, p = 0.38$).

Finally, there was also a significant interaction between fortune and conflict ($F(1,23) = 23.01, p < 0.001, \eta_p^2 = 0.50$). Further analyses revealed that a second person's bad fortune delayed responses to good fortune ($M = 2347.17$ms) compared to when there was no conflict ($M = 2092.99$ms; $t(23) = 5.27, p < 0.001$), but that a second person's good fortune did not delay responses to bad fortune ($M = 2081.42$ms) compared to when there was no conflict ($M = 2062.51$ms; $t(23) = 0.49, p = 0.63$). The three-way interaction of perspective, fortune and conflict did not reach significance ($F(1,23) = 2.19, p = 0.15, \eta_p^2 = 0.09$).

(a)



(b)

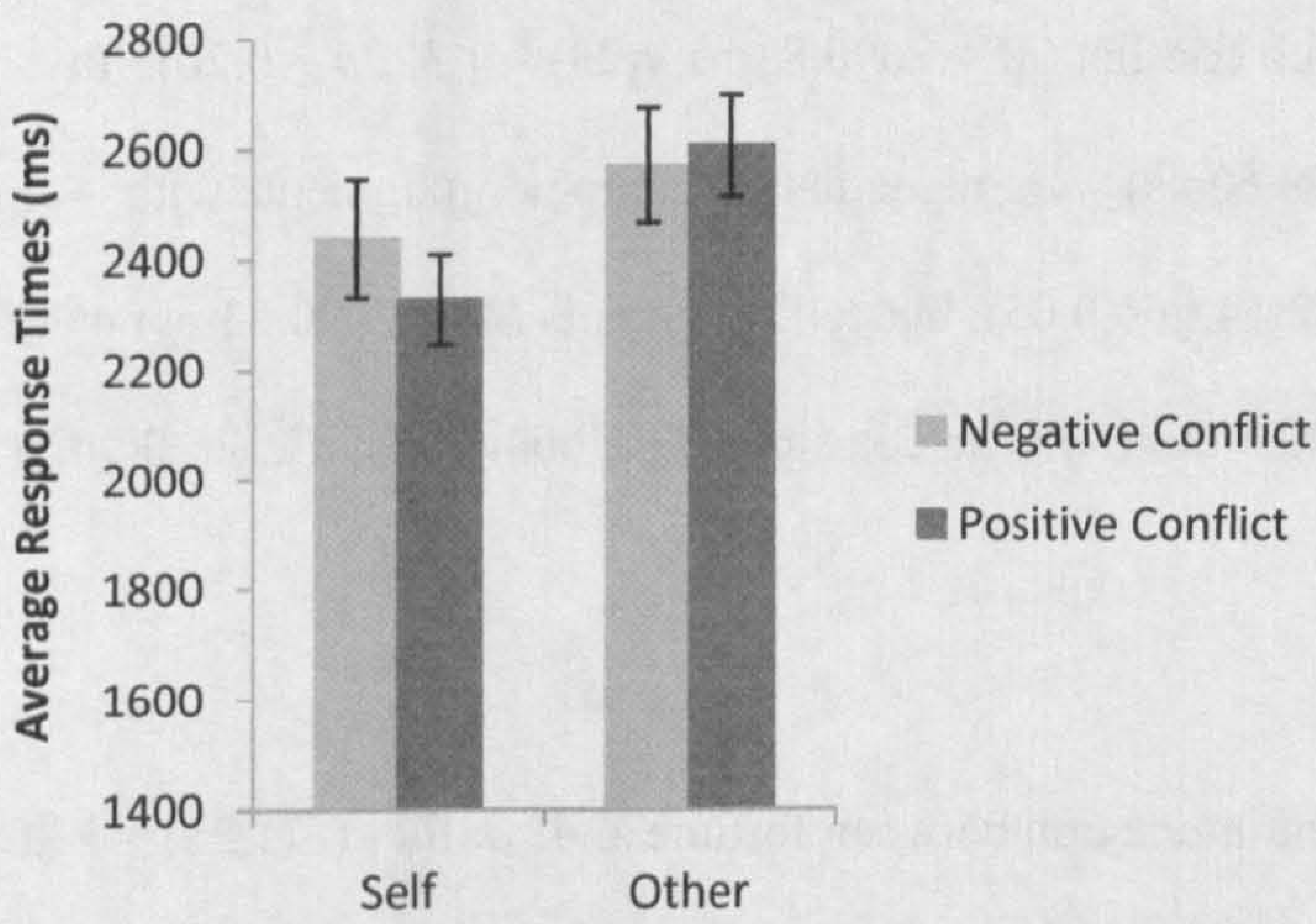


Figure 5.2. Average response times (ms) to make emotional judgments following scenarios of good and bad fortune, with and without conflict (a), and following neutral fortune when the second person had good or bad fortune (b), when making self and other judgments in Experiment 5. 1 Standard error bars displayed.

Responses to neutral fortune

Scenarios in which the target protagonist had neutral fortune, but where the second person had good or bad fortune (i.e. the target was a neutral observer to the fortune of the second person) were included to encourage participants to make full use of the emotional scale.

However, they also provided a more traditional measure of empathy in self and other judgments (i.e. when there is no conflict with the perspective of self or other). Assimilation to the fortune of the second person (lower ratings when that person had bad fortune and higher ratings when they had good fortune) was taken as a measure of empathy. Therefore, the greater the contrast between responses to neutral scenarios where the second person had good fortune and responses to neutral scenarios where the second person had bad fortune would indicate greater empathy. In order to examine this, a two-way repeated ANOVA, with the factors conflict type (good fortune/bad fortune) and perspective (self/other), was performed on ratings. This analysis was repeated on response times to examine whether participants differed in how long they took to make self and other judgments in the two neutral conditions.

Emotional Ratings (see Table 5.2)

The analysis revealed no effect of perspective ($F(1,23) < 1$, $\eta_p^2 = 0.01$), but an effect of conflict type ($F(1,23) = 59.68$, $p < 0.001$, $\eta_p^2 = 0.72$). Responses to neutral scenarios were significantly lower when the second person experienced bad fortune ($M = 3.65$) compared to when the second person experienced good fortune ($M = 4.63$). This was the same for self ($M_{Bad} = 3.55$vs. $M_{Good} = 4.70$) and other judgments ($M_{Bad} = 3.74$ vs. $M_{Good} = 4.56$) , with no interaction between perspective and conflict type ($F(1,23) = 2.72$, $p = 0.11$, $\eta_p^2 = 0.11$). Thus, participants assimilated to the fortune of a second person when making self and other judgments.

Response Times (see Figure 5.2b)

The response time analysis revealed an effect of perspective ($F(1,23) = 33.59$, $p < 0.001$, $\eta_p^2 = 0.59$), with self judgments ($M = 2385.23$ms) made faster than other judgments ($M = 2590.19$ms). There was no effect of conflict type ($F(1,23) < 1$, $\eta_p^2 = 0.01$) and no interaction between conflict type and perspective ($F(1,23) = 2.32$, $p = 0.14$, $\eta_p^2 = 0.09$).

DISCUSSION

Another person's contrasting bad fortune slowed response times and resulted in less positive responses to good fortune, consistent with anticipated empathy for that person's bad fortune. Conversely, another person's good fortune had little effect on emotional responses to bad fortune, showing an absence of anticipated positive empathy for that person's good fortune. This was observed both when making self and other judgments, replicating and extending the findings of Experiments 2, 3 and 4 to show the same negative-positive asymmetry in emotional judgments when making other judgments. In other words, other judgments, like self judgments, appear to be affected not only by the emotional events experienced by that person, but also by predicted empathy towards the (negative but not positive) emotional experiences of others present in the same situation.

In fact, no reliable differences were observed between self and other ratings, though the pattern of the data was consistent with participants predicting greater empathy in self than in other. For instance, situations in which the target had neutral fortune (across all participants and for 17/24 participants) and situations in which the target had good fortune (across all participants and for 19/24 participants) were rated more negatively when the second person had bad fortune when making self judgments than when making other judgments. In addition, although participants appeared to anticipate empathy in others, it is possible that this may be a more effortful computation when making other judgments than when making self judgments. Consistent with this, participants took longer to make other judgments (but not self judgments) when a second person experienced contrasting fortune. If this is the case, then it is possible that encouraging participants to respond faster to the emotional situations may reveal differences between self and other judgments. To explain, if it takes individuals longer to calibrate their emotional predictions for the concurrent experience of a second person (for empathy) when making other judgments then encouraging them to respond faster may sometimes lead participants to respond before this process is completed, resulting in less predicted empathy. This was tested in Experiment 6 by repeating the experiment with a speeded forced choice response.

Experiment 6

METHOD

Design

Experiment 6 used the same 2x2x2 design as Experiment 5, manipulating perspective (self/other), fortune of the target perspective (good/bad) and the conflict between the fortunes of self and other (no conflict/conflict). Again, a set of scenarios were included in which the target perspective was a neutral observer to the good or bad fortune of the second person; this time to make 'neutral' a valid response option. The dependent variable in this experiment was the proportion of bad, neutral or good responses made following bad, neutral and good fortune scenarios respectively.

Participants

A different group of 25 participants[25] (19 female) participated in this experiment, receiving a small inconvenience allowance. The age of participants ranged between 18 and 34 years (M = 21.20 years, SD = 4.38), and all participants were native English speakers.

Stimuli & Procedure

The stimuli and procedure were the same as Experiment 5. The only difference was that participants made their emotion judgments using the forced choice of Bad vs. Good, Bad vs. Neutral or Neutral vs. Good used in Experiments 3 and 4. These were presented in place of the rating scale, with the response choice reflecting the valence of the two perspectives

[25] Technical errors occurred during one block of the experiment which resulted in the data from 5 participants being excluded. 5 additional participants took part in the study to keep the overall number of participants at 25.

described in the scenario (Figure 5.1b). Participants made their response by selecting one of the two mouse keys. Participants were instructed to respond quickly and were given a maximum of 8000ms to respond before the next scenario.

Participants then completed the same exit questions as Experiment 5, rating how much they liked the other, how similar they thought they were to the other and how vividly they felt they could imagine the scenarios on a 7-point scale, with higher ratings indicating high agreement with the item.

RESULTS

Exit Questionnaire: Impressions of the other and reported ability to imagine the scenarios

Generally, and to a similar extent to participants in Experiment 5, participants reported liking the other in the scenario ($M = 5.36$, $SD = 1.25$). Perceived similarity ($M = 4.44$, $SD = 1.47$) was moderate and the ability to imagine the scenarios was quite high ($M = 5.44$, $SD = 0.96$), with similar ratings to those made by participants in Experiment 5.

Responses to good and bad fortune

Emotional Responses (see Figure 5.3a)

Responses were analysed according to the proportion of responses made in line with the target's own fortune (e.g. bad for bad fortune etc.), with predicted empathy measured by examining the effect of a second person's concurrent bad or good fortune on responses (i.e. the effect of conflict). This was analysed in a 2x2x2 repeated measure ANOVA, with the factors, perspective (self/other), fortune (good/bad) and conflict (no conflict/conflict).

The analysis revealed that there was no main effect of perspective on the responses given ($F(1,23) < 1$, $\eta_p^2 = 0.04$), but significantly more bad responses were made to bad fortune (M = 83.70%) than good responses to good fortune (M = 74.50%; $F(1,24) = 13.08$, $p < 0.01$, η_p^2 = 0.35). There was also an effect of conflict ($F(1,24) = 41.85$, $p < 0.001$, $\eta_p^2 = 0.64$), with less responses in line with the target's fortune when the second person had contrasting fortune (M = 70.90%) than when there was no conflict (M = 87.30%). However, a significant two-way interaction between fortune and conflict ($F(1,24) = 64.26$, $p < 0.001$, $\eta_p^2 = 0.73$) and a significant three-way interaction of perspective x fortune x conflict ($F(1,24) = 10.69$, $p <$ 0.01, $\eta_p^2 = 0.31$) qualified these main effects. Exploration of the three-way interaction revealed that a fortune x conflict interaction was observed irrespective of whether participants made self judgments ($F(1,24) = 54.85$, $p < 0.001$, $\eta_p^2 = 0.70$) or other judgments ($F(1,24)$ = 35.08, $p < 0.001$, $\eta_p^2 = 0.59$). When making self judgments, less good responses to good fortune were made when the other had bad fortune (M = 53.33%) than when there was no conflict (M = 91.32%; $t(24) = 8.37$, $p < 0.001$), but the other person's good fortune had no effect on responses to bad fortune (M = 84.63%) compared to when the other had neutral fortune (M = 82.16%; $t(24) = 0.85$, $p = 0.40$). This was the same for other judgments; participants made less good responses to good fortune when the self-referent had bad fortune (M = 63.16%) than when there was no conflict (M = 90.0%; $t(24) = 6.03$, $p < 0.001$), but made a similar proportion of bad responses to bad fortune whether the self-referent had good (M = 82.34%) or neutral fortune (M = 85.34%; $t(23)= 1.18$, $p = 0.25$). Self and other judgements did not differ in the proportion of bad responses to bad fortune whether there was conflict (M_{Self} = 84.63% vs. M_{Other} = 82.34%; $t(24) = 0.61$, $p = 0.55$) or no conflict (M_{Self} = 82.16% vs. M_{Other} = 85.84%; $t(24) = 1.29$, $p = 0.21$), and did not differ in the proportion of good responses to good fortune when there was no conflict (M_{Self} = 91.32% vs. M_{Other} = 90.00%; $t(24) = 0.69$, $p = 0.50$). However, participants were slightly more willing to make good responses to good fortune when a second person had bad fortune when making other judgments (M = 63.16%) than when making self judgments, explaining the three-way interaction (M = 53.33%; $t(24) = 2.13$, $p < 0.05$).

Response Times (see Figure 5.3b)

Response times were analysed regardless of the actual response. Less than 0.1% of data points were removed as a result of no response. Response times were shorter using a forced choice response (than when using the rating in Experiment 5) and therefore an arbitrary cut of 5000ms was used to remove extreme outliers[26]. This resulted in the removal of between 0.01% and 2.08% of data points across conditions. The skewness and kurtosis values following data pre-processing were high at 1.80 and 4.20 respectively, but following the same principle as Experiment 5, analyses of the untransformed data is reported[27].

The analysis revealed that self judgments (M = 1225.34ms) were made faster than other judgements (M = 1286.98ms; $F(1,24) = 5.09, p < 0.05, \eta_p^2 = 0.18$). Responses were also slower when a second person had contrasting fortune (M = 1324.68ms) than when there was no conflict (M = 1187.64ms; $F(1,24) = 18.30, p < 0.001, \eta_p^2 = 0.43$). There was no main effect of fortune ($F(1,24) < 1, \eta_p^2 = 0.00$). However, the effect of conflict was qualified by a fortune x conflict interaction ($F(1,24) = 17.55, p < 0.001, \eta_p^2 = 0.42$). Paired t-tests revealed that a second person's bad fortune delayed responses to good fortune (M = 1376.17ms) compared to when there was no conflict (M = 1130.72ms; $t(24) = 5.83, p < 0.001$), but that a second person's good fortune did not significantly affect responses to bad fortune (M = 1272.79ms) compared to when there was no conflict (M = 1244.58ms; $t(24) = 0.71, p = 0.49$). However, conflict did not interact with perspective ($F(1,24) = 2.08, p = 0.16, \eta_p^2 = 0.08$), nor was there a three-way interaction between perspective, conflict and fortune ($F(1,24) < 1, \eta_p^2 = 0.00$).

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[26] The average response times of all participants fell within 2 standard deviations of this value.
[27] Log transformation reduced skewness to 0.56 and kurtosis to 0.31.

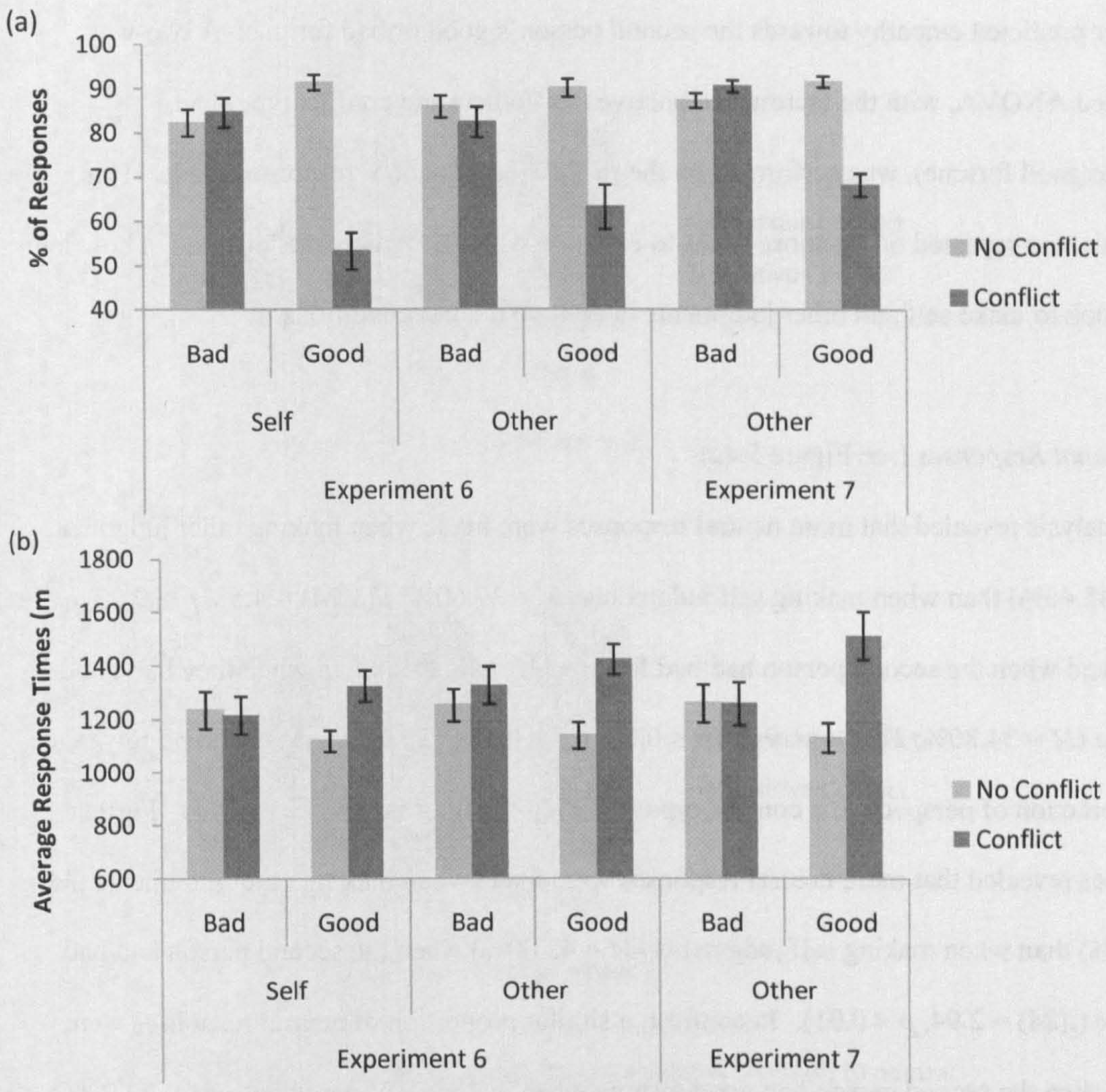

Figure 5.3. Proportion of responses in line with the target's own fortune given in Experiment 6 and Experiment 7 (a) and responses times to scenarios of good and bad fortune (b) by perspective, and with and without emotional conflict. 1 standard error bars displayed.

Responses to neutral scenarios

For a similar reason to Experiment 5 and like in Experiments 3 & 4, in some scenarios the target perspective had neutral fortune, being an observer to the good or bad fortune of the second person. These were included to ensure that 'neutral' was seen as a viable response option, but again provided a more traditional measure of empathy in self and other judgments (when there is no conflict with the perspective of self or other). Less neutral responses (and therefore more good/bad responses) made to these scenarios was taken as a measure of greater predicted empathy towards the second person's good or bad fortune. A two-way repeated ANOVA, with the factors perspective (self/other) and conflict type (bad fortune/good fortune), was performed on the proportion of neutral responses made. This analysis was repeated on response times to examine whether participants differed in how long they took to make self and other judgments in the two neutral conditions.

Emotional Responses (see Figure 5.4a)

The analysis revealed that more neutral responses were made when making other judgments ($M = 45.40\%$) than when making self judgments ($M = 37.60\%$; $F(1,24) = 4.58, p < 0.05, \eta_p^2 = 0.16$) and when the second person had bad fortune ($M = 48.20\%$) than when they had good fortune ($M = 34.80\%$; $F(1,24) = 9.10, p < 0.01, \eta_p^2 = 0.28$). There was also a trend towards an interaction of perspective x conflict type ($F(1,24) = 3.10, p = 0.09, \eta_p^2 = 0.11$). Further analyses revealed that more neutral responses were made when making other judgments ($M = 54.40\%$) than when making self judgments ($M = 42.00\%$) when the second person had bad fortune ($t(24) = 2.94, p < 0.01$). In contrast, a similar proportion of neutral responses were made when the second person had good fortune when making self judgments ($M = 33.20\%$) as when making other judgments ($M = 36.40\%$; $t(24) = 0.68, p = 0.50$).

Response Times (see Figure 5.4b)

Self judgments ($M = 1332.85$ms) were again made faster than other judgments ($M = 1490.35$ms; $F(1,24) = 7.19, p < 0.05, \eta_p^2 = 0.23$)[28]. There was no effect of conflict type ($F(1,24) < 1, \eta_p^2 = 0.02$) and no interaction between perspective and conflict type ($F(1,24) < 1, \eta_p^2 = 0.00$).

[28] This effect of perspective did not reach significance using log transformed response times ($F(1,24) = 2.86, p = 0.10, \eta_p^2 = 0.11$).

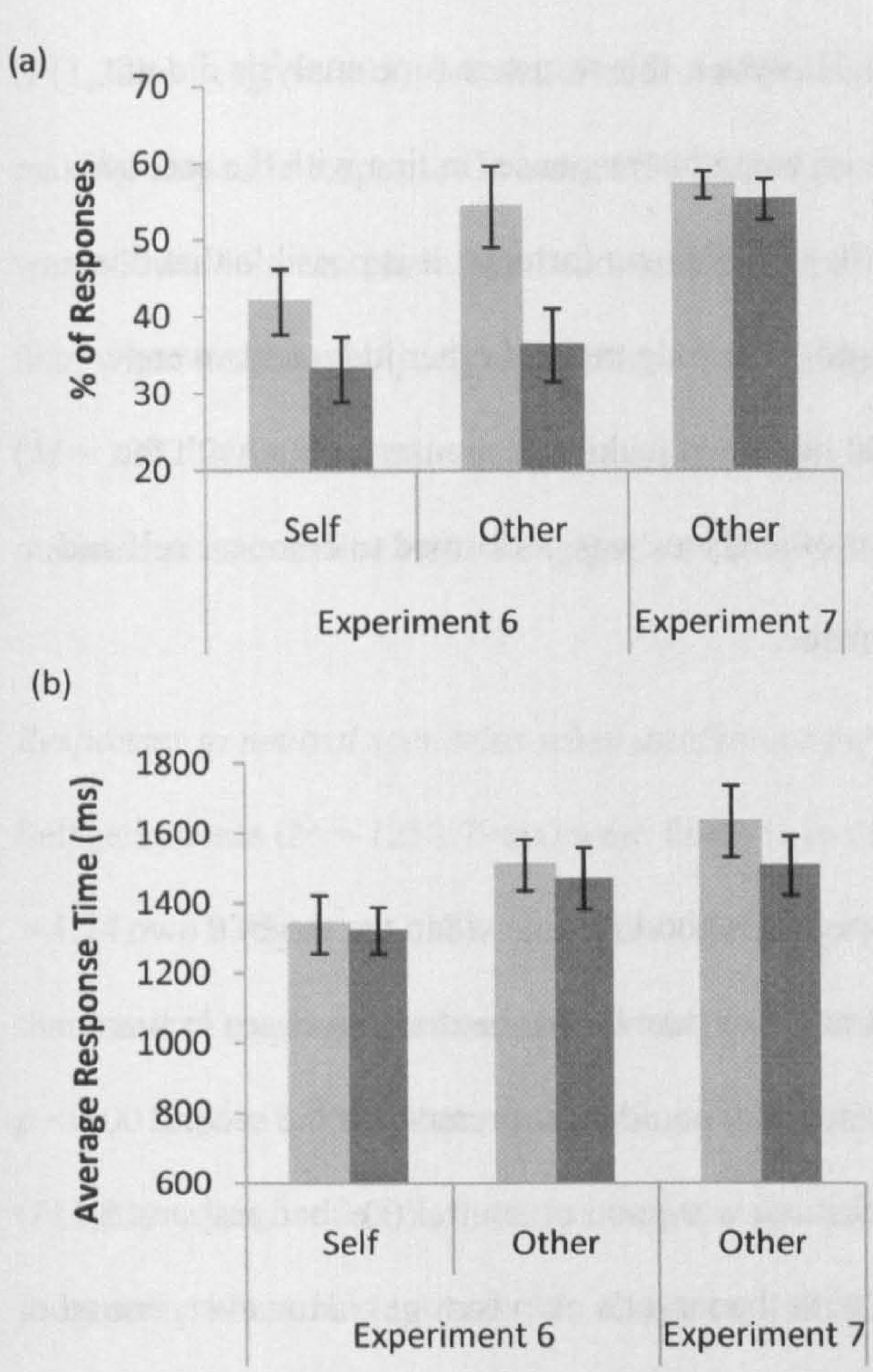

Figure 5.4. Proportion of neutral responses (a) and response times (b) to neutral scenarios in which the second person had good or bad fortune in Experiment 6 and Experiment 7 by perspective. 1 standard error bars displayed.

Summary

Participants were slightly more likely to respond that someone else would feel neutral or good in line with that person's own neutral or good fortune than they would when another person concurrently had bad fortune. This is consistent with it being more effortful to compute empathy in others than to anticipate empathy in self. This was not reflected in a greater effect of the second person's bad fortune on response times for other judgments compared to self judgments when evaluating situations in which the target had good fortune (though may be compatible with the slower response times observed for other judgments than for self judgments in response to neutral scenarios). However, this response time analysis did not take into account whether participants made an empathic response (in line with the second person's fortune) or a response in line with the target's own fortune. It is possible that this may have masked differences between self and other judgments if other judgments were slower when making empathic responses, but not when making responses in line with the target's own fortune. Therefore, a second set of analyses was performed to compare self and other judgments according to the responses made.

Time to make empathic predictions

Empathy could be expressed for the second person's good fortune when the target's own fortune was bad or neutral (i.e. good responses rather than bad or neutral responses in line with the target's own fortune). Conversely, empathy could be expressed for the second person's bad fortune when the target's own fortune was good or neutral (i.e. bad responses rather than good or neutral responses in line with the target's own fortune). However, due to the low number of empathic responses for the second person's good fortune when the target's own fortune was bad these scenarios were not considered here. For the remaining three conditions, separate[29] two-way ANOVAs of perspective and response (empathic/target's own fortune) were performed.

Responses to good fortune when another person has bad fortune (N=23) (see Figure 5.5)

Self judgments (M = 1350.87ms) were slightly faster than other judgments (M = 1454.67ms), though this did not reach significance ($F(1,22) = 2.86, p = 0.11, \eta_p^2 = 0.12$)[30]. There was no effect of response ($F(1,22) < 1, \eta_p^2 = 0.03$), participants were as fast to express empathy for the second person's bad fortune (M = 1432.16ms) as to make responses in line with their own

[29] It was not possible to include all participants in these analyses as not all participants made both empathic responses and responses in line with the target's own fortune in all conditions and therefore separate ANOVAs were performed to allow the maximum inclusion of participants in each analysis.

[30] The effect of perspective reached significance using log transformed response times ($F(1,23) = 6.82, p < 0.05, \eta_p^2 = 0.23$).

fortune (M = 1373.38ms). There was also no interaction between perspective and response ($F(1,22) < 1$, $\eta_p^2 = 0.03$), but the direction of the data is consistent with the suggestion that making empathic responses is more effortful when making other judgments. Participants were slower to make empathic responses when making other judgments (M = 1515.34ms) than when making self judgments (M = 1348.98ms). The difference in response times for self (M = 1352.76ms) and other judgments (M = 1394.00ms) was much smaller when participants made responses in line with the target's own fortune.

Responses to neutral scenarios when another person has bad fortune (N=22) (see Figure 5.5)
Self judgments (M = 1252.79ms) were faster than other judgments (M = 1504.91ms; $F(1,21) = 4.74$, $p = 0.05$, $\eta_p^2 = 0.18$). Empathic (bad) responses (M = 1274.26ms) were also faster than neutral responses in line with the target's own fortune (M = 1583.43ms; $F(1,21) = 17.26$, $p < 0.001$, $\eta_p^2 = 0.45$). There was again no interaction between perspective and response ($F(1,21) < 1$, $\eta_p^2 = 0.03$). Participants were slower to make other judgments than to make self judgments when making empathic responses (M_{Other} = 1378.29ms vs. M_{Self} = 1170.23ms) and when making responses in line with the target's own fortune (M_{Other} = 1631.52ms vs. M_{Self} = 1535.35ms), though again this difference was greater when making empathic responses than when making responses in line with the target's own fortune.

Responses to neutral scenarios when another person has good fortune (N=21) (see Figure 5.5)
Self judgments (M =1421.88ms) were slightly faster than other judgments (M = 1507.47ms), though this was not significant ($F(1,20) = 1.53$, $p = 0.23$, $\eta_p^2 = 0.07$). Participants were significantly faster to make empathic (good) responses (M = 1274.26ms) than neutral responses in line with the target's own fortune (M = 1583.43ms; $F(1,20) = 27.39$, $p < 0.001$, $\eta_p^2 = 0.58$). There was no interaction between perspective and response ($F(1,20) = 2.08$, $p = 0.16$, $\eta_p^2 = 0.09$), though participants were slower to make empathic responses for other (M = 1345.37ms) than for self (M = 1160.98ms), with little difference between self (M =

1682.78ms) and other judgments (M = 1669.58ms) when making responses in line with the target's own fortune.

Summary

The advantage seen for self judgments on response times was most marked when making empathic responses; participants were slower to express empathy for a second person's good or bad fortune when making other judgments than when making self judgments. In contrast, there was a smaller difference between self and other judgments when participants made responses in line with the target's own fortune. Although not significant, this trend is consistent with the suggestion that it is more effortful to make empathic predictions for others than for self.

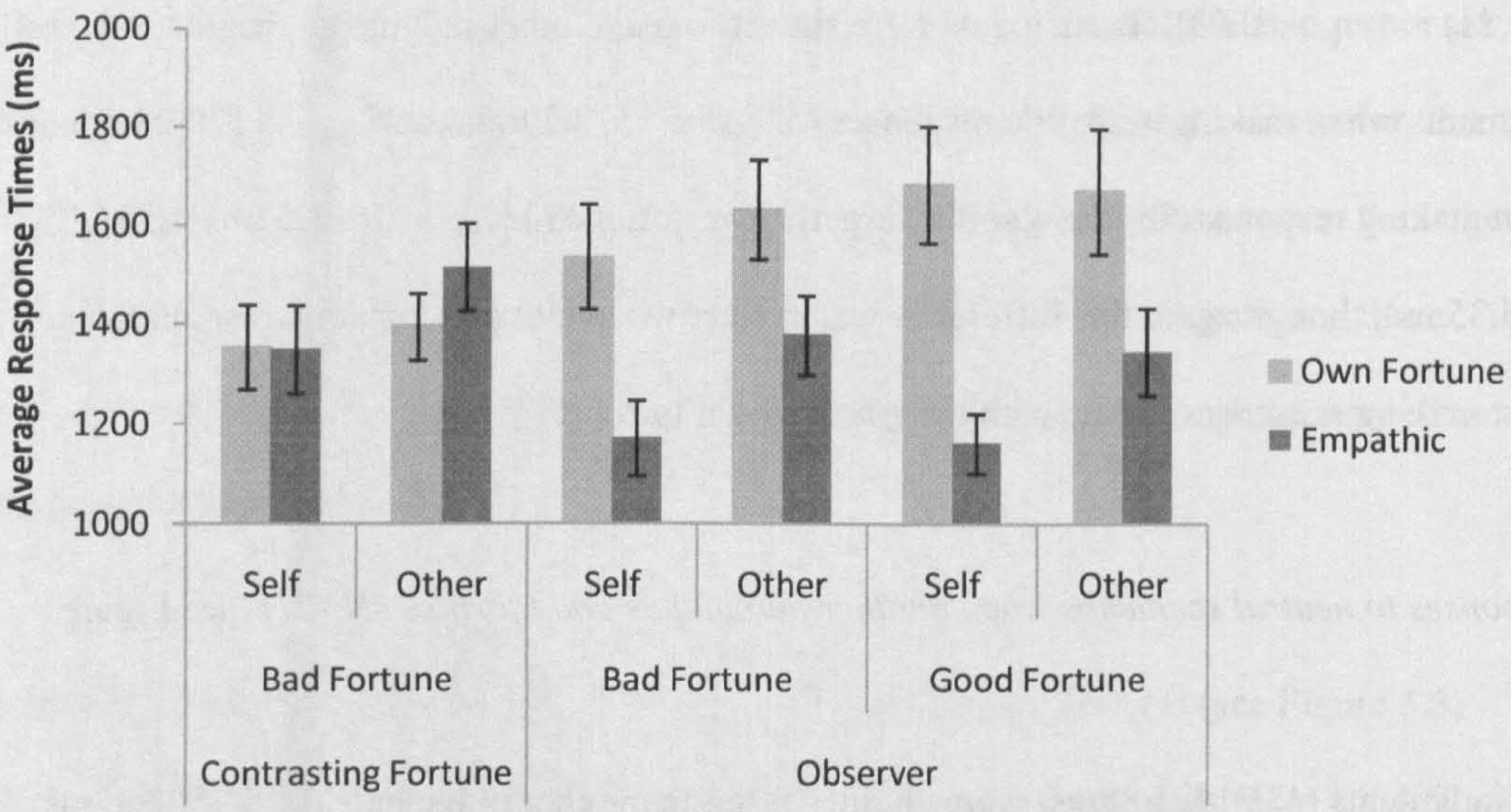

Figure 5.5. Average response times (ms) to express empathy for the bad fortune of a person (or to make responses in line with the target's own fortune) when the target's fortune was contrasting or neutral and to express empathy for the good fortune of a person (or to make responses in line with the target's own fortune) when the target's fortune was neutral when making self and other judgments in Experiment 6. 1 standard error bars displayed.

DISCUSSION

Even when responding faster (using a forced choice response), participants still responded empathically when making other judgments (like self judgments). They judged that another person would feel less good at receiving good fortune when a self-referent had bad fortune, seeming to predict negative empathy. Also, like self judgments, they did not anticipate positive empathy in others, judging the other to feel as bad at receiving bad fortune when a self-referent had good fortune. However, differences between self and other judgments emerged in this experiment: a second person's concurrent bad fortune had a greater impact on emotional responses to good and neutral fortune when making self judgments than when making other judgments. Moreover, when participants did judge that the other would feel bad in response to a second person's bad fortune (empathic responses), there was a tendency for this to take longer than for self judgments. Thus, one explanation for why there was little difference between self and other judgments in Experiment 5 may be that the extra time necessary to make a rating response closed the gap between self and other judgments, allowing participants more time to adjust other predictions for the bad fortune of a second person. This suggestion, however, would not easily be compatible with the idea that individuals make attributions about others by first making self predictions and then adjusting these according to perceived differences between themselves and the other, which would predict that responses would be less not more similar as time increases (Epley et al., 2004a).

Experiments 5 and 6 indicated that participants were sensitive to the concurrent (negative) experiences of a second person when making other judgments. However, because that second person was a self-referent it is possible that emotional experiences associated with that perspective may have been especially salient. In one study, Vogely et al. (2001) also used short stories with and without a self-referent character when they investigated the neural basis of the ability to understand the mental states of others. Despite it being a fictional self, they observed greater activation in the right inferior frontal gyrus (linked to greater cognitive control) when participants were required to attribute mental states to a character in a story in which the self also featured compared to when the self did not feature, suggesting that information relating to the self needed to be suppressed. Thus, it is possible that participants may only have been sensitive to the second person's concurrent experience when making other judgments because that perspective was associated with the self. Experiment 7, therefore, investigated whether participants would still be sensitive to the fortunes of a second person when making other judgments when that second person was not a self-referent.

Experiment 7: Other/Other perspective-taking

METHOD

Design

The same 2x2x2 within subject design was used as Experiments 5 & 6, but with the self perspective replaced by a second other perspective. Thus, the factors were perspective (other1/other2), fortune (good/ bad) and conflict (no conflict/conflict). In addition, like Experiments 5 and 6, neutral scenarios were included in which the target had neutral fortune, but the second other had either good or bad fortune. Like Experiment 6, response times and the proportion of bad, neutral or good responses made following bad, neutral and good fortune scenarios were recorded as dependent measures.

Participants

A different group of 24 participants (16 female) took part in this experiment, receiving a small inconvenience allowance. Participants were aged between 18 and 32 years ($M = 21.21$ years, $SD = 3.26$) and were all native English speakers.

Stimuli

The stimuli were the same as Experiments 5 & 6, with the exception being that the self perspective was replaced by another third-person perspective (with appropriate pronoun and grammatical changes). To minimise ambiguity in the scenarios, the two protagonists were a male and a female.

Procedure

The procedure was the same as Experiment 6. The only difference was that participants were asked to imagine that Kate and John were close friends and to judge how either Kate or John would feel in the scenarios. Participants were cued to which perspective to take following each scenario using a photograph of the target protagonist (Figure 5.1c). Participants responded using the forced choice response used in Experiment 6.

Afterwards, participants rated how much they liked Kate and John, how similar they thought they were to Kate and John, and how vividly they felt they could imagine the scenarios on a 7-point scale, with higher ratings indicating greater liking, greater similarity and greater ability to imagine the scenarios. They also rated how empathic they believed Kate, John and themselves to be (in that order) on a 7-point scale, with 7 being highly empathic.

RESULTS

Exit Questionnaire: Impressions of the other and reported ability to imagine the scenarios

Ratings of liking, similarity and of the ability to imagine the scenarios were similar to those reported in Experiments 5 and 6. Participants reported liking both Kate ($M = 5.29$, $SD = 0.81$) and John ($M = 5.21$, $SD = 0.78$); $t(23) = 0.81$, $p = 0.43$). They also reported being moderately similar to both Kate ($M = 4.13$, $SD = 1.42$) and John ($M = 4.00$, $SD = 1.06$; $t(23)$

= 0.51, $p = 0.61$)[31] and reported being able to vividly imagine the scenarios ($M = 5.33$, $SD = 1.27$). Participants' ratings of empathy did not differ significantly for John ($M = 4.46$, $SD = 0.83$) or Kate ($M = 4.29$, $SD = 1.27$; $t(23) = 0.66$, $p = 0.52$). However, participants rated their own empathy ($M = 5.25$, $SD = 1.19$) as significantly higher than either John's ($t(23) = 2.64$, $p < 0.05$) or Kate's ($t(23) = 2.53$, $p < 0.05$).

Data processing and analysis

Less than 0.1% of data points were removed as a result of no response. Discarding response times greater than 5000ms[32] resulted in the removal of between less than 0.01% and 1.30% of data points across conditions. Skew and kurtosis following data pre-processing were slightly high at 1.71 and 3.39, but following the same principles as Experiments 5 and 6, analyses of the untransformed data is reported.[33]

Initially the two perspectives were coded as gender congruent or gender incongruent with the participant and were analysed in a three-way ANOVA of perspective (congruent/ incongruent), fortune (good/bad) and conflict (no conflict/conflict). This revealed a small interaction between perspective and conflict on response times ($F(1,23) = 5.26$, $p < 0.05$, $\eta_p^2 = 0.19$). Responses were slightly faster to judge the gender incongruent perspective ($M = 1179.25$ms) than the gender congruent perspective ($M = 1213.70$ms) on no conflict scenarios ($t(23) = 2.13$, $p < 0.05$), but there was no effect of perspective on conflict scenarios ($t(23) = 1.10$, $p = 0.28$). However, there was a similar effect of conflict for both perspectives ($p < 0.001$) and there was no effect of perspective and no interactions with perspective ($p > 0.16$) on emotional responses and therefore results were collapsed across perspectives for

[31] Similarly, no significant difference in liking ($t(23) = 0.00$, $p = 1.00$) or similarity ($t(23) = 1.62$, $p = 0.12$), or in the ability to imagine the feelings of the protagonist ($t(23) = 0.36$, $p = 0.72$) were found between the two protagonists when data was analysed according to the gender of the participant (analysed as gender congruent or incongruent).

[32] The average response times of all but one participant fell within 2 standard deviations of this value ($M = 2390.91$, $SD = 1392.21$)

[33] Log transforming the data reduced skewness to 0.54 and kurtosis to -0.01.

simplicity. A 2x2 repeated ANOVA of fortune (good/bad) and conflict (no conflict/conflict) was performed on both response times and responses to bad and good fortune.

Responses to good and bad fortune

Emotional Responses (see Figure 5.3a)

Participants made more bad responses to bad fortune (M = 88.80%) than good responses to good fortune (M = 79.90%; $F(1,23) = 36.90, p < 0.001, \eta_p^2 = 0.62$) and made less responses in line with the target's own fortune in situations when a second person had contrasting fortune (M = 79.40%) than when there was no conflict (M = 89.30%; $F(1,23) = 34.20, p < 0.001, \eta_p^2 = 0.60$). However, these main effects were qualified by a fortune x conflict interaction ($F(1,23) = 68.68, p < 0.001, \eta_p^2 = 0.75$). Paired t-tests indicated that there were less good responses to good fortune when a second person concurrently had bad fortune (M = 68.30%) than when there was no conflict (M = 91.50%; $t(23) = 8.40, p < 0.001$). In contrast, there was a trend towards more bad responses when the second person had good fortune (M = 90.50%) than when there was no conflict (M = 87.20%; $t(23) = 1.81, p = 0.08$).

Response Times (see Figure 5.3b)

Responses to bad fortune (M = 1194.80ms) showed a trend to be faster than responses to good fortune (M = 1262.93ms; $F(1,23) = 3.31, p = 0.08, \eta_p^2 = 0.13$). Responses were also slower when a second person had contrasting fortune (M = 1336.07ms) than when there was no conflict (M = 1121.67ms; $F(1,23) = 28.25, p < 0.001, \eta_p^2 = 0.55$). This effect was qualified by a fortune x conflict interaction ($F(1,23) = 39.95, p < 0.001, \eta_p^2 = 0.64$). Paired t-tests revealed that a second person's bad fortune delayed responses to good fortune (M = 1514.21ms) compared to when there was no conflict (M = 1133.28ms; $t(23) = 7.54, p < 0.001$). In contrast, a second person's good fortune had no effect on responses to bad fortune (M = 1261.72ms) compared to when there was no conflict (M = 1261.51ms; $t(23) = 0.01, p > 0.99$).

Responses to neutral scenarios

Responses to neutral scenarios were used as traditional measure of empathy, where the target perspective has no conflicting perspective. Fewer neutral responses (and therefore greater good or bad responses) were taken as a measure of greater empathy for the second person's fortune. Paired t-tests were used to examine the effect of a second person's good or bad fortune on responses to scenarios where the target's fortune was neutral.

Emotional Responses (see Figure 5.4a)

There was no difference in the proportion of neutral responses according to whether the second person had bad or good fortune ($t(23) = 0.38, p = 0.71$).

Response Times (see Figure 5.4b)

Responses to neutral scenarios were slower when the second person had bad fortune (M = 1633. 87ms) compared to when they had good fortune (M = 1509.41ms, $t(23) = 2.27, p < 0.05$).

Summary

In sum, even when the second person was not a self-referent participants were still sensitive to that person's concurrent (bad) fortune when judging how someone else would feel in the emotional situations. They were slower to judge how someone would feel in response to good fortune and made less positive responses to good fortune when a second person had bad fortune. However, in order to examine (a) whether a self-referent more strongly influenced responses than an other-referent and (b) whether there was evidence that participants anticipated less empathy in others in Experiment 7 than in self in Experiment 6, two further sets of analyses were conducted comparing Experiments 6 and 7.

Other judgments & Source of Emotional Conflict

In Experiments 6 and 7 participants judged how another person would feel in response to good or bad fortune when a second person had neutral fortune or contrasting fortune and the effect of that second person's fortune on responses was taken as a measure of anticipated empathy. In Experiment 6 the second person was a self-referent and in Experiment 7 the second person was an other-referent. Information associated with a self perspective may be particularly salient and difficult to inhibit (Experiment 1, Chapter 2; Vogely et al., 2001) and therefore Experiment 7 was conducted to examine whether participants were still sensitive to the concurrent fortunes of another person when that other was not afforded special status by being linked to the self (Symons & Johnson, 1997). This confirmed that participants were sensitive to a second other's emotional experiences, but an analysis was performed to assess whether any of the effect of the second person's fortunes on other judgments observed in Experiment 6 could be explained as resulting from a salient self perspective. To do this, other judgments made in Experiment 6 were compared to other judgments made in Experiment 7[34] in a mixed sample ANOVA of fortune (good/ bad) x conflict (no conflict/conflict) x source of conflict (self (Experiment 6)/other (Experiment 7)). Only effects of or interactions with source of conflict are reported.

Responses to good and bad fortune

Emotional Responses

There was no effect of source of conflict ($F(1,47) = 1.98, p = 0.17, \eta_p^2 = 0.04$) and no interactions with source of conflict ($p > 0.16$); participants made similar other judgments regardless of whether a self perspective was present in the scenarios or not.

[34] The other judgment data used from Experiment 7 was the data collapsed across perspectives (gender congruent and incongruent with the participant).

Response Times

There was no effect of source of conflict ($F(1,47) < 1$, $\eta_p^2 = 0.00$) and no interactions with source of conflict reached significance ($p > 0.07$); other judgments were equally fast whether a self perspective was present or not.

Responses to neutral fortune

A two-way mixed factor ANOVA, with the factors source of conflict (self (Experiment 6)/other (Experiment. 7)) and conflict type (bad fortune/good fortune) was performed on responses made to a target's neutral fortune to assess whether the good and bad fortune of a self-referent had a greater effect on responses than an other-referent's good and bad fortune (resulting in less neutral responses in line with the target's own fortune).

Emotional Responses

Fewer 'neutral' responses to neutral scenarios were made when judging how another person would feel when a self-referent had good/bad fortune ($M = 45.40\%$) than when a second other had good/bad fortune ($M = 56.40\%$), but this just failed to reach significance ($F(1,47) = 3.85$, $p = 0.06$, $\eta_p^2 = 0.08$). However, there was a significant interaction between source of conflict and conflict type ($F(1,47) = 4.39$, $p < 0.05$, $\eta_p^2 = 0.09$). Further analyses revealed that fewer 'neutral' responses were made when making other judgments when a self-referent had good fortune ($M = 36.40\%$) than when a second other had good fortune ($M = 55.42\%$; $t(47) = 2.68$, $p = 0.01$). However, there was no significant difference in neutral responses whether a self-referent ($M = 54.40\%$) or a second other had bad fortune ($M = 57.29\%$; $t(23) = 0.45$, $p = 0.66$).

Response Times

There was no overall effect of source of conflict on response times ($F(1,47) < 1$, $\eta_p^2 = 0.01$) and no interaction between conflict type and source of conflict when making other judgments in response to neutral scenarios ($F(1,47) = 1.07$, $p = 0.31$, $\eta_p^2 = 0.02$).

Summary

Participants appeared to be similarly sensitive to a second person's concurrent fortunes when making other judgments whether that person was linked to the self or not. The only exception to this was on responses to neutral scenarios, where the good fortune of a self-referent influenced responses more than the good fortune of a second other (see discussion).

Self versus Other Judgments

The presence of a self-referent did not seem to account for much of participants' predicted empathy in other judgments in Experiment 6, but Experiment 7 provided a measure of empathy in other judgments without potential contamination from a salient self-referent. Therefore, self judgments made in Experiment 6 and other judgments made in Experiment 7 (where in both cases the second person was an other-referent) may provide a more matched comparison from which to look at predicted empathy in self and other judgments. In order to do this, a mixed sample ANOVA of fortune (good/ bad) x conflict (no conflict/conflict) x perspective (self (Experiment 6)/other (Experiment 7[35])) was performed. Only effects of or interactions with perspective are reported. Statistics are reported with corrected degrees of freedom where equal variances could not be assumed.

Responses to good and bad fortune

Emotional Responses

There was an overall effect of perspective, with more responses in line with the target's own fortune when making other judgments (M = 84.30%) than when making self judgments (M = 77.90%; $F(1,47) = 8.00, p < 0.01, \eta_p^2 = 0.15$). There was also an interaction of perspective x conflict ($F(1,47) = 6.02, p < 0.05, \eta_p^2 = 0.11$), and of perspective x fortune x conflict ($F(1,47)$

[35] The other judgment data used from Experiment 7 was the data collapsed across perspectives (gender congruent and incongruent with the participant).

$= 4.82, p < 0.05, \eta_p^2 = 0.09$). As the three-way interaction qualifies the two-way interaction, only the analysis of this is reported. This indicated that less good responses were made to good fortune when the second person had bad fortune when making self judgments (M = 53.33%) than when making other judgments (M = 68.29%; $t(40.17) = 3.06, p < 0.01$), indicating greater anticipated empathy in self judgments than in other judgments. In contrast, there was no significant difference between self and other judgments in the proportion of good responses made to good fortune (M_{Self} = 91.32% vs. M_{Other} = 91.46%; $t(42.39) = 0.07, p = 0.95$) or bad responses to bad fortune (M_{Self} = 82.16% vs. M_{Other} = 87.19%; $t(47) = 1.43, p = 0.16$) when the second person had neutral fortune. In addition, there was no significant difference between self and other judgments in the proportion of bad responses made to bad fortune when the second person had good fortune (M_{Self} = 84.63% vs. M_{Other} = 90.46%; $t(31.34) = 1.66, p = 0.11$), with participants showing a similar lack of anticipated positive empathy.

Response Times

Other judgments (M = 1292.68ms) were slightly, but not significantly, slower than self judgments (M = 1225.34ms; $F(1,47) < 1, \eta_p^2 = 0.01$). However, there was a trend for a three-way interaction between perspective, fortune and conflict ($F(1,47) = 3.91, p = 0.05, \eta_p^2 = 0.08$).[36] Numerically, a second person's bad fortune had a greater effect on responses to good fortune when making other judgments than when making self judgments (with a 380.93ms response delay for other judgments and a 205.18ms response delay for self judgments compared to when the second person had neutral fortune). However, although responses to good fortune when a second person had bad fortune were slower for other (M = 1514.21) than for self judgments (M = 1326.25ms) this failed to reach significance ($t(47) = 1.79, p = 0.08$). No other differences between self and other judgments were observed.

[36] There was also a trend for an interaction between conflict and perspective ($F(1,47) = 4.01, p = 0.05, \eta_p^2 = 0.08$) using log transformed response times. However, although the effect of conflict was numerically larger on other judgments, the effect of conflict was significant on both self and other judgments ($p < 0.05$).

Responses to neutral fortune

To recall, these scenarios were used as a more traditional measure of empathy (with no conflict with the target's own perspective) and less neutral responses (in line with the target's own fortune) was assumed to reflect greater empathy for the good or bad fortune of a second person. A two-way mixed factor ANOVA, with the factors perspective (self (Experiment 6)/other (Experiment 7)) and conflict type (bad fortune/good fortune), was performed to assess whether participants made less neutral responses when making self judgments than when making other judgments.

Emotional Responses

There was an overall effect of perspective, with fewer 'neutral' responses to neutral scenarios where a second person had good or bad fortune when making self judgments (M = 37.60%) than when making other judgments (M = 56.40%; $F(1,47) = 12.52, p < 0.01, \eta_p^2 = 0.21$). However, perspective did not interact with conflict type ($F(1,47) = 1.12, p = 0.30, \eta_p^2 = 0.02$).

Response Times

In response to neutral scenarios, there was an overall effect of perspective ($F(1,47) = 4.48, p < 0.05, \eta_p^2 = 0.09$), with faster responses when making self judgments (M = 1332.85ms) than when making other judgments (M = 1571.64ms). There was no interaction between conflict type and perspective ($F(1,47) = 1.88, p = 0.18, \eta_p^2 = 0.04$).

Summary

Similar to the within experiment comparison (Experiment 6), participants again seemed to predict less empathy in another person than in self. They made more neutral responses to neutral fortune when a second person had bad or good fortune and more good responses to good fortune when a second person had bad fortune when making other judgments than when making self judgments. Moreover, compatible with the idea that predicting empathy in others may be more effortful than predicting empathy in self, participants had a tendency to respond slower for other than for self when another person concurrently had bad fortune. However, like for Experiment 6, in order to better assess whether empathic responses (as opposed to responses in line with the target's own fortune) were specifically slower when making other judgments then when making self judgments, response times were re-analysed according to the response made.

Time to make empathic predictions

To recall, empathy could be expressed for the second person's good fortune when the target's own fortune was bad or neutral (i.e. good responses rather than bad or neutral responses in line with the target's own fortune). Conversely, empathy could be expressed for the second person's bad fortune when the target's own fortune was good or neutral (i.e. bad responses rather than good or neutral responses in line with the target's own fortune). However, again, due to the low number of empathic responses for the second person's good fortune when the target's own fortune was bad, these scenarios were not considered here. For the remaining three conditions, separate[37] two-way ANOVAs of perspective and response (empathic/target's own fortune) were performed.

Responses to good fortune when another person has bad fortune (N=49) (see Figure 5.6)

Self judgments (M = 1370.47ms) tended to be faster than other judgments (M =1590.24ms), though this just failed to reach significance ($F(1,47) = 3.87, p = 0.06, \eta_p^2 = 0.08$). Empathic (bad) responses (M = 1566.15ms) were slower than (good) responses in line with the target's own fortune (M = 1394.55ms; $F(1,47) = 6.71, p < 0.05, \eta_p^2 = 0.13$)[38]. There was also a trend for an interaction between perspective and response ($F(1,47) = 3.49, p = 0.07, \eta_p^2 = 0.07$). This indicated that participants were significantly slower to make empathic responses (M = 1737.91ms) than responses in line with the target's own fortune when making other

[37] It was not possible to include all participants in these analyses as not all participants made both empathic responses and responses in line with the target's own fortune in all conditions and therefore separate ANOVAs were performed to allow the maximum inclusion of participants in each analysis.
[38] This was only a trend using log transformed response times ($F(1,47) = 3.63, p = 0.06, \eta_p^2 = 0.13$).

judgments ($M = 1442.57$ms; $t(23) = 4.08, p < 0.001$), but not when making self judgments ($M_{Empathic} = 1394.40$ms vs. $M_{Own\ Fortune} = 1346.53$ms; $t(24) = 0.44, p = 0.67$). In addition, participants were slower to make other judgments ($M = 1737.91$ms) than to make self judgments ($M = 1394.40$ms) when they made an empathic response ($t(47) = 2.40, p < 0.05$), but not when they made responses in line with the target's own fortune ($M_{Other} = 1442.57$ms vs. $M_{Self} = 1346.53$ms; $t(47) = 0.84, p = 0.41$).

Responses to neutral scenarios when another person has bad fortune (N=48) (see Figure 5.6)
Self judgments ($M = 1380.36$ms) were again faster than other judgments ($M = 1656.94$ms; $F(1,46) = 4.53, p < 0.05, \eta_p^2 = 0.09$). Empathic (bad) responses ($M = 1274.26$ms) were also faster than neutral responses in line with the target's own fortune ($M = 1583.43$ms; $F(1,21) = 17.55, p < 0.001, \eta_p^2 = 0.28$). There was no interaction between perspective and response ($F(1,46) < 1, \eta_p^2 = 0.02$); participants were slower to make other judgments than to make self judgments when making empathic responses and when making judgments in line with the target's own fortune.

Responses to neutral scenarios when another person has good fortune (N=47) (see Figure 5.6)
Self judgments ($M = 1464.25$ms) tended to be faster than other judgments ($M = 1561.95$ms), though this was not significant ($F(1,45) < 1, \eta_p^2 = 0.02$). Empathic (good) responses ($M = 1296.14$ms) were also faster than neutral responses in line with the target's own fortune ($M = 1730.06$ms; $F(1,46) = 32.80, p < 0.001, \eta_p^2 = 0.42$). There was no interaction between perspective and response ($F(1,45) = 1.32, p = 0.26, \eta_p^2 = 0.03$). However, although participants were slower to make empathic responses when making other judgments ($M = 1388.51$ms) than when making self judgments ($M = 1203.77$ms), there was little difference between self ($M = 1724.73$ms) and other judgments ($M = 1735.38$ms) when making responses in line with the target's own fortune.

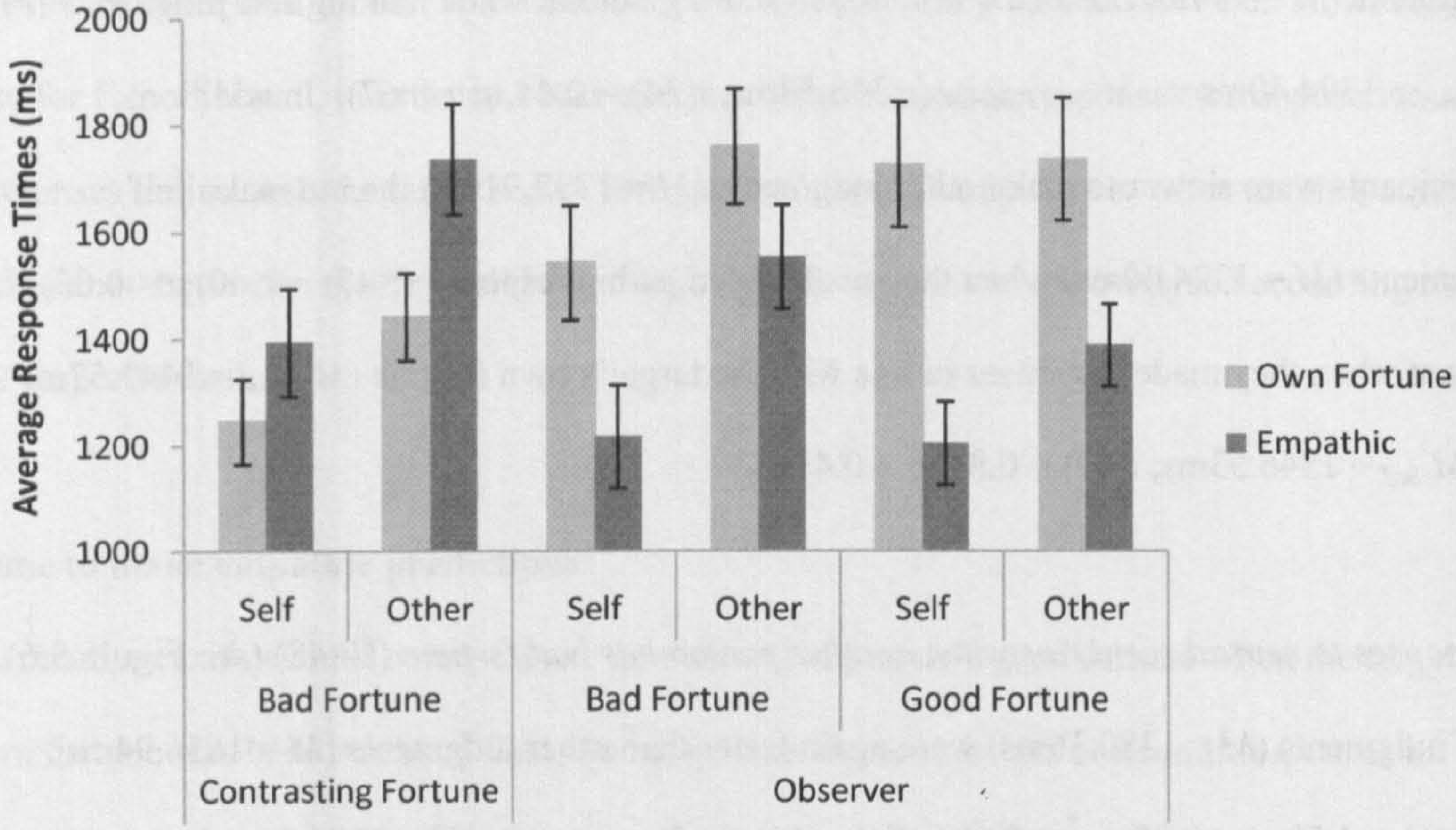

Figure 5.6. Average response times (ms) to express empathy for the bad fortune of a person (or to make responses in line with the target's own fortune) when the target's fortune was contrasting or neutral and to express empathy for the good fortune of a person (or to make responses in line with the target's own fortune) when the target's fortune was neutral when making self judgments in Experiment 6 and other judgments in Experiment 7. 1 standard error bars displayed.

Summary

Participants were generally slower to express empathy when making other judgments than when making self judgments. In contrast, there was a smaller difference between self and other judgments when participants made responses in line with the target's own fortune. This trend is consistent with the idea that predicting empathy in others is more effortful than predicting empathy in self. However, the reduced number of participants and the variable (and often small) number of data points comprising participants' average response times for empathic and own fortune responses (and their high variability) may have limited the ability to detect significant differences between self and other judgments.

DISCUSSION

Individuals modulated their predictions of how another person would feel according to the concurrent emotional experiences of a second person even when that second person was not a self-referent. Slower and fewer good responses were made to good fortune when a second other simultaneously experienced bad fortune. Conversely, another person's good fortune had no effect on response times to bad fortune, and there was actually a trend for more bad responses to bad fortune when a second other concurrently had good fortune. Moreover, comparing other judgments with and without a self-referent revealed only one significant difference; when judging how another person would feel in response to neutral scenarios, the good fortune of a self-referent had a greater impact on other judgments than the good fortune of a second other-referent. This may be explained by linguistic features of the English language, where the pronoun 'you', used in relation to the self-referent, also has a plural meaning and therefore the good fortune of the self-referent may have been interpreted as also belonging to the other in some instances. However, it is not clear how this could explain why, when making other judgments, the number of neutral responses made to the target's own neutral fortune did not differ depending on whether a self-referent or an other-referent had bad fortune. Nonetheless, despite this one difference, the results indicated that participants were sensitive to the concurrent experiences of a second person when making other predictions even when the second person's perspective was not made salient by linking it to the self.

In addition, while similarities in self and other judgments were strongly evident, small differences in the way we think of our own and other people's emotions were also apparent. When making other judgments, a second person's concurrent bad fortune had a slightly smaller influence on responses to situations in which the target's own fortune was neutral or good and a second person's concurrent good fortune had a slightly smaller influence on responses to situations in which the target's own fortune was neutral than it did when making self judgments. This mirrors the differences observed in self and other judgments in

Experiment 6. Moreover, while not consistently significant, there was again a trend for participants to be slower to make empathic predictions in others than in self, suggesting that it is a more effortful computation. Thus, although participants may be able to anticipate how the concurrent emotional experiences of others may affect other people's emotions, this may be more effortful when making predictions about others, resulting in slower and smaller adjustment (compared to self judgments).

GENERAL DISCUSSION

Being able to anticipate empathy in others is important in our interpersonal relations; it can help us feel understood by others (Hodges et al., 2010) and may help alleviate social anxiety and embarrassment in social situations (Epley et al. 2002). The findings from three studies suggested that individuals modulate their predictions of how another person would feel based on the concurrent emotional experiences of others present, consistent with anticipating empathy in others. This differs from the findings of Epley et al. (2002), which suggested that individuals do not correct their predictions of how they will be judged by observers in embarrassing situations for the observer's empathy. However, Epley et al. (2002) also found that when participants were directly asked to judge the ability of an observer to empathise with their situation they were better able to adjust their judgments for the observer's empathy. Although participants were not instructed to consider the empathy of the other person when making their emotional predictions in the current studies, the need to consider the effects of empathy may be more apparent when making inferences about another person's emotions than when making predictions about how they will be judged by others. It is also possible that when experiencing an emotional event online, such as the embarrassing situations (e.g. performing poorly on a quiz) in Epley et al.'s (2002) study, it may be more difficult to consider other people's empathy due to excessive focus on one's own embarrassment or other emotions.

Thus, it seems that individuals can appreciate how other people will be affected by the emotional states of others. One way in which participants might achieve this is by imagining how they themselves would feel in the situation and imputing this to the other person (e.g. Goldman, 2006; Van Boven & Loewenstein, 2003). For example, they might imagine how they would feel in response to good fortune if someone else had bad fortune and then infer that another person would feel as they would. This is consistent with the large degree of similarity between self and other judgments; with the modulation of responses to good fortune by another person's bad fortune, and with the lack of modulation of responses to bad fortune by another person's good fortune, seen in both self and other judgments. This may also be compatible with the longer response times to make other judgments, reflecting an extra level of computation involved in translating from a self perspective to another person's perspective (D'Argembeau et al., 2007; Jackson et al., 2006). However, it is not compatible with the reduced intensity in empathic prediction. Individuals calibrated their emotional predictions less for the emotional experiences of others when making other judgments than when making self judgments. This is compatible with different lines of research, offering alternative interpretations of the data.

Firstly, individuals may rely differentially on different strategies or information when making self and other judgments. Taking a third-person perspective can reduce the intensity of subjective emotional experiences and reduce neural activation in brain regions involved in affective processing compared to imagining emotional situations from a first-person perspective, and can be used as a strategy to down-regulate emotions (Holmes et al., 2008; Jackson et al., 2006; Lamm et al., 2007; Ochsner et al., 2004b). Following such observations, differences in self and other predictions may arise because adopting a third-person perspective promotes a more detached approach to appraising situations. It has also been suggested that two processing modes may used in emotional processing; a controlled, deliberative approach that relies on rule-based reasoning (also described as a propositional or a theorising approach) and a more experiential approach in which individuals may place themselves into the situation and simulate the thoughts and feelings they would feel (also described as an emotional or a simulation approach; Dunn, Forrin, & Ashton-James, 2009; Epstein, 1998; Rameson & Lieberman, 2009; Schaefer et al., 2003). Individuals are thought to use both of these processing strategies (Zaki, Weber, Bolger & Ochsner, 2009b), but it could be speculated that adopting a first-person perspective may encourage greater reliance on an experiential strategy, while taking a third-person perspective may promote a more cognitive approach. Both of these strategies may be capable of producing empathic responses, explaining the similarity between self and other judgments, but it is possible that using a more experiential processing mode may result in greater empathy, explaining the greater empathy observed in self predictions. In addition, the experiential mode is believed to operate faster and more automatically than the propositional mode (Dunn et al., 2009; Epstein, 1998; Rameson & Lieberman, 2009), which may help account for the tendency of individuals to make quicker empathic responses when making self judgments than when making other judgments. The suggestion that individuals may use different strategies when making self and other judgments is supported by a study described by Pronin et al. (2004) in which participants were asked about how they assessed their own or other people's susceptibility to various cognitive biases. Participants reported 'trying to get inside their head' more for self judgments and considering how 'people behave in general' more for other judgments, suggesting that individuals may make more use of psychological theories when thinking about others.

An alternative, but related, argument is that, although individuals may use the same sources of information when making judgments about self and others (explaining the similarities in self and other judgments), the weight given to these different sources may vary when adopting a first or third-person perspective (Pronin, 2008). In particular, participants may be more affected by their internal feelings when making self judgments than when making other judgments. In a series of studies, Pronin, Olivio and Kennedy (2008) showed that individuals make different decisions for themselves than for others, for example, judging others to be willing to drink more of an unpleasant drink for science than themselves and judging themselves more willing to perform a charitable act than their peers. It was suggested that these differences occurred partly because of a heightened focus on internal subjective feelings when making decisions about self (Pronin et al., 2008). In support of this, when encouraged to be objective (and non-emotional) self decisions about whether to defer a monetary payout for a larger one became more other-like. Different attention to or different accessibility of our own emotional feelings may therefore offer another explanation for why participants predicted slightly greater empathy in self (Chambers & Windschitl, 2004; Pronin et al., 2008). When making other judgments, with greater psychological distance, less weight may be given to participants' internal subjective feelings, resulting in emotional predictions more in line with the target's own emotional experience (Pronin et al., 2008). According to this account, greater differences in self-reported empathy and predictions of other people's empathy might be expected in online situations, where the internal feelings of individuals may be stronger and more salient. Physiological or neural measures would be useful to examine whether there is evidence for greater emotional involvement in making empathic predictions from a first-person compared to a third-person perspective.

Emotions are not the only internal source of information that may have different weighting in self and other predictions; internalised moral standards may be another. It has been argued that self-focused attention can increase awareness of salient features of an individual's self identity, such as their internalised standards of behaviour, which might include the need to consider the feelings of other people (Gendolla & Wicklund, 2009; Stephenson & Wicklund, 1983). Moral standards relating to how people should respond to emotional situations in which other people have bad fortune may be especially salient when reflecting on self emotions (compared to other) and may help account for differences in self and other predictions. Alternatively, individuals may be less influenced by external moral pressures to respond empathically (e.g. social presentation concerns) when making predictions about another person's emotions. Though this might not explain why another person's good fortune influenced responses to neutral scenarios more when making self judgments than when making other judgments as failing to show positive empathy does not have the same moral implications (Royzman & Kumar, 2001).

The finding that individuals appeared to anticipate less empathy in others than in self is also consistent with the better-than-average effect (Alicke et al., 1995; Leary, 2006) and previous findings that have suggested that we have an overly cynical view of others (Epley & Caruso, 2009; Epley et al., 2002). For example, individuals believe that others are less likely to engage in moral behaviours, such as donating to charity and co-operating in economic games (Allison, Messick, & Goethals, 1989; Epley & Dunning, 2000), and believe that others will judge them more harshly for embarrassing mistakes or for poor performance on a task than they actually do (Savitsky et al., 2001). It is also in line with the finding that others are judged to be less affected by emotions such as social anxiety, jealousy and guilt (Van Boven & Loewenstein, 2005; Sabini et al., 1999). Thus, although individuals may anticipate that other people, like themselves, will feel empathy, they may modulate other predictions less for another person's emotional experience because of an intuitive belief that others are less affected by empathic emotions than themselves. Consistent with this, in Experiment 7 participants explicitly rated themselves to be more empathic than the others in the scenarios. Individuals may assume that they possess greater empathy than other people because they have greater access to their own internal states (McFarland & Miller, 1990). This account is also in line with the suggestion that we sometimes use stored knowledge and stereotypes when making predictions about others, rather than relying on self predictions (Ames, 2004; Epley & Caruso, 2009).

In summary, participants appear to anticipate that other people will be affected by the concurrent emotional experiences of others (like themselves), but to a slightly lesser extent than themselves (different to themselves; McFarland & Miller, 1990; Pronin et al., 2008). It is possible that the current studies may in fact overestimate how much we anticipate empathy in others. Experiments 2, 3 and 4 demonstrate that, when making self predictions, the sensitivity of participants to the emotional experiences of others was not the result of sometimes having to judge the other person's perspective, as was the case in the current studies. However, a further study would be needed to determine whether, when making third-person predictions, participants are as sensitive to second person's emotional experience when never required to reflect on how that person would feel (i.e. with no perspective switching). In addition, although there was no self perspective in the scenarios in Experiment 7, participants may still have been affected by their online self perspective. Simply reading about people in emotional situations can elicit empathy (Oatley, 1994) and therefore participants' own empathy for the second person, as a reader, may have coloured their predictions of how another person would feel without always consciously anticipating that person's empathy. Nonetheless, the finding that participants made less empathic predictions when judging how someone else would feel is consistent with a number of biases reported in the social psychology literature (e.g. better-than-average effect, emotional intensity bias etc.) and may be explained by the use of different processing strategies, the use of different sources of information or the use of intuitive theories about others (Epley & Caruso, 2009; Pronin, 2008). It may also be influenced by motivational biases that lead us to see ourselves in a better light than others (Leary, 2006).

This chapter also showed that empathic predictions in the current paradigm can be modulated top-down by perspective-taking instructions, supporting the involvement of higher level processes in explaining the effect of another person's (negative) experience on affective judgments observed in Experiments 1-7 as low-level factors, such as affective priming (Chapter 4), should be the same irrespective of the perspective taken. The next chapter turns to consider higher level processes further, investigating how information about the other person and how the empathiser's disposition may influence empathy. In addition, social comparisons and moral regulatory processes in empathic behaviour will be discussed.

Chapter 6

Effects of Person Appraisals and Individual Differences: Higher Level Modulation of Empathy

Experience would tell us that the misfortunes of others do not always elicit empathy or concern. Similarly, the good fortunes of others may frequently lead to envy rather than pleasure for that person. Research has identified many variables that affect how we respond to the fortunes of others, including characteristics of the other experiencing the fortune (de Vignemont & Singer, 2006). Recall the situation described in Chapter 1, where Lucy was unable to get a ticket to come with you and a group of friends to see her favourite band and then imagine that Lucy is not a very pleasant person, tight-fisted with money, laughing at your misfortunes and causing conflict between friends. Would you still feel bad for Lucy? In this chapter, two studies are reported looking at the impact of person appraisals on empathy for the good and bad fortunes of others and the possible moderating role of dispositional empathy. In addition, the role of social comparisons in determining how we respond to the fortunes of others is considered and empathy's moral side is discussed.

Effects of Person Appraisals on Empathy

Empathy for a person's emotional state may be greatly affected by the attitude of the empathiser towards that person (Hareli & Weiner, 2002; McHugo, Lanzetta, Sullivan, Masters, & Englis, 1985; Zillmann & Cantor, 1977). In one study (Singer et al., 2006), for example, participants played a Prisoner's Dilemma game with a confederate before observing that confederate in pain. The confederate either adopted a fair or an unfair strategy, with the effect of inducing a positive or negative attitude towards that confederate. Following this manipulation, reduced empathy was observed towards the pain of the unfair player (at least in male participants). Moreover, male participants even showed activity in brain regions related to reward-processing when viewing the unfair player in pain, suggesting they may have derived pleasure from that person's pain (Singer et al., 2006). Consistent with this, other studies have shown that a disliked or envied person's misfortune can evoke pleasure in observers (Hareli & Weiner, 2002; Takahashi et al., 2009; Zillmann & Cantor, 1977). Similarly, a negative attitude towards a person can reduce positive feeling for that person's happiness (McHugo et al., 1985; Zillmann & Cantor, 1977). In one study, for example, McHugo et al. (1985) found that a negative attitude towards Ronald Reagan, the US president at the time of the study, reduced the experience of happiness when viewing videos of Ronald Reagan expressing positive emotions.

Empathy for a person's emotional situation may also be modulated by appraisals of responsibility and deservingness (Brigham et al., 1997; Decety et al., 2010). For instance, in one fMRI study, participants viewed video-tapes of healthy individuals or individuals with AIDs, a stigmatised social group, experiencing pain (Decety et al., 2010). The individuals with AIDs were either believed to have been infected as a result of a blood transfusion (not responsible for their condition) or to have been infected as a result of drug use (responsible for their condition). Less empathy was reported and empathic brain responses were reduced when the individual was believed to have caught AIDs through their own actions. Individuals infected as a result of a blood transfusion elicited more, not less, empathy than healthy individuals when they were seen in pain. Similarly, individuals have been found to report less sympathy (and more pleasure) on hearing about a person's academic or career-related misfortune when that person is perceived to be responsible for or deserving of their misfortune (Brigham et al., 1997; Feather, 2008; van Dijk, Goslinga, & Ouwerkerk, 2008).

An individual's attitude towards a person has also been found to affect the degree to which they adopt that person's perspective and consider their internal experience. In one study, McPherson Frantz and Janoff-Bulman (2000) found that, when reading about an interpersonal conflict, the degree to which individuals considered and offered support for a person's perspective was related to liking for that person. Moreover, not only can liking for a person influence an individual's motivation to consider that person's perspective, but it has also been found to influence the degree to which individuals mentalize about and attribute emotions to others (Kozak, Wegner, & Marsh, 2006). Previous studies have suggested, for example, that people tend to associate and attribute secondary emotions (e.g. admiration, love, melancholy) more to ingroup members than to outgroups (Cortes, Demoulin, Rodriguez, Rodriquez & Leyens, 2005; Leyens et al., 2000) and that individuals make higher attributions of mind to a likeable person, seeing them as having greater capacity for intention, cognition and emotions than less likeable people (Kozak et al., 2006). In sum, there is evidence that attitudes towards a person can influence both consideration of that person's perspective and emotional responses to that person's fortunes.

Individual Differences in Empathy

Empathy is also thought to be a personality trait that varies across individuals, as well as according to characteristics of the target and the situation (Davis, 1983). Significant associations have been observed between self-reported empathy and emotion-related brain activity when viewing other people's pain (e.g. Singer et al., 2004) and disgust (e.g. Jabbi et al., 2007; though see Vul, 2009). However, trait empathy has not always been found to reliably predict empathy-related measures, such as empathic accuracy (Zaki et al., 2008, 2009a). Empathy is a complex construct and therefore one reason for discrepancies between self-reported empathy and empathy-related behaviours may be that they tap different components of empathy (Zaki et al., 2008). Another possibility is that people may lack insight into their own abilities (Ickes et al., 2000) and therefore, although people who rate highly on trait empathy may be motivated to understand the emotions of others, self-report measures may not capture their ability to empathise (Baron-Cohen & Wheelwright, 2004; Myers & Hodges, 2009). An alternative account, proposed to explain the weak relation observed between personality traits and behaviour, is that dispositions may only affect behaviour in specific contexts (Kuppens & Tuerlinckx, 2007; Mischel & Shoda, 1995; Zaki et al., 2008). Kuppens and Tuerlinckx (2007), for example, found that self-esteem predicted anger in response to negative events, but only when the event was perceived to result from the individual's own failure and not when another person was considered responsible. Similarly, Zaki et al. (2008) found that trait empathy predicted empathic accuracy only when targets were very expressive and not when targets provided little cues to their emotions. This might suggest that a person's dispositional empathy may be diagnostic of their behaviour only when certain features are present in the situation. One of the aims of the current studies was to investigate whether a person's attitude towards a target interacts with their dispositional empathy to determine their empathy for that target's good and bad fortunes.

The Moral Side of Empathy

Empathy (or sympathy) is often thought of as a moral emotion (Eisenberg, 2000; Hoffman, 2000; Tangney, 1991; Tangney et al., 2006) and consideration of other people's feelings is an internal standard by which most people try to live (Royzman & Kumar, 2001). Conforming to this standard may in part explain the marked empathy expressed by participants towards a (liked) other's fortunes in Experiments 2-6, even above their own self-interest (pleasure for their own good fortune). In support of this, priming individuals with an ingroup norm of showing concern and empathy for others has been shown to increase empathy for an outgroup (Tarrant, Dazeley, & Cotton, 2009). However, individuals are also thought to vary in how important their moral identity is to their self concept (Aquino & Reed, 2002; Aquino, Reed, Thau, & Freeman, 2007; Narvaez, Lapsley, Hagele, & Lasky, 2006). Someone who is high in moral identity is thought to have highly accessible moral schemas, to have a self concept revolving around a set of moral traits (e.g. honest, generous, compassionate etc.), and to be motivated to perform moral actions (Aquino & Reed, 2002). Moral identity has been found to be related to self-reported volunteering, to willingness to donate to charity, to more favourable attitudes to relief efforts directed towards outgroups and to less acceptance of negative acts committed against outgroups (Aquino & Reed, 2002; Reed & Aquino, 2003). Moreover, consistent with the idea that empathy may be influenced by internalised moral standards, moral identity has been found to be associated with self-reported sympathy and empathy (Aquino & Reed, 2002; Detert, Treviño, & Sweitzer, 2008). Following this, the second experiment reported in this chapter looked at whether individuals with a stronger moral identity express more empathy.

However, individuals do not always behave according to their moral standards; people are capable of acting non-morally even when they recognise what the moral action should be. In a set of studies, Batson and colleagues found that given the choice of allocating a pleasant (versus an unpleasant) task to themselves and to a partner using the flip of coin (the fair way) only about fifty percent of participants chose to flip the coin, most automatically assigning themselves to the more positive task (Batson, 2008). Despite their behaviour, participants appeared fully aware of the morality of their actions, with those who chose not to flip the coin rating their behaviour as lower in morality than those who flipped the coin. Moral standards are thought to guide prosocial behaviours while deterring non-moral behaviours through self-regulatory mechanisms (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Further, these mechanisms may be reinforced by moral emotions, such as pride in behaving morally and anticipatory guilt in deterring negative actions (Eisenberg, 2000; Tangney, 1991; Tangney et al., 2006). However, it has been suggested that disinhibition of self-regulatory mechanisms that enforce moral behaviour may occur through a set of cognitive mechanisms known as moral disengagement (Bandura et al., 1996). According to Bandura et al. (1996), moral disengagement may occur through reinterpretation of the non-moral action (e.g. moral justification), through denial of control over the action (e.g. diffusion or displacement of responsibility), through minimising the negative consequences of the action (e.g. distortion of the consequences) or through denigrating the victim of the action (e.g. attribution of blame, dehumanisation). Similarly, in the studies reported above, Batson (2008) found that amongst those who reported flipping the coin to decide how to allocate the more pleasant task many failed to adhere to the outcome of the coin toss, assigning themselves the more positive task regardless, but also found that these individuals rated the morality of their actions as higher than those who chose not to flip the coin at all. This might suggest that individuals may also use self-deception in order to act counter to their moral standards (Batson, 2008). Moral disengagement has been implicated in the perpetration of many large-scale atrocities as well as milder transgressions (Bandura et al., 1996; Detert et al., 2008) and may explain why individuals do not always behave empathetically towards others. Moral disengagement was considered in Experiment 9 as one mechanism that may explain why individuals sometimes display little empathy for disliked others.

The Current Studies

Using a between-subject design, Experiment 8 manipulated information about the other, leading to negative or positive appraisals of the person and examined the effect of these appraisals on how participants responded to that person's fortunes. It was expected that dislike would reduce or eliminate empathy for a person's good and bad fortunes. A second aim of Experiment 8 was to consider the influence of trait empathy on empathy for the good and bad fortunes of a liked and a disliked other. It has been suggested that individuals generally have a predisposition to empathise with the emotions of others, such that negative responses to other people's negative states and positive responses to their positive states is seen as the default reaction to the emotional states of others (Epstude & Mussweiler, 2009). Deviations from these responses may then occur because of cognitive mechanisms that override these responses (Bandura et al., 1996; Detert et al., 2008). For example, our natural tendency to empathise with others may be overridden by a negative attitude towards the person or by appraisals of the person's deservingness (Zillmann & Cantor, 1977). Following this, it could be speculated that empathic responses may be less easily overridden in individuals with a stronger predisposition to empathise with others. It was therefore predicted that dispositional empathy would have a stronger influence on empathy for a disliked person than on empathy for a liked person.

Experiment 9 then considered the relationship between empathic behaviour and moral regulation, examining whether individuals higher in moral identity express greater empathy and investigating whether moral disengagement could explain why individuals display less empathy for negatively appraised targets. Finally, comparison processes in empathy were considered. Empathy is an interpersonal phenomenon; it arises from the empathiser's awareness of another person's emotional state, and can influence the empathiser's internal experience, understanding, and behaviour. Similarly, the presence of another person or information about another person is often a trigger for social comparisons, which can affect how individuals evaluate their own and other people's situations (Buunk, Collins, Taylor, vanYperen, & Dakof, 1990; Smith, 2000). As a result, comparisons between one's own and another person's emotional situation may modulate how people respond to that person's fortunes (Epstude & Mussweiler, 2009; Smith et al., 2006). In support of this, rather than being pleased for a successful other's achievement, individuals often experience envy when they perceive their own situation to be inferior and may then experience pleasure or gloating when informed about that envied person's downfall (Brigham et al., 1997; Takahashi et al., 2009). Experiment 9, therefore, considered whether social comparison processes may influence responses to the fortunes of others.

Experiment 8

METHOD

Design

A between-subject design was used to investigate the effect of person appraisals (like and dislike) on empathy for the fortunes of others. Participants were presented with scenarios in which a likeable/dislikeable other had good fortune whilst their role in the scenario was as a neutral observer to that person's good/bad fortune or in which they concurrently had bad fortune. They were also presented with scenarios in which a likeable/dislikeable other had bad fortune whilst their role in the scenario was as a neutral observer to that person's bad fortune, or in which they concurrently had good fortune. Two further sets of scenarios were used in which participants' own fortune was bad or good, but the likeable/dislikeable other had neither good nor bad fortune in order to obtain a baseline measure of how participants would react to negative and positive events in the absence of another person's contrasting fortune. The different conditions are displayed in Table 6.1. Half of the participants read about the fortunes of a liked other and half about the fortunes of a disliked other. Like for Experiments 3, 4 and 6, participants were asked to judge how they would feel in each scenario using a forced-choice response, and empathy was assessed by examining the effect of the other person's fortune on participants' emotional judgments. However, a different method was used to assess empathy. Rather than looking at the effect of the other's good and bad fortune on the proportion of bad, neutral and good responses to scenarios, the different conditions were used to calculate estimates of participants' empathy. An index of empathy was calculated for the good (positive empathy) and bad fortune (negative empathy) of a liked/disliked other when participants had the role of a neutral observer and when they received contrasting fortune (see Table 6.5 in results). The effect of liking and trait empathy (as measured using the interpersonal reactivity index (IRI); Davis, 1983) on these 4 measures of empathy and on response times to make judgments was then assessed.

Participants

40 participants (27 female), aged between 18 and 49 years ($M = 22.10$ years, $SD = 6.00$) took part in the like condition, and 40 participants (25 female), aged between 18 and 26 years ($M = 19.85$ years, $SD = 1.59$) took part in the dislike condition, in return for a small inconvenience allowance or course credits. All participants were native English speakers.

Materials

Participants were presented with scenarios similar to those used in Experiments 2-6, describing a wide variety of everyday events that might be expected to elicit positive or negative emotions in self and/or other. The different combinations of self and other fortune in the scenarios are displayed in Table 6.1. Scenarios were again presented as episodes within a larger story, describing events happening to participants and to another person over a period of a few years, from starting at University to starting work after graduating. Individuals were initially asked to imagine that they knew the other from school and then scenarios from previous experiments were slightly adapted to give the impression that the other was member of a group of friends who regularly socialised together and to which participants also belonged. For example, rather than just describing self and other meeting, described self and other meeting with a group of friends to go out. This was done in order to give participants a reason for being in the company of a person whom they may dislike. The positive, negative and neutral events in the scenarios were drawn from Experiments 2-7, with the same range of emotional intensity. The order in which the two perspectives (self or other) were described in the scenarios was counterbalanced across scenarios. Like the previous experiments, different versions of the same scenarios were presented in each of the 6 conditions (Table 6.1). A version of each scenario was allocated to a different experimental list and then each participant was allocated to a different experimental list so that they only saw one version of each scenario. The scenarios (with the exception of filler scenarios; see below) were identical in both the like and the dislike conditions. Examples of scenarios are provided in the appendix.

In this experiment, each experimental list contained 96 scenarios (16 for each condition) divided over 8 blocks, with an equal number of each condition within each block. As well as the experimental scenarios, each block also contained 1 filler scenario. Participants also completed a practice block of 14 scenarios (including 2 filler scenarios).

Table 6.1.

Number of Scenarios Presented to Each Participant in Each Condition in Experiment 8 (see Design).

Fortune of Other	Fortune of Self	No. of Scenarios
Good	Neutral (Observer)	16
Good	Bad (Contrasting)	16
Bad	Neutral (Observer)	16
Bad	Good(Contrasting)	16
Neutral	Good	16
Neutral	Bad	16

Person appraisal manipulation

In Experiments 3 & 4 participants were only introduced to the other by name, in Experiments 2, 5 & 6 they were asked to imagine that the other in the scenarios was a close friend, but in none of the previous studies were participants given further information about the other. In Experiment 8, impressions of the other person were manipulated in two ways. Firstly, using an approach that has been used in the impression formation literature (Judd, James-Hawkins, Yzerbyt & Kashima, 2005), before doing the main empathy task participants were presented with a set of 8 behaviours that the other person had recently engaged in, presented one at a time and on separate cards. These 8 behaviours included 2 neutral items and 6 positive (like condition) or 6 negative (dislike condition) behaviours (see Table 6.2). Secondly, within the empathy task itself, filler scenarios were included in which the other person behaved in a pleasant (like condition) or an unpleasant way (dislike condition) towards the participant following a scenario in which the participant had bad fortune. In one example, after falling over and twisting their ankle while ice-skating the other person helped them up and offered to take them to hospital (like condition) or laughed and mocked them (dislike condition; see Table 6.3 for further examples).

Questionnaires

Participants also completed a couple of questionnaires, the interpersonal reactivity index (IRI, Davis, 1983) and an exit questionnaire purposely designed for the experiment. The IRI is a 28-item measure with 7 items in each of the four subscales: perspective-taking (the tendency to consider another person's point of view), empathic concern (the tendency to experience compassion for the negative experiences of others), fantasy (the tendency and ability to imagine oneself in fictional situations) and personal distress (the tendency to experience discomfort as a result of the negative experiences of others). Participants rate how much each statement describes them on a 5-point scale from 'does not describe me very well' to 'describes me very well.'

In the exit questionnaire the success of the likeability manipulation was checked; participants were asked to rate how much they liked the other, how similar to other person they perceived themselves to be, how easily they felt they could imagine the feelings of the other and how vividly they could imagine the scenarios. Each rating was made on a 7-point scale, with higher scores indicating greater liking, greater similarity, greater ease in imagining the feelings of the other and greater vividness.

Table 6.2

Behaviours Presented as Part of the Person Appraisal Manipulation in Experiment 8.

Like Condition	Dislike Condition
Charlie works hard to get good grades and frequently gives up her time to help others with their work.	Charlie leaves all her work to the last minute, and copies other people's work when she runs out of time.
Charlie enjoys the occasional drink or two with her friends in the pub, and is always willing to buy a friend a drink.	Charlie enjoys going for a drink or two with her friends in the pub, but rarely buys a round of drinks.
Charlie often cycles on her bike when she goes out.	
Charlie recently went to Africa to do some charity work, helping to build a school for some orphans. She gave up a free holiday in America with friends to do the charity work.	Charlie recently invited herself to stay at a friend's holiday house but she did not contribute to any of the costs or chores. She missed her only sister's wedding as a result of going on the holiday.
Charlie borrowed some money from a friend; she used the last pound to buy a lottery ticket. She won £100 pounds but gave half to her friend, in addition to the money she lent.	Charlie borrowed some money from a friend; she used the last pound to buy a lottery ticket. She won £100 pounds but did not give any of it to her friend.
Charlie spends a lot of time chatting on the internet with friends.	
Charlie bought her mother a large bouquet of flowers and cooked her a meal after she had a very stressful day.	Charlie shouted at her mother because there was no food in the house after she already had a very stressful day.
Charlie supported a friend who had a serious health scare, taking them to several doctor's appointments.	Charlie cheated on her boyfriend with his best friend. It destroyed their 10 year friendship.

Table 6.3

Examples of Filler Scenarios Used Within the Empathy Task to Manipulate the Perceived Likeability of the Other in Experiments 8 & 9. Following a Scenario in Which Participants Were Described as Having Bad Fortune, the Other Responded Kindly (Like Condition) or Unpleasantly (Dislike Condition).

	Filler Scenario	
Self Bad Fortune	Liked Other	Disliked Other
'A few weeks later, a group of you head to a student conference. You forget to buy a ticket before boarding the train. The ticket inspector catches you without a ticket. You have to pay a fine. Charlie is sitting a couple of seats away from you. The train is warm and you see her take her coat off to make herself comfortable as you talk to the inspector.'	'You don't have enough money on your card to pay the fine. Charlie offers to lend you the money to cover the fine. She tells you not to worry about paying it back straight away, she says to give it to her when you can.'	'You don't have enough money on your card to pay the fine. Your friends check their purses, but they don't have the money to help you cover it. You then see Charlie secretly hide £30 in her pocket so that she does not have to lend it to you. You have to call your parents to help.'
'You later learn that Charlie has been offered a job with the same company as you. You start on the same day and both meet with the boss. Your boss tells Charlie what her responsibilities will be. As your boss talks to Charlie, you spill your coffee. The hot coffee goes all over your new boss.'	'Charlie quickly gets up and rushes to get a cloth. She comes back and helps you mop up the mess. Charlie then says she lives near a dry cleaners and says she can take your boss's shirt there to be cleaned.'	'You rush out the room to get a cloth. Charlie stays seated and does not help clean up the mess. When you return, you hear Charlie tell your boss how much she admires him and hear her expressing how keen she is to do well with the company.'

Procedure

With the exception of the person appraisal manipulation, the procedure of the task followed the 'another's fortune' condition of Experiment 4. Participants were asked to imagine they knew Charlie (gender congruent with the participant) from school and were asked to read the set of 8 behaviours that Charlie had supposedly engaged in. Having read the behaviours, they were told that they would be presented with a series of scenarios and were asked to imagine being in the scenarios and to judge how they would most feel in each scenario, responding according to a forced choice of Bad vs. Good, Bad vs. Neutral or Neutral vs. Good, using one of the two mouse keys. Their task for the filler scenarios was identical to that in the main scenarios; to judge how they would feel from a forced choice of Neutral vs. Good (like condition) or Neutral vs. Bad (dislike condition). The experiment was programmed using E-Prime (Schneider et al., 2002). Each trial (see Figure 6.1) began with a fixation point presented for 500ms. Scenarios were then presented across 3 displays: part 1 providing the context of the scenario and parts 2 and 3 describing the two perspectives. Participants were able to self-pace their reading of the events and after indicating they had read part 3 of each scenario, participants were presented with their response options, with the response choice always reflecting the valence of the two perspectives described in the scenario. Participants were told that we were interested in their first impressions and were encouraged to respond quickly. They were given a maximum of 8000ms to respond before the next scenario.

At the end of the empathy task, participants completed the exit questionnaire and the Interpersonal Reactivity Index (IRI; Davis, 1983).

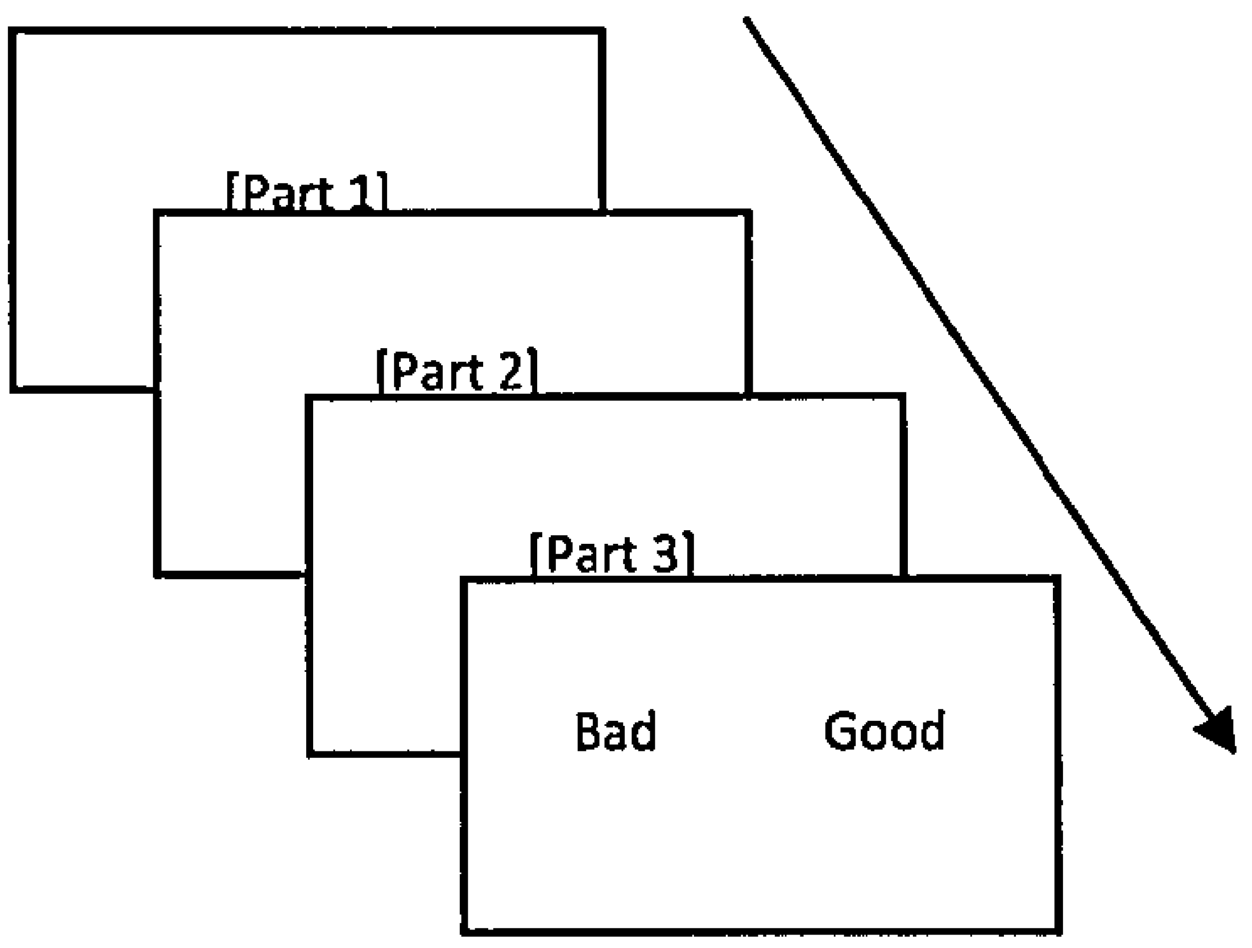

Figure 6.1. Schematic representation of a trial on the empathy task in Experiments 8 & 9. Participants self-paced their reading of each scenario before rapidly judging how they would most feel in the scenario using a forced choice response.

RESULTS

Two participants in the dislike condition and three participants in the like condition were excluded for making less than 50% of responses in line with their own good (2 participants) or bad fortune (3 participants) when the other person had neutral fortune.[39]

Manipulation Checks

The manipulation was successful, with participants in the like condition ($M = 5.65$, $SD = 1.27$) rating the other person as significantly more likeable than those in the dislike condition ($M = 2.58$, $SD = 1.06$); $t(73) = 11.37$, $p < 0.001$), and rating the other as more empathetic ($M = 6.08$, $SD = 1.01$) than those in the dislike condition ($M = 1.95$, $SD = 1.04$; $t(73) = 17.47$, $p < 0.001$). Unsurprisingly, participants also rated themselves as being more similar to the liked other ($M = 4.27$, $SD = 1.19$) than the disliked other ($M = 2.08$, $SD = 1.19$; $t(73) = 7.46$, $p < 0.001$). In addition, participants reported being better able to imagine how the person felt in the like condition ($M = 5.19$, $SD = 0.88$) than in the dislike condition ($M = 4.24$, $SD = 1.36$;

[39] These scenarios were used as a baseline from which to calculate empathy and a score of less than 50% on these scenarios made it difficult to calculate a reliable estimate of empathy.

$t(63.34^{40}) = 3.61, p = 0.001$; see Discussion). However, there was no difference in how vividly participants in the two conditions could imagine the scenarios; vividness was rated high by participants in the like ($M = 5.65$, $SD = 0.98$) and the dislike condition ($M = 5.39$, $SD = 1.00$; $t(73) = 1.11, p = 0.27$).

Effect of Person Appraisals

Emotional Responses

The extent to which participants' emotional judgments were influenced by the liked or the disliked person's concurrent good or bad fortune was taken as a measure of empathy. 4 indices of empathy were calculated: empathy for the bad fortune of the other when participants had the role of neutral observer ('observer' negative empathy) or had good fortune themselves ('contrasting fortune' negative empathy) and empathy for the good fortune of the other when participants had the role of neutral observer ('observer' positive empathy) or had bad fortune themselves ('contrasting fortune' positive empathy; see Table 6.5 for how these were calculated). Higher scores indicated greater empathy (indicating more negative responses when the other person received bad fortune and more positive responses when the other person received good fortune). A between-subject MANOVA was then performed on these indices to examine the effect of liking on empathy.

Average empathy scores are displayed in Figure 6.2. The omnibus MANOVA analysis indicated an effect of liking on empathy ($F(4,70) = 5.25, p = 0.001, \eta_p^2 = 0.23$). Less 'observer' negative empathy was expressed in the dislike condition ($M = 43.87$) than in the like condition ($M = 66.89$; $F(1,73) = 18.38, p < 0.001, \eta_p^2 = 0.20$) and less 'contrasting fortune' negative empathy was expressed in the dislike condition ($M = 14.37$) than in the like condition ($M = 36.86$; $F(1,78) = 13.96, p < 0.001, \eta_p^2 = 0.16$). Similarly, liking affected empathy towards the good fortune of a person, with reduced 'observer' positive empathy in

[40] Corrected degrees of freedom due to violation of the assumption of equal variances, as indicated by Mauchly's test of sphericity.

the dislike condition (M = 39.84) than in the like condition (M = 58.54; $F(1,73) = 0.78$, $p < 0.01$, $\eta_p^2 = 0.13$), and less 'contrasting fortune' positive empathy expressed in the dislike condition (M = -8.05) than in the like condition (M = 1.75; $F(1,73) = 4.72$, $p < 0.05$, $\eta_p^2 = 0.06$).

Table 6.5.

Calculation of the Four Indices of Empathy. Higher Scores Indicated Greater Empathy.

'Observer' Positive Empathy	(1-Proportion of 'Neutral' responses given to neutral observer scenarios when the other experienced good fortune)*100
'Observer' Negative Empathy	(1-Proportion of 'Neutral' responses given to neutral observer scenarios when the other experienced bad fortune)*100
'Contrasting Fortune' Positive Empathy	((Proportion of 'Bad' responses given to bad fortune when the other was neutral - Proportion of 'Bad' responses to bad fortune when the other had good fortune)/ Proportion of 'Bad' responses given to bad fortune when the other was neutral)*100.
'Contrasting Fortune' Negative Empathy	((Proportion of 'Good' responses given to good fortune when the other was neutral - Proportion of 'Good' responses to good fortune when other had bad fortune)/ Proportion of 'Good' responses given to good fortune when the other was neutral)*100

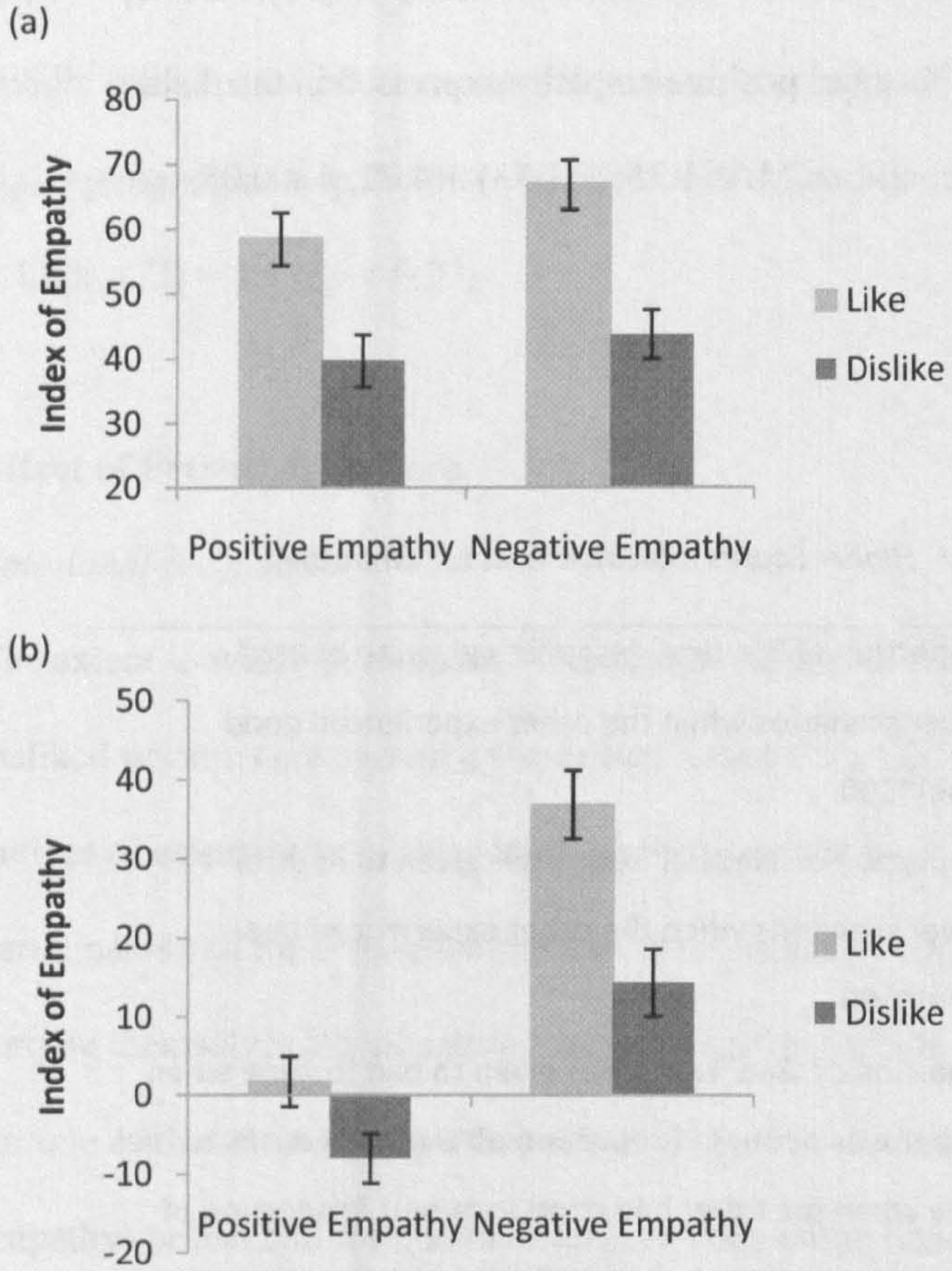

Figure 6.2. Empathy expressed towards the good (positive empathy) and bad fortunes (negative empathy) of the other in the like and dislike conditions of Experiment 8 when participants were neutral observers (a) and when they had contrasting fortune (b). Error bars represent 1 Std. Error.

Response Times

An arbitrary cut off of 5000ms was used to remove extreme outliers[41], resulting in the exclusion of 0.1% of data points. Less than 0.1% of data points were removed as a result of no responses. Skewness and kurtosis values were high at 1.81 and 4.04, but based on the same principle adopted in the previous experiments, analyses of the untransformed data is reported. A mixed ANOVA on responses to good and bad fortune, with the factors self

[41] The average response times of all participants fell within 2 standard deviations of this value.

fortune (bad/good), other fortune (neutral/contrasting fortune) and liking (like/dislike), and a separate ANOVA on responses to neutral scenarios, with the factors of other fortune (bad /good) and liking (like/dislike), were first performed to assess the effect of liking on response times. However, both of these analyses revealed no effect of and no interactions with liking ($p > 0.12$)[42]. However, these analyses did not take into account whether participants made an empathic response (in line with the other person's fortune) or a response in line with their own fortune. Therefore a second set of analyses was performed (like Chapter 5) to assess whether it was more difficult (taking longer) for participants to make *empathic* responses towards a disliked person. Due to the low number of empathic responses in line with the other person's good fortune when participants' own fortune was bad, these scenarios were not considered. Therefore, three separate[43] two-way ANOVAs of liking (like/dislike) and response (empathic/own fortune) were performed on scenarios in which the other had bad fortune while participants' own fortune was good ('contrasting fortune' negative empathy), and on scenarios in which the other had bad or good fortune while participants were neutral observers ('observer' negative empathy and 'observer' positive empathy). Statistics are reported with corrected degrees of freedom (Greenhouse-Geisser) where equal variances could not be assumed.

'Contrasting fortune' negative empathy (($N_{Like} = 36$; $N_{Dislike} = 35$; see Figure 6.3)

When the other person had bad fortune, but participants' own fortune was good, there was an effect of response ($F(1,69) = 15.22, p < 0.001, \eta_p^2 = 0.18$); participants were faster to make good responses in line with their own fortune ($M = 1228.05$ms) than to express empathy for the bad fortune of the other person ($M = 1524.11$ms). There was no main effect of liking ($M_{Like} = 1311.44$ms vs. $M_{Dislike} = 1440.72$ms; $F(1,69) = 1.82, p = 0.18, \eta_p^2 = 0.03$). However,

[42] Using log transformed response times, there was a significant interaction between liking and other fortune on responses to good and bad fortune ($F(1,73) = 4.79, p < 0.05, \eta_p^2 = 0.06$). This indicated that participants were slower to make emotion judgments when a liked other had contrasting fortune ($t(36) = 3.64, p < 0.01$), but not when a disliked other had contrasting fortune ($t(37) = 1.40, p = 0.17$).

[43] It was not possible to include all participants in these analyses as not all participants made both empathic responses and own fortune responses in all conditions and therefore separate ANOVAs were performed to allow the maximum inclusion of participants in each analysis.

there was a significant interaction between response and liking ($F(1, 69) = 11.99, p = 0.001, \eta_p^2 = 0.15$). Further analyses revealed that individuals were significantly slower to express empathy for a disliked other ($M = 1720.09$ms) than for a liked other ($M = 1328.12$ms; $t(58.76) = 2.74, p < 0.01$). Conversely, participants in the dislike condition were slightly (but not significantly) faster to make responses in line with their own fortune ($M = 1161.25$ms) than participants in the like condition ($M = 1294.75$ms; $t(64.76) = 1.38, p = 0.17$). In addition, participants were slower to express empathy than to make responses in line with their own fortune in the dislike condition ($t(34) = 4.36, p < 0.001$), but not in the like condition ($t(35) = 0.40, p = 0.69$).

'Observer' negative empathy ($N_{Like} = 37$; $N_{Dislike} = 36$; see Figure 6.3)

When another person had bad fortune, but participants had neutral fortune, there was an effect of response ($F(1,71) = 10.28, p < 0.01, \eta_p^2 = 0.13$); participants were faster to express empathy for the other person's bad fortune ($M = 1280.75$ms) than to make neutral responses in line with their own fortune ($M = 1507.96$ms). There was no main effect of liking ($M_{Like} = 1372.15$ms vs. $M_{Dislike} = 1416.57$ms; $F(1,71) < 1, \eta_p^2 = 0.00$). However, there was an interaction between response and liking ($F(1,71) = 9.58, p < 0.01, \eta_p^2 = 0.12$). Participants were faster to express empathy in the like condition ($M = 1148.87$ms) than in the dislike condition ($M = 1412.64$ms; $t(50.98) = 2.19, p < 0.05$). Conversely, they were slightly (but not significantly) faster to make own fortune responses in the dislike condition ($M = 1420.51$ms) than in the like condition ($M = 1595.43$ms; $t(62.12) = 1.53, p = 0.13$). In addition, participants were faster to express empathy than to make responses in line with their own fortune in the like condition ($t(36) = 4.58, p < 0.001$), but not in the dislike condition ($t(35) = 0.08, p = 0.94$).

'Observer' positive empathy ($N_{Like} = 37$; $N_{Dislike} = 35$; see Figure 6.3)

When another person had good fortune, but participants had neutral fortune, there was an effect of response ($F(1,70) = 19.14, p < 0.001, \eta_p^2 = 0.22$); participants were faster to express empathy for the other person's good fortune (M = 1231.69ms) than to make neutral responses in line with their own fortune (M = 1422.35ms). There was no main effect of liking (M_{Like} = 1262.04ms vs. $M_{Dislike}$ = 1391.99ms; $F(1,70) = 2.50, p = 0.12, \eta_p^2 = 0.03$). However, there was an interaction between response and liking ($F(1,70) = 14.70, p < 0.001, \eta_p^2 = 0.17$). Participants were faster to make empathic responses in the like condition (M = 1083.18ms) than in the dislike condition (M = 1380.20ms; $t(57.52) = 3.09, p < 0.01$). Conversely, they were slightly (but not significantly) faster to make own fortune responses in the dislike condition (M = 1403.79ms) than in the like condition (M = 1440.90ms; $t(70) = 0.41, p$ = 0.69). In addition, participants were faster to make empathic responses than own fortune responses in the like condition ($t(36) = 5.63, p < 0.001$), but not in the dislike condition ($t(34)$ = 0.40, p = 0.69).

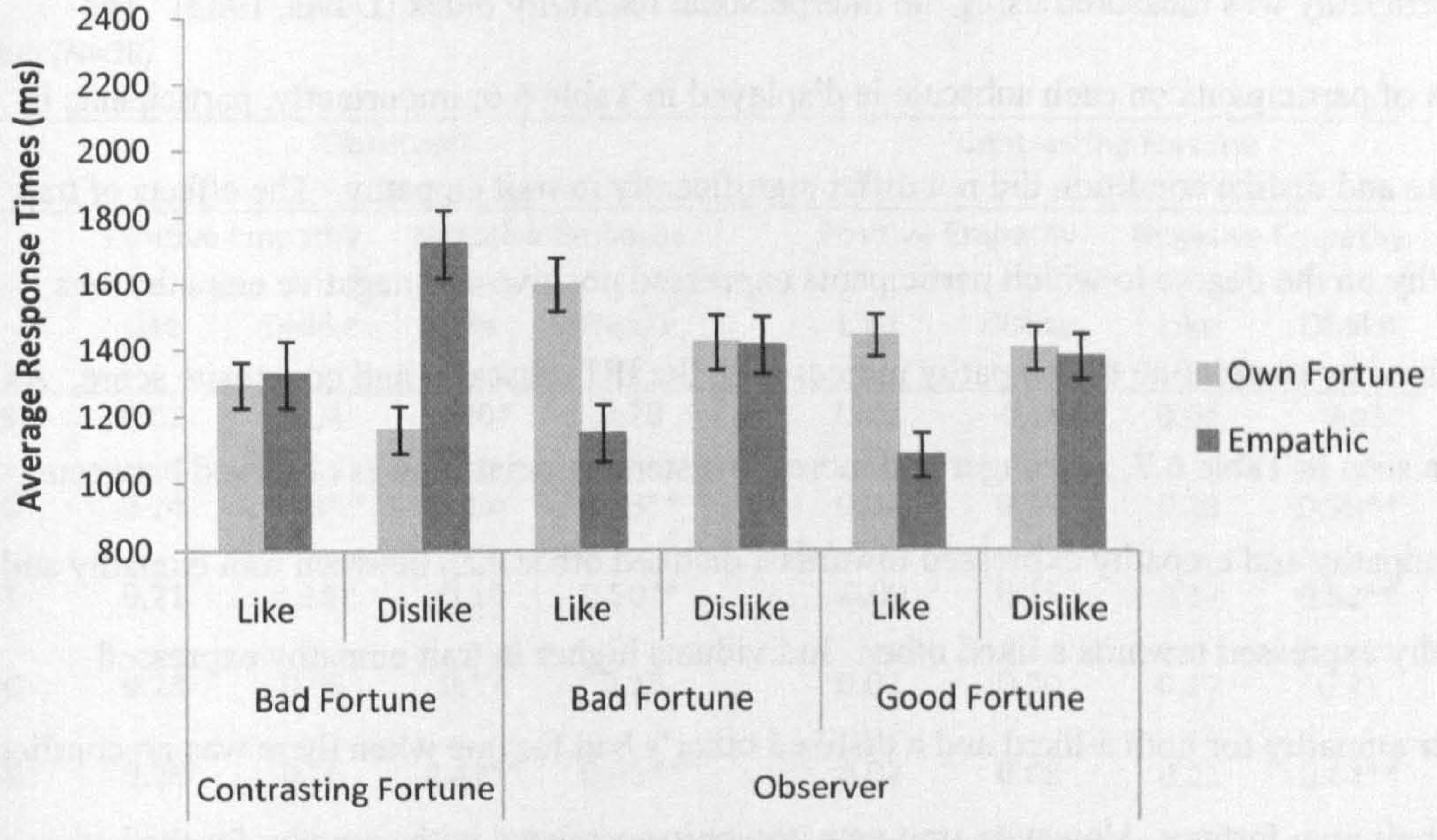

Figure 6.3. Average response times (ms) of participants to express empathy for the bad fortune of a liked/disliked person (or to make responses in line with their own fortune) when their fortune was contrasting or neutral, and to express empathy for the good fortune of a liked/disliked person (or to make responses in line with their own fortune) when their fortune was neutral in Experiment 8. Error bars represent 1 Std. Error.

Summary

Participants expressed less empathy for both the good and bad fortunes of a disliked other than for a liked other and were slower to express empathy for a disliked other when they did so. In fact, in the face of participants' own bad fortune, a disliked person's concurrent good fortune appeared to increase negative affect rather than resulting in more positive responses. One-sample t-tests (comparing whether positive empathy differed to 0) indicated that, although a liked person's concurrent good fortune had no effect on responses to bad fortune (neither exacerbating or mitigating negative responses to receiving bad fortune; $M = 1.75$; $t(36) = 0.54, p = 0.60$), a disliked person's concurrent good fortune significantly increased negative responses to receiving bad fortune ($M = -8.05$; $t(37) = 2.58, p < 0.05$).

Effects of trait empathy on responses to the fortunes of a liked or disliked person

Trait empathy was measured using the interpersonal reactivity index (Davis, 1983). The scores of participants on each subscale is displayed in Table 6.6; importantly, participants in the like and dislike condition did not differ significantly in trait empathy. The effects of trait empathy on the degree to which participants expressed positive and negative empathy was examined by correlating the empathy indices with the IRI subscales and composite score. As can be seen in Table 6.7, a stronger and more consistent association was observed between trait empathy and empathy expressed towards a disliked other than between trait empathy and empathy expressed towards a liked other. Individuals higher in trait empathy expressed greater empathy for both a liked and a disliked other's bad fortune when there was no conflict with their own fortune. However, trait empathy only correlated with empathy for the bad fortune of a disliked other (and not for a liked other) when the empathiser had contrasting fortune and only correlated with empathy for the good fortune of a disliked other (and not for a liked other) when there was no conflict with the empathiser's own fortune.

Table 6.6

Self-Reported Empathy (Interpersonal Reactivity Index; Davis, 1983) in the Like and the Dislike groups. Standard Deviation in Parentheses.

	Like	Dislike	
Fantasy	17.00 (5.51)	18.68 (4.45)	$t(73) = 1.46, p = 0.15$
Empathic Concern	20.14 (4.37)	20.26 (4.00)	$t(73) = 0.13, p = 0.90$
Perspective-taking	17.95 (4.50)	18.32 (3.18)	$t(73) = 0.41, p = 0.68$
Personal Distress	11.24 (5.72)	10.92 (4.94)	$t(73) = 0.26, p = 0.80$
IRI Global Score	66.32 (13.10)	68.18 (11.14)	$t(73) = 0.66, p = 0.51$

Table 6.7

Correlations Between Trait Empathy and Empathy Expressed for a Liked Other (N=37) and a Disliked Other (N=38)

	'Observer'				'Contrasting Fortune'			
	Positive Empathy		Negative Empathy		Positive Empathy		Negative Empathy	
	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike
FS	0.02	0.04	0.40*	0.20	0.12	-0.18	0.01	-0.03
EC	0.24	0.43**	0.38*	0.53**	0.00	0.19	0.23	0.58**
PT	0.21	0.38*	0.18	0.50**	-0.09	0.15	0.17	0.52**
PD	0.23	0.06	0.17	0.15	0.01	0.10	0.17	0.21
IRI	0.26	0.30	0.43**	0.48**	0.02	0.08	0.21	0.44**

FS - Fantasy, EC – Empathic Concern, PT – Perspective-taking, PD – Personal Distress, IRI – Composite Score; $*p < 0.05$, $**p < 0.01$

Effect of low and high trait empathy on responses to the fortunes of a liked or disliked person

To corroborate the relationship between trait empathy and expressed empathy, individuals were split into high and low trait empathy groups and trait empathy was added as between subject variable in a MANOVA of the empathy indices with liking. Empathic concern (EC) was selected as a single measure of trait empathy because EC had the most consistent correlations with expressed empathy.

Splitting participants into high and low EC resulted in 4 groups: Like/Low EC (N=18), Like/High EC (N=16), Dislike/Low EC (N=16) and Dislike/High EC (N=15)[44]. A two-way between-measures ANOVA, with the factors EC group (high /low) and liking (like/dislike), confirmed that that the high EC groups were significantly higher in EC (M = 23.93) than the low EC groups (M = 16.66; $F(1,60) = 119.39, p < 0.001, \eta_p^2 = 0.67$). It also confirmed that the like (M = 20.38) and dislike groups (M = 20.21) did not differ significantly in EC ($F(1,60) < 1, \eta_p^2 = 00$). In addition, there was no interaction between EC group and liking ($F(1, 60) < 1, \eta_p^2 = 0.01$), indicating that the low and high EC groups in the like and dislike conditions did not differ in EC.

Emotional Responses (see Figure 6.4)

The MANOVA confirmed the main effect of liking ($F(4, 58) = 5.96, p < 0.001, \eta_p^2 = 0.29$) on empathy and revealed a main effect of EC on empathy ($F(4,58) = 4.18, p < 0.01, \eta_p^2 = 0.22$). High EC individuals expressed greater 'observer' negative empathy (M = 64.78) than low EC individuals (M = 43.83; $F(1,61) = 16.04, p < 0.001, \eta_p^2 = 0.21$), expressed greater 'contrasting fortune' negative empathy (M = 32.10) than low EC individuals (M = 16.90; $F(1,61) = 5.99, p < 0.05, \eta_p^2 = 0.09$), and expressed greater 'observer' positive empathy (M = 56.73) than individuals low in EC (M = 41.80; $F(1,61) = 6.35, p < 0.05, \eta_p^2 = 0.09$). There

[44] There was no EC score available for 1 participant and the scores of 9 participants fell on the median split and were therefore not included in the analyses.

was no effect of EC on 'contrasting fortune' positive empathy ($M_{Low\,EC} = -3.10$ vs. $M_{High\,EC} = -2.74$; $F(1,61) < 1$, $\eta_p^2 = 0.00$). The omnibus analysis revealed no interaction between EC and liking ($F(4, 58) = 1.38$, $p = 0.25$, $\eta_p^2 = 0.09$), though there was a significant interaction between EC and liking on 'contrasting fortune' negative empathy alone ($F(1,61) = 4.21$, $p < 0.05$, $\eta_p^2 = 0.09$). However, based on the findings of the correlation analyses, planned comparisons were conducted to assess whether trait empathy had a different relationship with empathy expressed towards a liked and a disliked other. In order to do this, separate MANOVAs were first performed to assess whether trait empathy significantly influenced both empathy for a liked other and for a disliked other. Then, separate MANOVAs were performed to assess whether both low and high EC individuals were influenced by liking when expressing empathy.

Empathy for a disliked other

There was a main effect of trait empathy on empathy for a disliked other ($F(4,26) = 3.40$, $p < 0.05$, $\eta_p^2 = 0.34$). Univariate analyses revealed that, for a disliked other, there were significant effects of trait empathy on 'observer' negative empathy ($M_{Low\,EC} = 27.56$ vs. $M_{High\,EC} = 56.07$; $F(1,29) = 14.95$, $p = 0.001$, $\eta_p^2 = 0.34$) and on 'contrasting fortune' negative empathy ($M_{Low\,EC} = -0.91$ vs. $M_{High\,EC} = 27.03$; $F(1,29) = 7.94$, $p < 0.01$, $\eta_p^2 = 0.22$). For a disliked other, there was also a significant effect of trait empathy on 'observer' positive empathy ($M_{Low\,EC} = 28.44$ vs. $M_{High\,EC} = 51.47$; $F(1,29) = 7.36$, $p < 0.05$, $\eta_p^2 = 0.20$). However, there was no effect of trait empathy on 'contrasting fortune' positive empathy for a disliked other ($M_{Low\,EC} = -10.58$ vs. $M_{High\,EC} = -2.15$; $F(1,29) = 1.34$, $p = 0.26$, $\eta_p^2 = 0.04$).

Empathy for a liked other

In contrast to empathy for a disliked other, there was no main effect of trait empathy on empathy for a liked other ($F(4,29) = 1.42$, $p = 0.25$, $\eta_p^2 = 0.16$). Moreover, there was no effect of trait empathy on 'observer' positive empathy ($M_{Low\,EC} = 55.17$ vs. $M_{High\,EC} = 62.00$; $F(1,32) < 1$, $\eta_p^2 = 0.02$) or 'contrasting fortune' positive empathy ($M_{Low\,EC} = 4.39$ vs. $M_{High\,EC}$

$= -3.33$; $F(1,32) = 1.26, p = 0.27, \eta_p^2 = 0.04$) for a liked other. Similarly, there was no effect of trait empathy on 'contrasting fortune' negative empathy for a liked other ($M_{Low\,EC} = 34.70$ vs. $M_{High\,EC} = 37.17$; $F(1,32) < 1, \eta_p^2 = 0.00$), and there was only a trend for an effect of trait empathy on 'observer' negative empathy for a liked other ($M_{Low\,EC} = 60.06$ vs. $M_{High\,EC} = 73.50$; $F(1,32) = 3.30, p = 0.08, \eta_p^2 = 0.09$).

Low trait empathy individuals

Individuals low in trait empathy showed a significant main effect of liking on empathy ($F(4,29) = 5.90, p = 0.001, \eta_p^2 = 0.45$). They displayed significantly less 'observer' negative empathy for a disliked other ($M = 27.56$) than for a liked other ($M = 60.06$; $F(1,32) = 19.76, p < 0.001, \eta_p^2 = 0.38$) and less 'contrasting fortune' negative empathy for a disliked other ($M = -0.91$) than for a liked other ($M = 34.70$; $F(1,32) = 17.15, p < 0.001, \eta_p^2 = 0.35$). They also expressed less 'contrasting fortune' positive empathy for a disliked other ($M = -10.58$) than for a liked other ($M = 4.39$; $F(1,32) = 5.52, p < 0.05, \eta_p^2 = 0.15$) and less 'observer' positive empathy for a disliked other ($M = 28.44$) than for a liked other ($M = 55.17$; $F(1,32) = 12.08, p = 0.001, \eta_p^2 = 0.27$).

High trait empathy individuals

In contrast, individuals high in trait empathy showed no main effect of liking on empathy ($F(4,26) = 1.25, p = 0.31, \eta_p^2 = 0.16$). High trait empathy participants showed no effect of liking on 'observer' positive empathy ($M_{Like} = 62.00$ vs. $M_{Dislike} = 51.47$; $F(1,29) = 1.28, p = 0.26, \eta_p^2 = 0.04$), 'contrasting fortune' positive empathy ($M_{Like} = -3.33$ vs. $M_{Dislike} = -2.15$; $F(1,29) < 1, \eta_p^2 = 0.00$), or 'contrasting fortune' negative empathy ($M_{Like} = 37.17$ vs. $M_{Dislike} = 27.03$; $F(1,29) = 5.42, p = 0.27, \eta_p^2 = 0.04$). However, they did show greater 'observer' negative empathy for a liked other ($M = 73.50$) than for a disliked other ($M = 56.07$; $F(1,29) = 5.42, p < 0.05, \eta_p^2 = 0.16$).

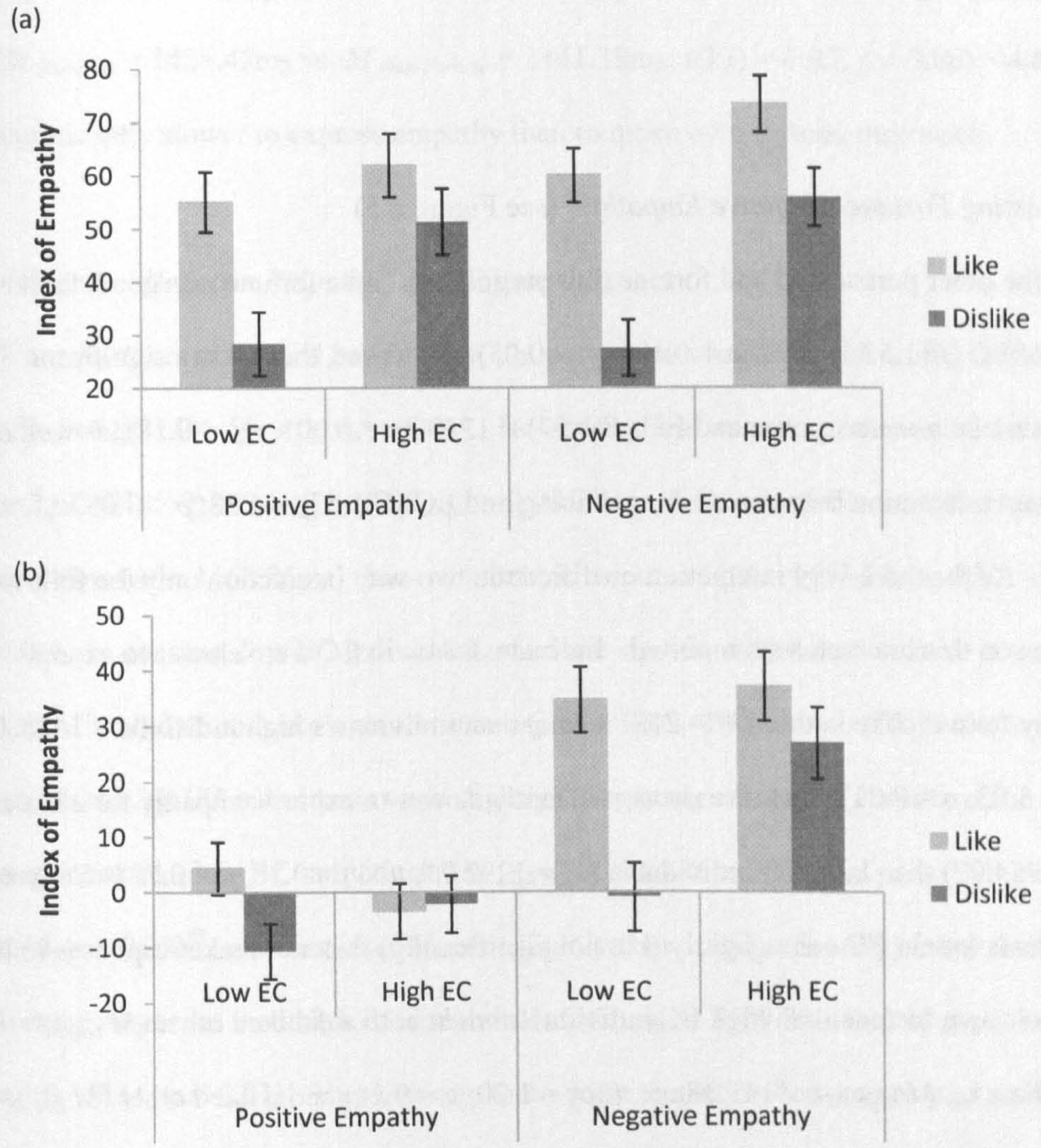

Figure 6.4. Empathy expressed towards the good (positive empathy) and bad fortunes (negative empathy) of a liked and a disliked other in Experiment 8 by individuals low and high in empathic concern (EC) when participants were a neutral observer (a) and when they had contrasting fortune (b). Error bars represent 1 Std. Error.

Response times

EC was included as an additional between subject variable in the three separate ANOVAs of liking (like/dislike) and response (empathic/own fortune) reported above. Only effects of EC and interactions with EC are reported as the effects of liking were the same as reported above.

Statistics are reported with corrected degrees of freedom where equal variances could not be assumed.

'Contrasting Fortune' Negative Empathy[45] (see Figure 6.5)

When the other person had bad fortune, but participants' own fortune was good, there was no effect of EC ($F(1,57) = 2.97, p = 0.18, \eta_p^2 = 0.03$). However, there was a significant interaction between response and EC ($F(1,57) = 12.74, p = 0.001, \eta_p^2 = 0.18$), as well as a three-way interaction between response, liking and EC ($F(1,57) = 4.88, p < 0.05, \eta_p^2 = 0.08$)[46]. As the three-way interaction qualified the two-way interaction only the follow-up analyses on this interaction is reported. Individuals low in EC were slower to express empathy for a disliked other ($M = 2151.41$ms) than individuals high in EC ($M = 1425.45$ms; $t(26) = 3.02, p < 0.01$), but were not significantly slower to express empathy for a liked other ($M = 1354.97$) than high EC individuals ($M = 1292.71$; $t(31) = 0.38, p = 0.71$). Conversely, individuals low in EC were slightly (but not significantly) faster to make responses in line with their own fortune than high EC individuals when both a disliked other ($M_{Low\,EC} = 1024.86$ms vs. $M_{High\,EC} = 1141.38$ms; $t(26) = 1.20, p = 0.24$) and a liked other ($M_{Low\,EC} = 1221.98$ms vs. $M_{High\,EC} = 1368.02$ms; $t(31) = 0.82, p = 0.42$) had bad fortune. Both low and high EC individuals were slower to express empathy for a disliked other than for a liked other, but this only reached significance in individuals low in EC ($M_{Dislike} = 2151.41$ms vs. $M_{Like} = 1354.97$ms; $t(29) = 3.69, p = 0.001$) and not in individuals high in EC ($M_{Dislike} = 1425.45$ms vs. $M_{Like} = 1292.71$ms; $t(28) = 0.73, p = 0.47$).

In addition, for a liked other, both low ($M_{Empathic} = 1354.97$ms vs. $M_{Own\,Fortune} = 1221.98$ms; $t(16) = 1.21, p = 0.25$) and high EC participants ($M_{Empathic} = 1292.71$ms vs. $M_{Own\,Fortune} = 1358.02$ms ; $t(15) = 0.47, p = 0.64$) were not significantly slower to express empathy than to make own fortune responses. In contrast, for a disliked other, low EC individuals ($M_{Empathic} =$

[45] Low EC/Like N=17; Low EC/Dislike N=14; High EC/Like N=16; High EC/Dislike N=14

[46] This interaction did not reach significance using log transformed response times ($F(1,55) = 2.97, p = 0.09, \eta_p^2 = 0.05$), but planned comparisons resulted in the same effects observed in the untransformed data.

2151.41ms vs. $M_{Own\ Fortune}$ = 1024.86ms; $t(13) = 5.97, p < 0.001$), but not high EC individuals ($M_{Empathic}$ = 1425.45ms vs. $M_{Own\ Fortune}$ = 1141.38ms; $t(13) = 1.92, p = 0.08$), were significantly slower to express empathy than to make own fortune responses.

'Observer' Negative Empathy[47] (see Figure 6.5)

When another person had bad fortune, but participants had neutral fortune, there was no effect of EC ($F(1,59) < 1, \eta_p^2 = 0.01$). However, there was an interaction between response and EC ($F(1,59) = 5.19, p < 0.05, \eta_p^2 = 0.08$). High EC individuals were faster to make empathic (M = 1166.86ms) than own fortune responses (M = 1555.73ms; $t(30) = 3.08, p < 0.01$). In contrast, low EC individuals were not significantly faster to make empathic (M = 1396.23ms) than to make own fortune responses (M = 1469.73ms; $t(30) = 0.66, p = 0.51$). In addition, high EC individuals were slightly (but not significantly) faster to make empathic responses than low EC individuals ($M_{High\ EC}$ = 1166.86ms *vs.* $M_{Low\ EC}$ = 1396.23ms; $t(60) = 1.64, p = 0.11$)[48], whereas low EC were slightly (but not significantly) faster to make own fortune responses than high EC individuals ($M_{Low\ EC}$ = 1469.73ms *vs.* $M_{High\ EC}$ = 1555.73ms; $t(60) = 0.66, p = 0.51$). There was no three-way interaction between response, liking and EC ($F(1,59) < 1, \eta_p^2 = 0.01$). However, planned comparisons revealed that only low EC individuals ($M_{Dislike}$ = 1678.93ms vs. M_{Like} = 1186.66ms; $t(15.98) = 2.17, p < 0.05$), and not high EC individuals ($M_{Dislike}$ = 1227.87ms vs. M_{Like} = 1109.66; $t(29) = 0.71, p = 0.48$), were significantly slower to express empathy for a disliked other than for a like other. Both low EC ($M_{Empathic}$ = 1186.66ms vs. $M_{Own\ Fortune}$ = 1508.36ms; $t(17) = 3.11, p < 0.01$) and high EC participants ($M_{Empathic}$ = 1109.66ms vs. $M_{Own\ Fortune}$ = 1684.70ms; $t(15) = 3.05, p < 0.01$) were faster to express empathy for a liked person's bad fortune than to make own fortune responses. High EC participants were still faster to express empathy for a disliked person's bad fortune (M = 1227.87ms) than to make own fortune responses (M = 1418.16ms; $t(14) = 1.21, p = 0.25$), thought this did not reach significance. In contrast, if anything, low EC

[47] Low EC/Like N=18; Low EC/Dislike N=14; High EC/Like N=16; High EC/Dislike N=15

[48] Using log transformed response times, high EC individuals were found to be faster to express empathy than low EC individuals ($t(60) = 2.14, p < 0.05$).

participants were slower to express empathy for a disliked person's bad fortune (M = 1678.93ms) than to make own fortune responses (M = 1409.92; $t(13) = 1.54, p = 0.15$).

'Observer' Positive Empathy[49] (see Figure 6.5)

When another person had good fortune, but participants had neutral fortune, there was no effect of EC ($F(1,58) < 1, \eta_p^2 = 0.00$). However, there was an interaction between response and EC ($F(1,58) = 9.09, p < 0.01, \eta_p^2 = 0.14$). High EC individuals were faster to make empathic (M = 1133.19ms) than own fortune responses (M = 1482.57ms; $t(29) = 4.67, p < 0.001$). In contrast, low EC individuals, were not significantly faster to make empathic responses (M = 1274.26ms) than to make own fortune responses (M = 1353.81ms; $t(31) = 1.17, p = 0.25$)[50]. In addition, high EC individuals were slightly (but not significantly) faster to express empathy (M = 1133.19ms) than low EC individuals (M = 1274.26ms; $t(60) = 1.27, p = 0.21$), but low EC participants were slightly (but not significantly) faster to make own fortune responses (M = 1353.81ms) than high EC individuals (M = 1482.57ms; $t(56.03) = 1.24, p = 0.22$). The three-way interaction between response, liking and EC was not significant ($F(1,58) < 1, \eta_p^2 = 0.01$). However, planned comparisons revealed that both low (M_{Like} = 1115.58ms vs. $M_{Dislike}$ = 1478.29ms; $t(17.69) = 2.10, p = 0.05$) and high EC ($M_{Like}$ = 1015.21ms vs. $M_{Dislike}$ = 1268.03ms; $t(28) = 1.84, p = 0.08$) participants displayed a trend to be faster to express empathy for a liked other than for a disliked other[51]. Both low EC ($M_{Empathic}$ = 1115.58ms vs. $M_{Own\ Fortune}$ = 1330.36ms; $t(17) = 3.40, p < 0.01$) and high EC participants ($M_{Empathic}$ = 1015.21ms vs. $M_{Own\ Fortune}$ = 1556.32ms; $t(15) = 5.11, p < 0.001$) were faster to express empathy for a liked person's good fortune than to make own fortune responses. High EC participants were still faster to express empathy for a disliked person's good fortune (M = 1268.03ms) than to make own fortune responses (M = 1398.27ms; $t(13)$ =

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49 Low EC/Like N=18; Low EC/Dislike N=14; High EC/Like N=16; High EC/Dislike N=14

50 Using log transformed response times, low EC individuals were found to be significantly slower to make own fortune than empathic responses ($t(31) = 2.09, p < 0.05$), but the effect was still smaller than for high EC individuals.

51 These trends reached significance using log transformed response times, with both high EC individuals ($t(27) = 2.16, p < 0.05$) and low EC individuals ($t(18.85) = 2.18, p < 0.05$) being faster to express empathy for a liked other than for a disliked other.

1.84, $p = 0.09$), thought this did not reach significance. In contrast, if anything, low EC participants were slower to express empathy for a disliked person's good fortune (M = 1478.29ms) than to make own fortune responses (M = 1383.97ms; $t(13) = 0.79$, $p = 0.44$).

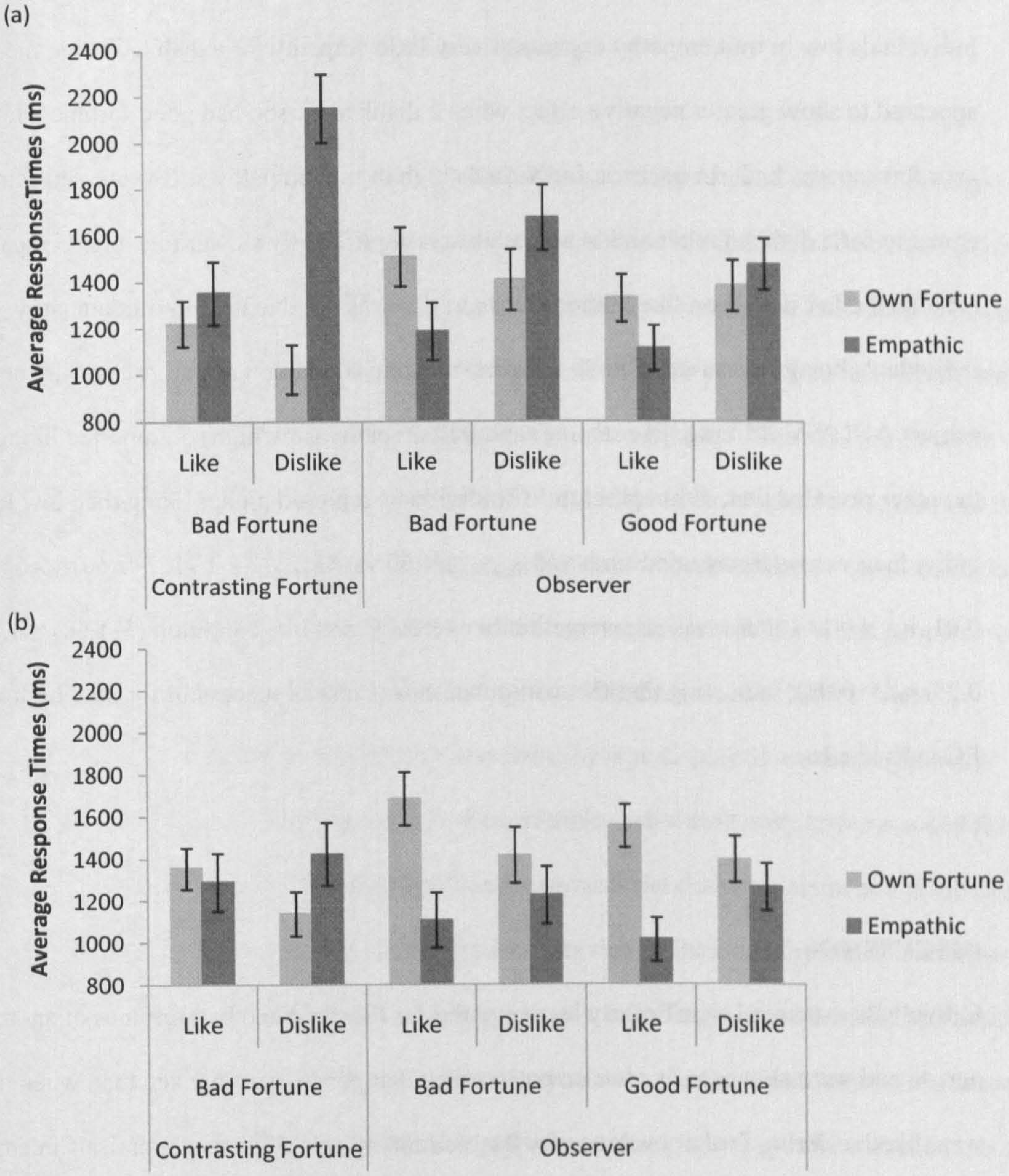


Figure 6.5. Average response times (ms) of low EC (a) and high EC (b) participants to express empathy for the bad fortune of a liked/disliked person (or to make responses in line with their own fortune) when their fortune was contrasting or neutral, and to express empathy for the good fortune of a liked/disliked person (or to make responses in line with their own fortune) when their fortune was neutral in Experiment 8. Error bars represent 1 Std. Error.

Summary

Individuals lower in trait empathy (EC) expressed less empathy and were slower to express empathy when they did so than those higher in trait empathy. Trait empathy also had a larger effect on and had a stronger association with empathy when the target was a disliked other. Individuals low in trait empathy expressed very little empathy for a disliked other and even appeared to show greater negative affect when a disliked person had good fortune whilst their own fortune was bad. In contrast, individuals high in trait empathy still expressed some empathy for a disliked other and were not always significantly slower to express empathy for a disliked other than for a liked other. Further, this was not due to high trait empathy individuals being less susceptible to the person appraisal manipulation. A two-way between subject ANOVA of liking (like/dislike) and trait empathy (low/high) on reported liking for the other revealed that, although high EC individuals reported higher liking than low EC individuals across liking conditions ($M_{High\,EC} = 4.60$ vs. $M_{Low\,EC} = 3.71$; $F(1,60)= 9.62$, $p < 0.01$, $\eta_p^2 = 0.14$), there was no interaction between EC and like condition ($F(1,60) = 1.36$, $p = 0.25$, $\eta_p^2 = 0.02$), indicating that the manipulation was just as successful for both high and low EC individuals.

DISCUSSION

Individuals expressed significantly less empathy for the good and bad fortunes of another person and were slower to express empathy when that person was disliked than when they were liked, offering further evidence for the modulating role of person appraisals in empathy (Hareli & Weiner, 2002; Singer et al., 2006). Moreover, in line with neuroimaging evidence of associations between empathic responses and trait empathy (e.g. Singer et al., 2004; Jabbi et al., 2007), the degree to which individuals expressed empathy for the fortunes of another person was also associated with individual differences in empathy. However, the current study offers new evidence suggesting that trait empathy may be more important in determining empathy for a disliked person than for a liked person. This fits with the idea that trait empathy may interact with situational factors (including characteristics of the target) in predicting empathy (Zaki et al., 2008). Experiment 9 then aimed to determine whether the effect of liking and trait empathy could be reproduced in a within-subject design, as well as extending this to look at the relationship between moral and empathic behaviour and to consider social comparisons processes in empathy.

It has been proposed that regulatory mechanisms encourage individuals to act in ways consistent with their internal moral standards (Aquino & Reed, 2002). These standards may include consideration for the feelings of others and may demand that individuals respond empathically towards the misfortunes of others. This might predict that individuals with more salient moral self-concepts may express greater empathy. This was examined in Experiment 9 using a self-report measure of moral identity developed by Aquino and Reed (2002). However, it has also been suggested that these moral regulatory mechanisms can sometimes be disinhibited by cognitive reasoning mechanisms that override people's moral concerns (moral disengagement; Bandura et al., 1996; Detert et al., 2008). Moral disengagement may help explain why less empathy was displayed towards a person of unpleasant character in Experiment 8. For example, individuals may have reasoned that they were justified in not responding empathically towards the disliked person as a result of his/her unpleasant behaviour, judging him/her to be deserving of their bad fortune and not deserving of their good fortune. In support of this, previous studies have shown that individuals display less empathy for the bad fortune of a person perceived to deserve their own misfortune (e.g. Decety et al., 2010; Feather, 2008). Alternatively, participants may have reasoned that the disliked other was less capable of feelings and therefore that less empathy was necessary. This might be compatible with the finding that individuals reported being less able to imagine the feelings of a disliked other than the feelings of a liked other.

Moral disengagement was investigated in two ways in Experiment 9. Firstly, after judging how they would feel in response to scenarios in which a disliked or a liked other had good or bad fortune, participants were asked to report how deserving they considered the liked and the disliked other to be of good and bad fortune. It was predicted that participants would rate a disliked other of unpleasant character as more deserving of bad fortune and less deserving of good fortune than a liked other and that perceived deservingness would be related to participants' empathy for that person. Secondly, participants completed a self-report measure of moral disengagement assessing their tendency to use cognitive reasoning to justify non-moral actions (Detert et al., 2008). If moral disengagement can explain why participants displayed less empathy for a disliked other in Experiment 8, it was expected that individuals who score higher in moral disengagement would show greater modulation of empathy for a disliked other.

In addition, the final study briefly considered whether comparisons between participants' own fortune and another person's good fortune may explain the lack of positive empathy observed in Experiments 2-8 when participants' own fortune was bad. In situations where one's own fortune is poorer than that of another person's, it may be difficult to feel pleased for that person's good fortune, and their good fortune may even result in envy (Tesser & Collins, 1988). In the current studies, the fact that positive empathy was observed when participants' own fortune was neutral but not when it was bad is suggestive of social comparison processes. Further, the finding that a disliked other's good fortune resulted in *increased* negative affect (in individuals low in empathic concern) when receiving bad fortune is consistent with social comparison processes, and envy in particular, which is thought to be exacerbated by dislike (Ortony, Clore, & Collins, 1988). Stronger evidence for social comparison processes might also be found by examining whether emotional responses to another person's contrasting fortune are influenced by factors known to promote social comparisons.

The social comparison literature has traditionally focused on how another person's performance or ability influences participants' evaluations of their own performance and their affective reactions to this (e.g. McFarland et al., 2001; Tesser, Miller, & Moore, 1988), but social comparisons may also occur as a result of affective evaluations of one's own and another person's state (Epstude & Mussweiler, 2009) or in response to inequities in economic status (Brandstätter, 2000). Research has suggested that social comparison processes are more likely to be triggered, and may elicit stronger social comparison emotions (e.g. envy), when the available information about the other person is in a domain of high self-relevance (Gilbert, Giesler, & Morris, 1995; Sullins, 1991; Takahashi et al., 2009; Tesser et al., 1988). For instance, in one study another person's superior performance resulted in envy when their performance was of high relevance to participants, but resulted in pride for the other person when it was of lower relevance (Tesser & Collins, 1988). Inspection of the scenarios presented in Experiments 2-8 identified two types of contrasting fortune scenarios, one in which the contrast occurred along an affective dimension only (e.g. having one's laptop stolen/winning an award) and one in which the contrast occurred along an affective dimension within the same domain (e.g. a haircut disaster/a flattering and admired haircut). It might be reasonable to assume that another person's fortune in the same domain may have greater relevance to how one evaluates one's own situation and may therefore be more likely to evoke social comparisons. Then, if social comparisons between one's own poor fortune and another person's better fortune results in envy (and limits positive empathy), it might be predicted that less positive empathy would be found in scenarios where one's bad fortune directly contrasts with that person's good fortune (compared to positive empathy in scenarios where one's bad fortune and the other's good fortune are in different domains). This was examined in Experiment 9.

Experiment 9

METHOD

Design

Experiment 8 was replicated using a within-subject design, with participants presented with information about the fortunes of both a likeable and a dislikeable person. The empathy indices used in Experiment 8 were used as dependent variables (as well as response times). Experiment 9 also considered three additional variables to Experiment 8. Firstly, as well as looking at the effect of individual differences in trait empathy on empathy for a liked or a disliked other, it considered the influence of moral identity. Secondly, it considered whether moral disengagement would be related to, and might explain, reduced empathy for a disliked other. Finally, nested in the contrasting fortune conditions was the factor social comparison (Table 6.8), with scenarios classed as lower or higher in the potential to trigger social comparisons, in order to explore whether social comparisons may affect empathy for the (good) fortunes of others.

Participants

62 different participants (46 female) took part in Experiment 9 in return for a small inconvenience allowance or course credits. Ages ranged between 18 and 30 years ($M = 20.60$ years, $SD = 1.95$). All participants were native English speakers.

Materials

120 scenarios were constructed or adapted from Experiment 8 to include two others within the scenarios. One example of a scenario in which one of the others had good fortune and participants' own fortune was bad was: 'You arrive back at work after the weekend. Michelle and Lucy are already in. Your boss comes into the office. Your boss reprimands you for leaving some work unfinished before you left for the weekend. Your boss then tells Lucy

that the company has been sent tickets to a film premiere. He offers Lucy the tickets. Her favourite Hollywood actor will be there.' An example of a scenario in which both others have neither good nor bad fortune but participants' own fortune was good was: 'Later, you go to the spa in the hotel. You have a massage. It fixes an ache you have had for months. As you finish your treatment, you see Michelle and Lucy. They are looking at a leaflet to see all the treatments on offer.' Otherwise the scenarios were similar to those in Experiment 8, with the same overall context (a group of friends experiencing events over the course of a few years) and with the same range of positive and negative events. Different versions of the same scenarios were again presented in each condition (Table 6.8), with the versions counterbalanced across different experimental lists, with participants randomly allocated to different lists so that each participant saw each scenario only once.[52] In Experiment 9, scenarios were divided into 6 blocks of 20 scenarios (plus an additional 2 filler scenarios in each block; see below), with an equal number of each condition in each block.

Low and High Social Comparison Scenarios

The contrasting fortune scenarios presented were classed as high or low in social comparison based on whether they afforded direct contrasts between one's own and the other's fortune within the same domain (e.g. successfully auditioning to get a part in a play/not being offered a part) or whether they contrasted only on an affective dimension (e.g. being invited to lunch at an expensive restaurant/computer crashing and losing several hours work). For each other (liked/disliked) and for each contrast (self good fortune & other bad fortune/self bad fortune & other good fortune), each participant was presented with an equal number of low and high comparison scenarios (see Table 6.8).

[52] Not all scenarios appeared in the self good fortune/other neutral and the self bad fortune/other neutral conditions due to the lower number of scenarios in these conditions (see Table 6.8). However, those scenarios that were included in these conditions were determined randomly and were representative of the full sample of scenarios. Note also that this would not impact on any effects of liking on empathy as the same baseline scenarios were used to calculate 'contrasting fortune' empathy for both a liked and a disliked other.

Table 6.8

Number of Scenarios Presented to Each Participant in Each Condition in Experiment 9. Scenarios of Contrasting Fortune (boxed) were Classed as High or Low in the Potential to Trigger Social Comparisons.

Fortune of Liked Other	Fortune of Disliked Other	Fortune of Self	Social Comparison	No. of Scenarios
Bad	Neutral	Neutral	---	12
Neutral	Bad	Neutral	---	12
Bad	Neutral	Good	Low	6
			High	6
Neutral	Bad	Good	Low	6
			High	6
Good	Neutral	Neutral	---	12
Neutral	Good	Neutral	---	12
Good	Neutral	Bad	Low	6
			High	6
Neutral	Good	Bad	Low	6
			High	6
Neutral	Neutral	Bad	---	12
Neutral	Neutral	Good	---	12

Likeability Manipulation

The behaviours used to manipulate impressions of the other in Experiment 8 were no longer used in this experiment; it was believed that the experimental manipulation would be too transparent with information presented about a likeable and a dislikeable person simultaneously. Instead, a longer practice block of 22 scenarios was presented including filler scenarios similar to those used in Experiment 8 (Table 6.3), where the likeable person would respond pleasantly following the bad fortune of participants and where the dislikeable person would respond unpleasantly (3 of each of these were presented after different bad fortune scenarios). These were topped up with additional filler scenarios within the main blocks of scenarios (with 1 filler scenario relating to the liked other and 1 relating to the disliked other in each of the 6 blocks). All participants were presented with the same practice block of scenarios, but within the main task the order in which filler scenarios relating to the liked other and to the disliked other were presented was counterbalanced across different experimental lists (i.e. if in one list a filler scenario relating to the liked person was presented after the fifth scenario in a block and the filler scenario relating to the disliked person after the 13th scenario, in another list the filler scenario relating to the disliked person would be presented after the 5th scenario and that relating to the liked other would be presented after the 13th).

Questionnaires

Participants also completed a set of questionnaires: a purposely designed exit questionnaire, the IRI (Davis, 1983) and two questionnaires taken from the literature looking at moral attitudes: the self-importance of moral identity measure (Aquino & Reed, 2002; Reed & Aquino, 2003) and the moral disengagement questionnaire (Detert et al., 2008).

The exit questionnaire tested the success of the liking manipulation. Participants were asked to indicate how likeable they found each other, how easy they found it to imagine the feelings of each other and how deserving they thought each other was of good and of bad fortune. They also rated how vividly they felt they could imagine the scenarios generally. Participants rated each question on a 7-point scale, with higher scores indicating greater liking, greater ease in imagining the feelings of the other, greater deservingness and greater vividness.

In the self importance of moral identity questionnaire (Aquino & Reed, 2002) participants are given a list of 9 adjectives (caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, kind) and are asked to imagine a person with these characteristics. They are then asked to answer 10 questions relating to how important they hold these characteristics to be to their own identity, making their response on a 5-point scale from strongly disagree to agree. This measure has two subscales internalization (relating to individuals' private identity and how they view themselves) and symbolization (relating to individuals' public identity and how they are viewed by others).

The moral disengagement questionnaire was adapted from studies by Bandura and colleagues (Bandura et al., 1996) by Detert et al. (2008). This version contains 24 items assessing moral disengagement (cognitive reasoning that overrides normal moral regulation of behaviour), rated on a 5-point scale from strongly disagree to strongly agree. There are 3 items for 8 different moral disengagement mechanisms: moral justification, euphemistic labelling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distortion of consequences, attribution of blame and dehumanization. Items, for example, include 'It is alright to fight to protect your friends' and 'People who are mistreated have usually done things to deserve it.'

Procedure

Participants were asked to imagine that they knew Lucy and Michelle or Luke and Michael (gender congruent with participant) from school but were not presented with any other information about these individuals prior to the task. With this exception, the procedure was the same as in Experiment 8; participants completed the empathy task followed by the set of questionnaires.

RESULTS

One participant was excluded for making less than 50% of responses in line with their own (good) fortune when the other person had neutral fortune.[53]

[53] These scenarios were used as a baseline from which to calculate empathy and a score of less than 50% on these scenarios made it difficult to calculate a reliable estimate of empathy.

Manipulation Checks

The manipulation was successful, with participants rating the liked other as significantly more likeable ($M = 6.13$, $SD = 1.09$) than the disliked other ($M = 2.28$, $SD = 1.08$; $t(60) = 16.41$, $p < 0.001$). Like Experiment 8, participants also reported being able to imagine how the liked person felt ($M = 5.64$, $SD = 0.95$) more than the disliked person ($M = 3.84$, $SD = 1.43$; $t(60) = 8.58$, $p < 0.001$) and participants reported a high ability to imagine the scenarios vividly ($M = 5.80$, $SD = 0.82$).

Liking also had an effect on how deserving participants thought the other was of good and bad fortune. The liked person was perceived to be more deserving of good fortune ($M = 6.10$, $SD = 1.06$) than the disliked person ($M = 3.39$, $SD = 1.65$; $t(60) = 9.84$, $p < 0.001$) and less deserving of bad fortune ($M = 1.89$, $SD = 1.10$) than the disliked person ($M = 3.98$, $SD = 1.88$; $t(60) = 7.39$, $p < 0.001$). Moreover, the degree to which individuals liked the liked and disliked other was positively related to how deserving they considered that other to be of good fortune ($r_{Like} = 0.81$, $p < 0.001$; $r_{Dislike} = 0.38$, $p < 0.01$) and negatively related to how deserving they considered that other to be of bad fortune ($r_{Like} = -0.66$, $p < 0.001$; $r_{Dislike} = -0.41$, $p = 0.001$).

Effect of liking and trait empathy

The effect of liking and trait empathy on the degree of empathy expressed towards the good and bad fortune of another person was first examined to determine whether the effects observed in Experiment 8 were replicated in a within-subject design. Based on a median split of their empathic concern scores, participants were split into high trait empathy (N = 25; $M = 23.52$, $SD = 2.04$) and low trait empathy groups (N = 27; $M = 15.85$, $SD = 2.55$; $t(50) = 11.90$, $p < 0.001$).[54] The scores of participants on the self-report measures are displayed in Table 6.9[55].

[54] 8 participants fell on the median and were therefore left out of analysis.
[55] EC scores did not differ significantly in Experiments 8 and 9 ($t(133) = 0.83$, $p = 0.41$).

Table 6.9

Self-Reported Empathy (IRI; Davis, 1983), Moral Identity (Aquino & Reed, 2002) and Moral Disengagement (Detert et al., 2008). Standard Deviation in Parentheses.

Empathy	Fantasy	19.65 (5.27)
	Empathic Concern	19.60 (4.19)
	Perspective-taking	17.12 (3.44)
	Personal Distress	12.42 (5.11)
	IRI	68.78 (11.68)
Moral Identity	Internalization	23.26 (2.02)
	Symbolization	14.79 (3.46)
Moral Disengagement	Moral Justification	8.15 (2.33)
	Euphemistic Labelling	5.48 (1.83)
	Advantageous Comparison	5.31 (1.84)
	Displacement of Responsibility	5.62 (1.63)
	Diffusion of Responsibility	7.85 (2.39)
	Distortion of Consequences	5.64 (2.17)
	Attribution of Blame	7.20 (2.00)
	Dehumanization	6.15 (2.23)
	Moral Disengagement	51.39 (9.01)

Note. There were no IRI scores available for one participant.

Emotional Responses (see Figure 6.6)

4 indices of empathy were calculated for a liked and a disliked person using the same formulas as Experiment 8 (Table 6.5). A mixed measure MANOVA was then performed on the 4 indices to assess the effect of liking (like/dislike) and trait empathy (low/high). The omnibus analysis revealed a main effect of liking ($F(4,47) = 12.43, p < 0.001, \eta_p^2 = 0.51$). Univariate analyses revealed effects of liking on all four empathy measures. Participants displayed significantly less 'observer' negative empathy for the disliked other ($M = 42.01$) than for the liked other ($M = 64.03$; $F(1,50) = 33.52, p < 0.001, \eta_p^2 = 0.40$) and less 'contrasting fortune' negative empathy for the disliked other ($M = 19.61$) than for the liked

other ($M = 34.47$; $F(1,50) = 20.19, p < 0.001, \eta_p^2 = 0.29$). They also displayed less 'observer' positive empathy for a disliked other ($M = 45.57$) than for a liked other ($M = 58.36$; $F(1,50) = 9.76, p < 0.01, \eta_p^2 = 0.16$) and less 'contrasting fortune' positive empathy for the disliked other ($M = -4.75$) than for the liked other ($M = 7.90$; $F(1,50) = 17.88, p < 0.001, \eta_p^2 = 0.26$).

There was also a main effect of trait empathy ($F(4,47) = 2.96, p < 0.05, \eta_p^2 = 0.20$). Low EC individuals expressed less 'observer' negative empathy ($M = 45.70$) than high EC individuals ($M = 60.34$; $F(1,50) = 11.45, p = 0.001, \eta_p^2 = 0.19$) and less 'contrasting fortune' negative empathy ($M = 19.62$) than high EC individuals ($M = 34.46$; $F(1,50) = 5.23, p < 0.05, \eta_p^2 = 0.10$). However, there was no effect of trait empathy on 'observer' positive empathy ($M_{Low\,EC} = 48.13$ vs. $M_{High\,EC} = 55.80$; $F(1,50) = 1.66, p = 0.20, \eta_p^2 = 0.03$) or 'contrasting fortune' positive empathy ($M_{Low\,EC} = -1.94$ vs. $M_{High\,EC} = 5.08$; $F(1,50) = 1.82, p = 0.18, \eta_p^2 = 0.04$). There were no significant interactions between liking and empathic concern either in the omnibus analysis ($F(4,47) = 1.09, p = 0.37, \eta_p^2 = 0.09$) or on the univariate tests of each empathy index ($p > 0.15$). However, because it was predicted that trait empathy would have a greater influence on empathy for a disliked other than for a liked other, planned comparisons were performed. Firstly, separate MANOVAs were performed to assess whether trait empathy significantly influenced both empathy for a liked other and for a disliked other. Then, separate MANOVAs were performed to assess whether both low and high EC individuals were influenced by liking when expressing empathy.

Empathy for a disliked other

There was a main effect of trait empathy on empathy for a disliked other ($F(4,47) = 3.13, p < 0.05, \eta_p^2 = 0.21$). Univariate analyses revealed low EC individuals displayed significantly less 'observer' negative empathy for a disliked other ($M = 32.70$) than high EC individuals ($M = 51.32$; $F(1,50) = 10.47, p < 0.01, \eta_p^2 = 0.17$) and less 'contrasting fortune' negative empathy for a disliked other ($M = 9.76$) than high EC individuals ($M = 29.47$; $F(1,50) = 6.88, p < 0.05, \eta_p^2 = 0.12$). However, there was no effect of trait empathy on 'observer' positive empathy for a disliked other ($M_{Low\,EC}$ = 42.85 vs. $M_{High\,EC}$ = 48.28; $F(1,50) < 1$, $\eta_p^2 = 0.01$) or on 'contrasting fortune' positive empathy for a disliked other ($M_{Low\,EC}$ = -8.96 vs. $M_{High\,EC}$ = -0.54; $F(1,50) = 2.07$, $p = 0.16$, $\eta_p^2 = 0.04$).

Empathy for a liked other

In contrast to empathy for a disliked other, there was no main effect of trait empathy on empathy for a liked other ($F(4,47) = 1.18$, $p = 0.33$, $\eta_p^2 = 0.09$). Moreover, there was no effect of trait empathy on 'observer' positive empathy ($M_{Low\,EC}$ = 53.41 vs. $M_{High\,EC}$ = 63.32; $F(1,50) = 2.00$, $p = 0.16$, $\eta_p^2 = 0.04$) or in 'contrasting fortune' positive empathy ($M_{Low\,EC}$ = 5.09 vs. $M_{High\,EC}$ = 10.70; $F(1,50) < 1$, $\eta_p^2 = 0.02$) for a liked other. Similarly, there was no effect of trait empathy on 'contrasting fortune' negative empathy for a liked other ($M_{Low\,EC}$ = 29.48 vs. $M_{High\,EC}$ = 39.45; $F(1,50) = 2.01$, $p = 0.16$, $\eta_p^2 = 0.04$) and only a trend for an effect of trait empathy on 'observer' negative empathy for a liked other ($M_{Low\,EC}$ = 58.70 vs. $M_{High\,EC}$ = 69.36; $F(1,50) = 3.42$, $p = 0.07$, $\eta_p^2 = 0.06$).

Low trait empathy individuals

Individuals low in trait empathy showed a significant main effect of liking on empathy ($F(4,23) = 8.38$, $p < 0.001$, $\eta_p^2 = 0.59$). They displayed significantly less 'observer' negative empathy for a disliked other ($M = 32.70$) than for a liked other ($M = 58.70$; $F(1,26) = 22.61$, $p < 0.001$, $\eta_p^2 = 0.47$) and less 'contrasting fortune' negative empathy for a disliked other ($M = 9.76$) than for a liked other ($M = 29.48$; $F(1,26) = 15.67$, $p = 0.001$, $\eta_p^2 = 0.38$). They also expressed less 'contrasting fortune' positive empathy for a disliked other ($M = -8.96$) than for a liked other ($M = 5.09$; $F(1,26) = 13.68$, $p = 0.001$, $\eta_p^2 = 0.35$) and there was a trend for low empathy participants to display less 'observer' positive empathy for a disliked other ($M = 42.85$) than for a liked other ($M = 53.41$; $F(1,26) = 4.11$, $p = 0.05$, $\eta_p^2 = 0.14$).

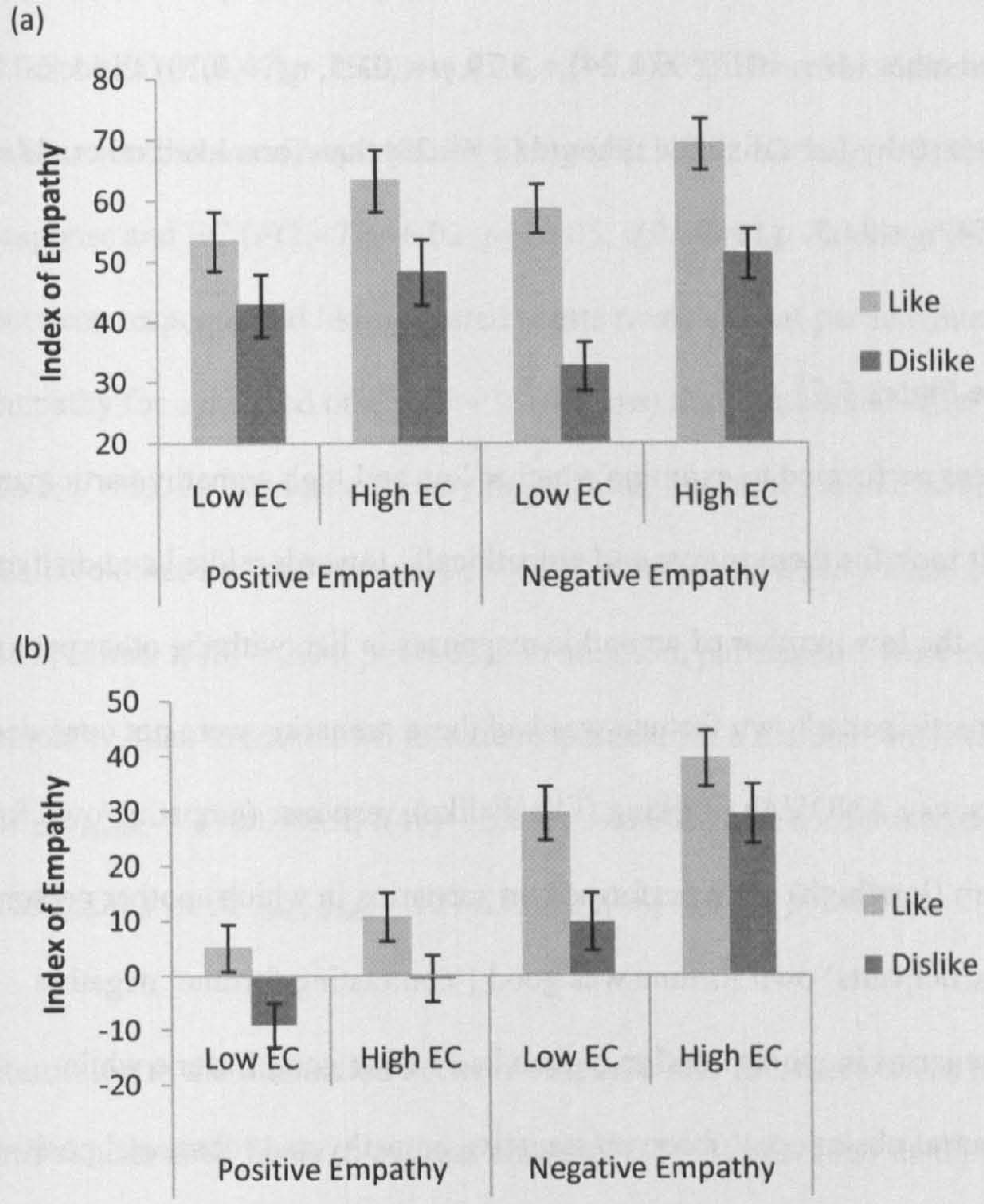


Figure 6.6. Empathy expressed towards the good (positive empathy) and bad fortunes (negative empathy) of a liked and disliked other in Experiment 9 in individuals low and high in empathic concern (EC) when participants were a neutral observer (a) and when they had contrasting fortune (b). Error bars represent 1 Std. Error.

High trait empathy individuals

Individuals high in trait empathy also showed a significant main effect of liking on empathy ($F(4,21) = 4.51, p < 0.01, \eta_p^2 = 0.46$). Similarly, they displayed significantly less 'observer' negative empathy for a disliked other ($M = 51.32$) than for a liked other ($M = 69.36$; $F(1,24) = 11.79, p < 0.01, \eta_p^2 = 0.33$) and less 'contrasting fortune' negative empathy for a disliked other ($M = 29.47$) than for a liked other ($M = 39.45$; $F(1,24) = 5.47, p < 0.05, \eta_p^2 = 0.19$).

They also expressed less 'contrasting fortune' positive empathy for a disliked other (M = -0.54) than for a liked other (M = 10.70; $F(1,24) = 5.79, p < 0.05, \eta_p^2 = 0.19$) and less 'observer' positive empathy for a disliked other (M = 48.28) than for a liked other (M = 63.32; $F(1,24) = 5.54, p < 0.05, \eta_p^2 = 0.19$).

Response Times (see Figure 6.7)

A set of analyses were performed to examine whether low and high empathy participants varied in how long it took for them to respond empathically towards a liked and disliked other. Again, due to the low number of empathic responses in line with the other person's good fortune when participants' own fortune was bad these scenarios were not considered. Three separate[56] two-way ANOVAs of liking (like/dislike), response (empathic/own fortune) and empathic concern (low/high) were performed on scenarios in which another person had bad fortune while participants' own fortune was good ('contrasting fortune' negative empathy), and on scenarios in which another person had bad or good fortune while participants were neutral observers ('observer' negative empathy and 'observer' positive empathy). An arbitrary cut-off of 5000ms[57] was again used to remove extreme outliers, resulting in exclusion of less than 1% of data points across all participants in the conditions analysed. Response times were positively skewed with skewness and kurtosis values of 1.69 and 3.80, but analyses of the untransformed response times[58] is reported following the same principles as Experiments 1-8.

'Contrasting fortune' Negative Empathy (N=49)

When another person had bad fortune, but participants' own fortune was good, there was a main effect of response, with participants being slower to express empathy for the other (M = 1363.73) than to make good responses in line with their own good fortune (M = 1193.88ms;

[56] It was not possible to include all participants in these analyses as not all participants made both empathic responses and own fortune responses in all conditions and therefore separate ANOVAs were performed to allow the maximum inclusion of participants in each analysis.
[57] The average response times of all participants fell within 2 standard deviations of this value.
[58] Log transformation reduced skewness to 0.33 and kurtosis to -0.09.

$F(1, 47) = 6.11, p < 0.05, \eta_p^2 = 0.12$). There was no main effect of liking ($F(1,47) < 1, \eta_p^2 = 0.02$) or EC ($F(1,47) = 1.42, p = 0.28, \eta_p^2 = 0.03$). However, there were significant interactions between response and liking ($F(1,47) = 12.58, p = 0.001, \eta_p^2 = 0.21$) and between response and EC ($F(1,47) = 6.02, p < 0.05, \eta_p^2 = 0.11$). Turning first to the interaction between response and liking, paired t-tests revealed that participants were slower to express empathy for a disliked other ($M = 1514.11$ms) than for a liked other ($M = 1232.55$ms; $t(48) = 2.95, p < 0.01$). Conversely, they made faster responses in line with their own fortune when a disliked other had bad fortune ($M = 1108.99$ms) than when a liked other had bad fortune ($M = 1277.33$ms; $t(48) = 2.04, p < 0.05$). In addition, participants were only slower to express empathy, than to make own fortune responses, for a disliked other ($M_{Empathic} = 1514.11$ms vs. $M_{Own\ Fortune} = 1108.99$ms; $t(48) = 3.65, p = 0.001$) and not for a liked other ($M_{Empathic} = 1232.55$ms vs. $M_{Own\ Fortune} = 1277.33$ms; $t(48) = 0.58, p = 0.56$).

Returning to the interaction between response and EC, there was a trend for high EC individuals to be faster to express empathy ($M = 1206.94$ms) than low EC individuals ($M = 1520.52$ms; $t(47) = 1.99, p = 0.05$), while there was no effect of EC on own fortune responses ($M_{High\ EC} = 1205.56$ms vs. $M_{Low\ EC} = 1182.19$ms; $p = 0.85$). Individuals low in EC were slower to express empathy for the other ($M = 1520.52$ms) than to make good responses in line with their own fortune ($M = 1182.19$ms; $t(25) = 3.31, p < 0.01$), but high EC individuals were not slower to express empathy for the other ($M = 1206.94$ms) than to make own fortune responses ($M = 1205.56$ms; $t(22) = 0.02, p = 0.99$).

Although the three-way interaction between liking, response and EC fell short of significance ($F(1,47) = 2.15, p = 0.15, \eta_p^2 = 0.04$), planned comparisons were performed because it was predicted that low trait empathy individuals would be particularly slow to express empathy for a disliked other. This revealed that low EC participants were slower to express empathy for a disliked other ($M = 1721.37$ms) than for a liked other ($M = 1319.67$ms; $t(25) = 2.51, p < 0.05$) and faster to make own fortune responses when a disliked other had bad fortune ($M =$

1072.99ms) than when a liked other had bad fortune (M = 1291.40ms; $t(25) = 2.16, p < 0.05$). In contrast, high EC were not significantly slower to express empathy for a disliked other (M = 1279.81ms) than for a liked other (M = 1134.06ms; $t(22) = 1.64, p = 0.12$) and did not make own fortune responses significantly faster when a disliked other had bad fortune (M = 1149.69ms) compared to when a liked other had bad fortune (M = 1261.43ms; $t(22) = 0.83, p = 0.42$). In addition, both low and high EC individuals were slower to express empathy for a disliked other than to make own fortune responses, but this only reached significance in low EC individuals ($M_{Empathic}$ = 1721.37ms vs. $M_{Own\ Fortune}$ = 1072.99ms; $t(25) = 3.58, p = 0.001$) and not in high EC individuals ($M_{Empathic}$ = 1279.81ms vs. $M_{Own\ Fortune}$ = 1149.69ms; $t(22) = 1.40, p = 0.18$)[59]. For a liked other, neither low EC individuals ($M_{Empathic}$ = 1319.67ms *vs.* $M_{Own\ Fortune}$ = 1291.40ms; $t(25) = 0.29, p = 0.78$) or high EC individuals ($M_{Empathic}$ = 1134.06ms vs. $M_{Own\ Fortune}$ = 1261.43ms; $t(22) = 1.06, p = 0.31$) were slower to express empathy than to make own fortune responses.

'Observer' Negative Empathy (N=49)

When another had bad fortune, but participants had neutral fortune, there was a significant effect of response ($F(1,47) = 32.58, p < 0.001, \eta_p^2 = 0.41$), with participants being faster to express empathy (M = 1133.06ms) than to make neutral responses in line with their own fortune (M = 1433.22ms). There was no main effect of liking ($F(1,47) < 1, \eta_p^2 = 0.01$) or of EC ($F(1,47) < 1, \eta_p^2 = 0.00$). However, there was a significant interaction between liking and response ($F(1,47) = 6.94, p < 0.05, \eta_p^2 = 0.13$). Paired t-tests revealed that participants were slower to express empathy for a disliked other (M = 1207.06ms) than for a liked other (M = 1060.61ms; $t(48) = 2.09, p < 0.05$). In contrast, participants were slightly (but not significantly) faster to make responses in line with their own fortune when a disliked other had bad fortune (M = 1389.02) than when a liked other had bad fortune (M = 1475.83ms; $t(48) = 1.38, p = 0.18$). For both a liked other ($M_{Empathic}$ = 1060.61ms vs. $M_{Own\ Fortune}$ =

[59] This reached significance using log transformed response times ($t(22) = 2.13, p < 0.05$), but the effect was still larger in low EC individuals.

1475.83ms; $t(48) = 6.70, p < 0.001$) and a disliked other ($M_{Empathic} = 1207.06$ms vs. $M_{Own\ Fortune} = 1389.02$ms; $t(48) = 2.42, p < 0.05$), participants were faster to express empathy than to make own fortune responses.

There was no interaction between response and EC ($F(1,47) = 2.18, p = 0.15, \eta_p^2 = 0.04$)[60] and no three-way interaction between response, liking and EC ($F(1,47) < 1, \eta_p^2 = 0.01$). However, planned comparisons revealed that, for a liked other, both low EC individuals ($M_{Empathic} = 1087.77$ms vs. $M_{Own\ Fortune} = 1451.52$ms; $t(24) = 4.86, p < 0.001$) and high EC individuals ($M_{Empathic} = 1032.32$ms vs. $M_{Own\ Fortune} = 1501.15$ms; $t(22) = 4.68, p < 0.001$) were faster to express empathy than to make neutral responses in line with their own fortune. High EC participants were also faster to make empathic than own fortune responses for a disliked other ($M_{Empathic} = 1157.11$ms vs. $M_{Own\ Fortune} = 1443.72$ms; $t(22) = 2.83, p < 0.01$). In contrast, low EC participants were not significantly faster to express empathy than to make own fortune responses for a disliked other ($M_{Empathic} = 1255.01$ms vs. $M_{Own\ Fortune} =$ 1336.50ms; $t(24) = 0.75, p = 0.46$).

'Observer' Positive Empathy (N=47)

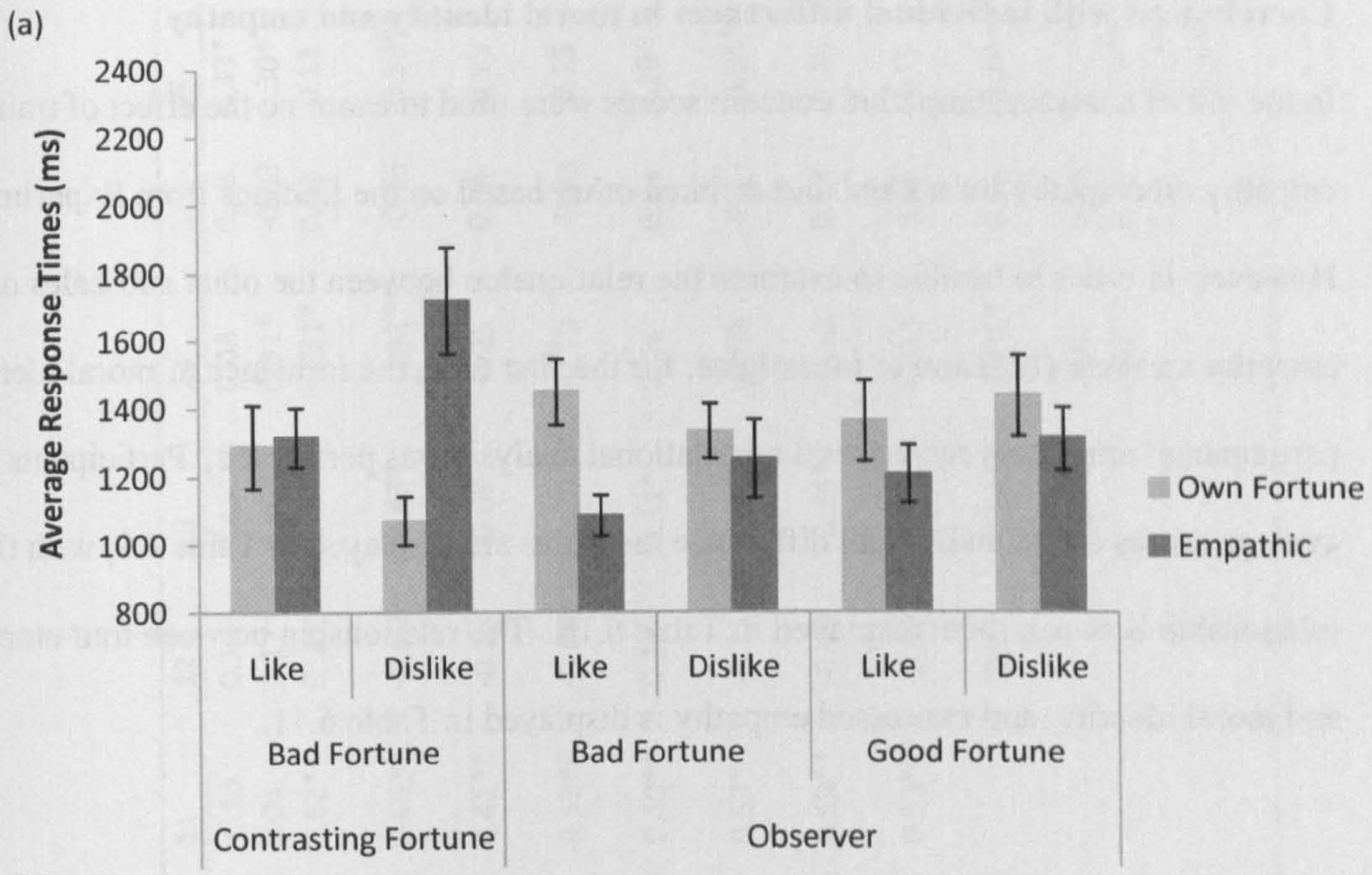
When another had good fortune, but participants had neutral fortune, there was a main effect of response, with participants being faster to express empathy ($M = 1175.9$ms) than to make neutral responses in line with their own fortune ($M = 1429.35$ms; $F(1,45) = 19.28, p < 0.001, \eta_p^2 = 0.30$). There was no main effect of liking ($F(1,45) = 1.77, p = 0.19, \eta_p^2 = 0.04$) or of EC ($F(1,45) < 1, \eta_p^2 = 0.01$). There was no interaction between liking and response ($F(1,45) = 2.57, p = 0.12, \eta_p^2 = 0.05$) and only a trend for an interaction between response and EC ($F(1,45) = 3.77, p = 0.06, \eta_p^2 = 0.08$). Similarly the three-way interaction between response, liking and EC failed to reach significance ($F(1,45) = 1.78, p = 0.19, \eta_p^2 = 0.04$). However,

[60] Using log transformed response times, there was a significant interaction between response and EC ($F(1,47) = 4.09, p < 0.05, \eta_p^2 = 0.08$). This was explained by a larger effect of response (faster empathic responses than own fortune responses) in high EC individuals than in low EC individuals, though was statistically significant for both groups ($p < 0.01$).

planned comparisons revealed that while all participants were quicker to express empathy for a liked person's good fortune than for a disliked other's good fortune, this was only significant in individuals high in EC (M_{Like} = 970.35ms vs. $M_{Dislike}$ = 1205.10ms; $t(23) = 3.77, p = 0.001$) and not in low EC individuals (M_{Like} = 1209.78ms vs. $M_{Dislike}$ = 1315.53ms; $t(23) = 0.95, p = 0.35$). There was no effect of liking on own fortune responses for either the low EC group (M_{Like} = 1367.93ms vs. $M_{Dislike}$ = 1440.90ms; $t(23) = 0.53$ms, $p = 0.60$) or the high EC group (M_{Like} = 1514.33ms vs. $M_{Dislike}$ = 1394.25ms; $t(22) = 0.90, p = 0.38$). High EC individuals were significantly faster to make empathic responses for a liked person (M = 970.35ms) than to make responses in line with their own fortune (M = 1514.33ms; $t(23) = 4.40, p < 0.001$) and displayed a trend to be faster to express empathy for a disliked person (M = 1205.10ms) than to make own fortune responses (M = 1394.25ms; $t(22) = 1.88, p = 0.07$). In contrast, low EC individuals were not significantly faster to express empathy for a liked other ($M_{Empathic}$ = 1209.78ms vs. $M_{Own\ Fortune}$ = 1367.93ms; $t(23) = 1.43, p = 0.17$) or a disliked other ($M_{Empathic}$ = 1315.53ms vs. $M_{Own\ Fortune}$ = 1440.90ms; $t(23) = 1.86, p = 0.36$) than to make own fortune responses.

Summary

As for Experiment 8, participants reported less empathy and were slower to express empathy for the good and bad fortunes of a disliked other. Similarly, individuals lower in empathic concern expressed less empathy and were slower to express empathy than individuals higher in empathic concern, particularly for the good and bad fortunes of a disliked other. Moreover, this was not due to differences in how high and low EC participants responded to the manipulation. A mixed two-way ANOVA of other (like/dislike) and EC (low/high) performed on participants' ratings of liking revealed no main effect of EC ($F(1,50) < 1$, $\eta_p^2 = 0.00$) and no interaction between other and EC ($F(1,50) < 1$, $\eta_p^2 = 0.01$), suggesting that the manipulation was equally successful for both participants high and low in EC.



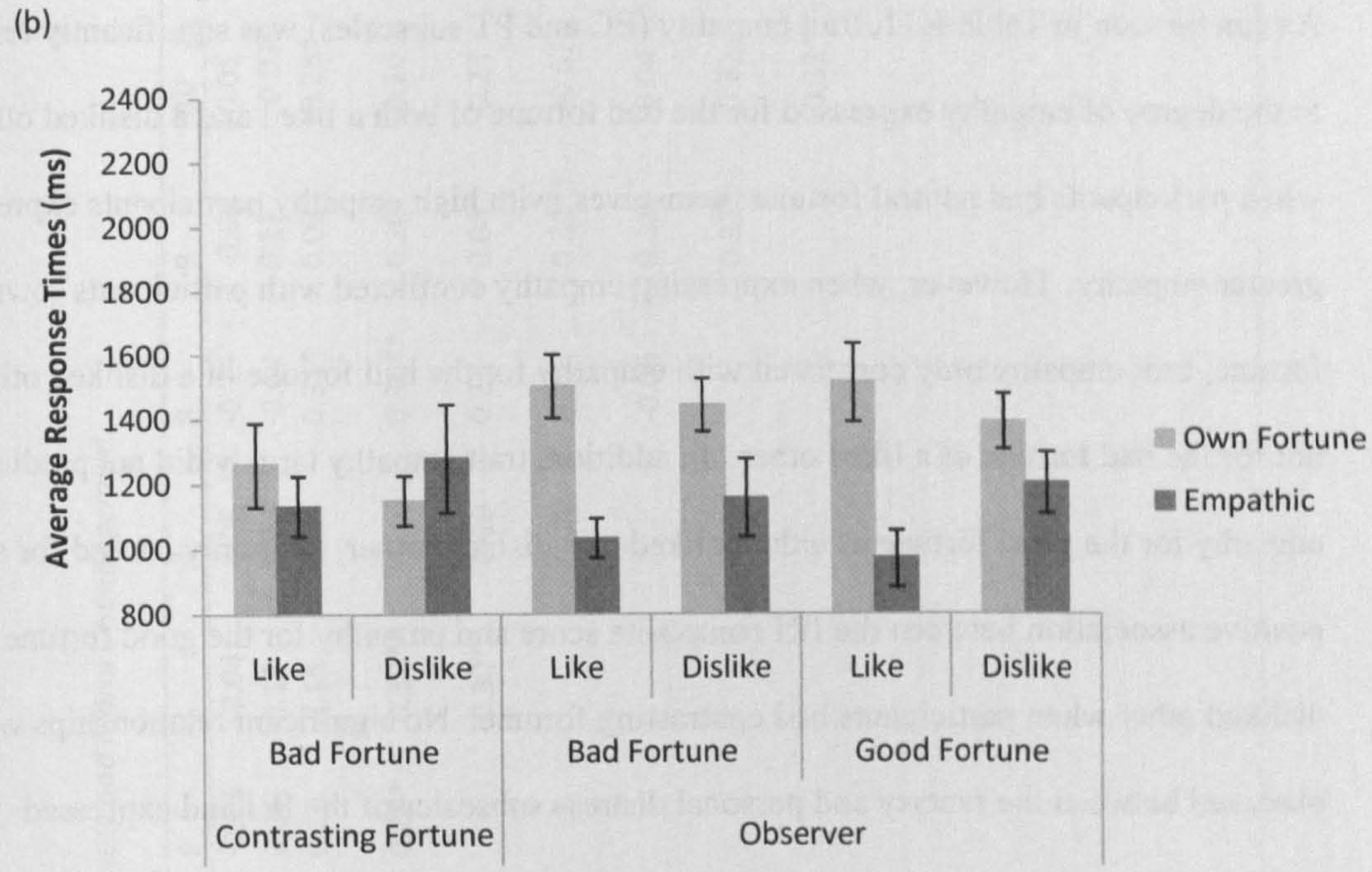


Figure 6.7. Average response times (ms) of low EC (a) and high EC (b) participants to express empathy for the bad fortune of a liked/disliked person (or to make responses in line with their own fortune) when their fortune was contrasting or neutral, and to express empathy for the good fortune of a liked/disliked person (or to make responses in line with their own fortune) when their fortune was neutral in Experiment 9. Error bars represent 1 Std. Error.

Correlations with individual differences in moral identity and empathy

In the initial analyses, empathic concern scores were used to examine the effect of trait empathy on empathy for a liked and disliked other based on the findings from Experiment 8. However, in order to be able to examine the relationship between the other subscales of the empathy measure (IRI) and to investigate, for the first time, the influence of moral identity on participants' emotional responses a correlational analysis was performed. Participants' average scores on the individual difference measures are displayed in Table 6.9, with the relationship between them displayed in Table 6.10. The relationship between trait empathy and moral identity, and expressed empathy is displayed in Table 6.11.

As can be seen in Table 6.11, trait empathy (EC and PT subscales) was significantly related to the degree of empathy expressed for the bad fortune of both a liked and a disliked other when participants had neutral fortune themselves, with high empathy participants expressing greater empathy. However, when expressing empathy conflicted with participants' own fortune, trait empathy only correlated with empathy for the bad fortune of a disliked other and not for the bad fortune of a liked other. In addition, trait empathy largely did not predict empathy for the good fortune of either a liked or a disliked other, with only a trend for a positive association between the IRI composite score and empathy for the good fortune of a disliked other when participants had contrasting fortune. No significant relationships were observed between the fantasy and personal distress subscales of the IRI and expressed empathy.

Moral identity (internalization or symbolization) did not predict either negative or positive empathy for a liked person. Neither did it predict positive empathy for a disliked other. However, the higher individuals were in internalization the more empathy they expressed for the bad fortune of a disliked other when they had contrasting fortune themselves and there was a trend for individuals higher in internalization to express greater empathy for the bad fortune of a disliked other when they had neutral fortune.

Table 6.10

Correlations Between Trait Empathy, Moral Identity and Moral Disengagement.

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Internalization	0.14	*-0.23*	-0.17	-0.05	-0.04	0.06	-0.25⁺	-0.02	0.05	-0.15	0.18	0.45**	0.03	0.18	0.33*
2. Symbolization		*-0.16*	-0.06	0.06	0.12	0.24⁺	-0.04	0.11	-0.07	0.04	0.17	0.40**	0.31*	-0.03	0.30*
3. Moral Justification			0.57**	0.16	0.15	0.09	0.31*	0.09	0.28*	0.62**	0.08	-0.19	-0.31*	0.02	-0.11
4. Euphemistic Labelling				0.28*	0.38**	-0.03	0.35**	0.20	0.20	0.65**	-0.09	-0.43**	-0.42**	-0.16	-0.39**
5. Advantageous Comparison					0.30*	0.10	0.24	0.08	0.23	0.41**	-0.13	-0.09	-0.25⁺	0.04	-0.15
6. Displacement of Responsibility						0.21	0.22	0.33**	-0.07	0.52**	-0.08	-0.20	-0.10	-0.03	-0.15
7. Diffusion of Responsibility							-0.06	0.28*	0.04	0.40**	0.13	0.31*	0.06	0.24	0.29*
8. Distortion of Consequences								0.32*	0.22	0.59**	-0.31*	-0.36**	-0.08	-0.11	-0.34**
9. Attribution of Blame									0.32*	0.59**	-0.10	-0.36**	-0.12	0.13	-0.16
10. Dehumanization										0.53**	-0.05	-0.24	-0.22	0.05	-0.15
11. Moral disengagement											-0.11	-0.34**	-0.32*	0.05	-0.24
12. FS												0.40**	-0.01	0.29*	0.72**
13. EC													0.46**	0.15	0.74**
14. PT														0.02	0.46**
15. PD															0.63**
16. IRI															

⁺ $p = 0.06$, * $p < 0.05$, ** $p < 0.01$

Table 6.11

Correlations Between Trait Empathy and Moral Identity, and Empathy for a Liked and a Disliked Other.

	'Observer'				'Contrasting Fortune'			
	Positive Empathy		Negative Empathy		Positive Empathy		Negative Empathy	
	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike
Internalization	-0.18	0.04	0.24	0.25^{+}	0.17	0.12	0.12	0.28*
Symbolization	-0.03	-0.14	0.15	0.06	-0.10	-0.09	0.00	-0.05
Fantasy	0.10	-0.06	0.22	-0.07	-0.12	0.20	0.15	-0.11
Empathic Concern	0.08	0.02	0.31*	0.34**	0.04	0.13	0.23	0.31*
Perspective-Taking	0.18	0.16	0.38**	0.29*	0.07	0.08	0.12	0.24^{+}
Personal Distress	-0.05	-0.20	0.24	-0.03	-0.03	0.19	-0.02	-0.05
IRI Global Score	0.10	-0.06	0.43**	0.16	0.02	0.24^{+}	0.18	0.12

$^{+}p = 0.06$, $^{*}p < 0.05$, $^{**}p < 0.01$

Effect of Deservingness

Empathy was less for a disliked other than for a liked other and participants judged the disliked other to be more deserving of bad fortune and less deserving of good fortune than the liked other. This is compatible with the suggestion that individuals expressed less empathy for the disliked other because they considered them deserving of their bad fortune and not deserving of their good fortune. To test this more directly, perceived deservingness ratings were correlated with expressed empathy. Even for a liked person, 'observer' negative empathy ($r = 0.43, p = 0.001$) and 'contrasting fortune' negative empathy ($r = 0.34$, $p < 0.01$) was positively related to how deserving participants considered that person to be of good fortune. 'Observer' negative empathy for a liked person was also negatively correlated with participants' ratings of how deserving the like person was of bad fortune ($r = -0.35, p < 0.01$). Similarly, the more participants rated the disliked person as being deserving of good fortune, the greater their 'contrasting fortune' negative empathy ($r = 0.27, p < 0.05$) and the greater their 'observer' negative empathy ($r = 0.34, p < 0.01$) for the disliked other. In addition, the more participants rated the disliked person as deserving of good fortune ($r = 0.37, p < 0.01$) and the less participants rated the disliked person as deserving of bad fortune, the higher their 'observer' positive empathy for the disliked person ($r = -0.30, p < 0.05$).

Moral Disengagement

The effect of perceived deservingness on participants' empathy is compatible with moral disengagement as an explanation for why individuals displayed less empathy for a disliked other. Further evidence for this might be if reduced empathy for a disliked person was related to participants' tendency to use cognitive reasoning to justify non-moral behaviours. This was examined by calculating the extent to which individuals modified their empathy based on their attitude towards the other person (e.g. negative empathy towards liked other – negative empathy towards disliked other) and correlating this score with participants' scores on the moral disengagement scale. The higher the difference score, the greater the effect liking had on the degree to which individuals expressed empathy. As can be seen in Table 6.12, two subscales of the moral disengagement questionnaire were significantly related to reduced empathy for a disliked other. Firstly, the higher participants scored in moral justification the more they modulated their empathy for the bad fortune of a disliked other (compared to empathy for the bad fortune of a liked other). Secondly, the higher individuals scored in 'dehumanisation' the more they modulated their empathy for the good fortune of a disliked other (compared to empathy for the good fortune of a liked other) when having neutral fortune. Thus, the tendency of individuals to engage in cognitive reasoning to justify non-moral behaviours was associated with reduced empathy for a disliked other.

Table 6.12

Correlations Between Moral Disengagement Subscales and Reduced Empathy for a Disliked Other (Compared to a Liked Other)

	'Observer'		'Contrasting fortune'	
	Positive Empathy Difference	Negative Empathy Difference	Positive Empathy Difference	Negative Empathy Difference
Moral Justification	0.22	0.24+	0.11	0.36**
Euphemistic Labelling	0.03	0.03	0.09	0.10
Advantageous Comparison	-0.03	-0.16	-0.08	0.07
Displacement of Responsibility	-0.02	-0.00	0.13	0.08
Diffusion of Responsibility	0.07	-0.10	-0.12	0.13
Distortion of Consequences	0.07	0.19	0.12	0.00
Attribution of Blame	-0.05	0.10	-0.06	-0.04
Dehumanization	0.29*	0.16	-0.10	0.06
Moral disengagement	0.18	0.14	0.01	0.15

+$p = 0.06$, *$p < 0.05$, **$p < 0.01$

Social comparisons

Finally, the influence of social comparison processes was examined. To recall, it was possible to class the contrasting fortune scenarios used in the paradigm as being lower or higher in the potential to trigger social comparisons based on whether the contrasting fortunes of self and other were in the same domain (a haircut disaster/a flattering and admired haircut) or in a different domain (having a laptop stolen/winning an award). Advantage was taken of this feature of the scenarios to search for preliminary evidence for the influence of social comparisons on how participants responded to the good (and bad) fortunes of others when their own fortune was contrasting. A repeated measure MANOVA was performed on negative and positive empathy when receiving contrasting fortune, with the factors liking (like/dislike) and comparison (low/high). Only effects relevant to comparison will be reported as the effects of liking have already been reported (Figure 6.8). The omnibus analysis revealed a trend for an effect of comparison ($F(2,59) = 3.05, p = 0.06, \eta_p^2 = 0.09$). Univariate analyses indicated that there was an effect of comparison on positive empathy when receiving contrasting fortune ($F(1,60) = 6.10, p < 0.05, \eta_p^2 = 0.09$), with participants expressing less positive empathy for the other following scenarios high in social comparison ($M = -9.02$) than following scenarios lower in social comparison ($M = 4.71$). In contrast, there was no effect of comparison on negative empathy ($M_{Low} = 25.81$ vs. $M_{High} = 22.89$; $F(1,60) < 1, \eta_p^2 = 0.01$). Comparison did not interact with liking on either positive or negative empathy ($p > 0.33$). In sum, situations that may promote comparisons between one's poorer fortune and another person's better fortune may be less likely to elicit positive empathy.

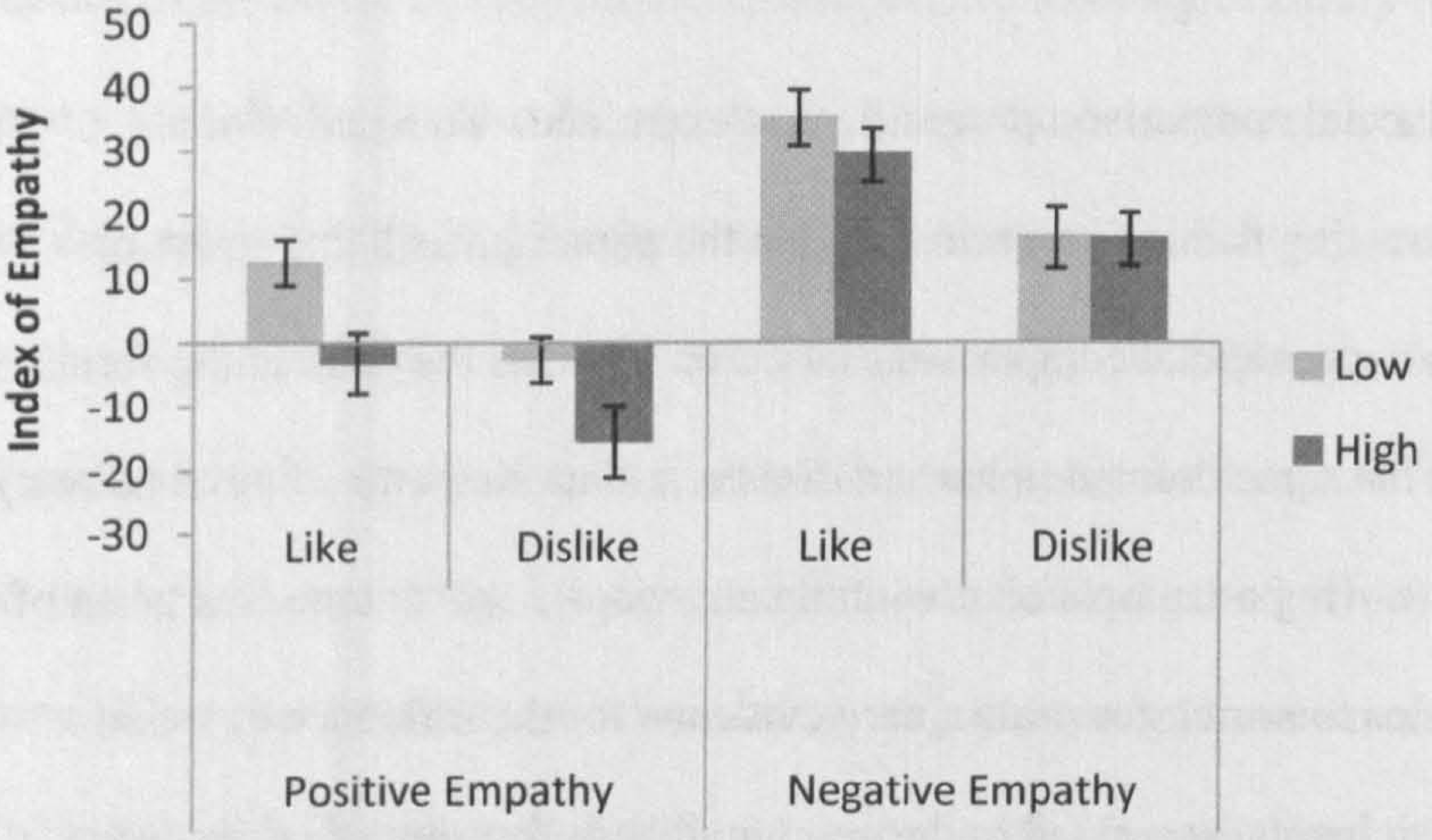


Figure 6.8. Empathy expressed towards a liked and a disliked person's good fortune (positive empathy) and bad fortune (negative empathy) in Experiment 9 when participants had contrasting fortune in scenarios low or high in the potential to trigger social comparisons. Error bars represent 1 Std. Error.

DISCUSSION

Participants expressed less positive and negative empathy for a disliked other, both when they had neutral fortune and when they received contrasting fortune. This replicates the findings of Experiment 8 in a within-subject design, suggesting that individuals are able to rapidly turn their empathy on and off depending on how much they like the recipient of the fortune. The effects of dispositional empathy were also largely replicated, though the correlations between trait empathy and empathy for a disliked other were not as large or as consistent. One explanation for this might be that individuals had difficulty keeping track of the liked and the disliked other in the scenarios, such that individuals low in trait empathy were less able to reliably adjust their emotional response in line with their knowledge of the person. Against this, ratings of liking for the liked and the disliked other were slightly *more* polarised when the same individuals were exposed to both others (Experiment 9) than when the liked and the disliked other were presented to different participants (Experiment 8), suggesting that participants had formed a clear impression of each other. However, it may take more cognitive control to be able to reliably modulate empathy on a scenario by scenario basis, depending on whether the recipient of the bad or good fortune is likeable or not than maintaining an empathic or non-empathic stance over a session. In support of this, there was a tendency for low EC participants to show greater 'observer' positive empathy towards a disliked other when exposed to the fortunes of both a liked and a disliked other (Experiment 9) than when only exposed to the disliked other (Experiment 8). High trait empathy individuals also showed slightly greater modulation of empathy according to the characteristics of the other in this experiment; this may also be due to the nature of the within-subject design. Consistent with the greater polarisation of liking for the disliked and the liked other in this experiment, the unpleasant behaviour of the disliked other may have been perceived in a more negative light given the pleasant behaviour of the liked other, leading even high empathy participants to modulate their empathy. However, despite small discrepancies in the specific effects of trait empathy on empathy for a liked and disliked other, both experiments consistently indicated that when expressing empathy for the bad fortune of another person conflicted with participants' own good fortune, trait empathy was only significantly related to empathy for a disliked other.

There was also evidence to support the role of moral regulatory mechanisms in empathic behaviour. When self interest (the participant's own fortune) conflicted with empathy, individual differences in moral attitudes influenced the degree of empathy expressed towards a disliked other. Specifically, individuals who had a weaker moral identity, and individuals who were higher in moral disengagement, expressed less empathy for a disliked other. Two moral disengagement mechanisms, moral justification and dehumanisation, were related to differences in empathy towards a disliked other (compared to a liked other). Moral justification involves creating a reinterpretation of the non-moral act as having a social or moral purpose, such that it is no longer seen as non-moral (Bandura et al., 1996). Thus, failing to show empathy towards the disliked person may be viewed as a form of altruistic punishment (Fehr & Gächter, 2002), in which individuals display little empathy to 'punish' the disliked other for not acting in a socially acceptable way. Dehumanisation, on the other hand, focuses on the object of the non-moral act rather than the act itself and results in the object no longer being seen as a person with feelings, desires and other human qualities (Cortes et al., 2005; Leyens et al., 2000). It could be argued that to the extent that a person is not seen as having feelings, their misfortunes may not elicit empathy. Consistent with this, Decety et al. (2010) found that, as well as showing reduced empathy to the pain of individuals believed to have caught AIDS from drug-use, participants also attributed less pain to these individuals. In sum, dislike for a person may activate a set of cognitive mechanisms that disinhibit or override self-regulatory mechanisms that promote empathic behaviour, allowing individuals to respond according to their own self-interest (their good fortune).

Further support for the involvement of moral disengagement mechanisms was the finding that liking influenced appraisals of deservingness, which in turn influenced the amount of empathy expressed towards that person's fortune. This is compatible with previous studies that have found effects of deservingness on empathy (Brigham et al., 1997; Decety et al., 2010; Feather, 2008). Interpreting a person's bad fortune as deserved may allow individuals to justify not responding empathetically. Interestingly, deservingness of good fortune was a stronger predictor of negative empathy than deservingness of bad fortune. It could be speculated that the moral acceptability or social undesirability of reporting that someone would deserve bad fortune (relative to reporting that they don't deserve good fortune) may have influenced ratings and obscured the relationship between perceived deservingness of bad fortune and empathy.

It has also been suggested that having a strong moral identity might protect against the disinhibitory effects of moral disengagement on moral behaviour (Aquino et al., 2007). In support of this, Detert et al. (2008) found a small negative correlation between moral identity and moral disengagement. This is compatible with the findings in the current study that moral identity was positive correlated with, and moral justification negatively correlated with, empathy for a disliked person. However, unlike Detert et al. (2008), in the current study none of the moral disengagement subscales were correlated with moral identity. This may be due to the smaller number of participants tested, but it might suggest that facilitatory (moral identity) and inhibitory (moral disengagement) regulation mechanisms may to some extent be dissociated in individuals.

Finally, Experiment 9 also found evidence for the involvement of social comparison processes in empathy, finding that responses to the good fortune of others were less positive when participants had bad fortune that directly contrasted with the other's good fortune than when their bad fortune only contrasted on a valence dimension. In other words, scenarios that were considered intuitively to have a greater potential to trigger social comparisons (based on the relevance of the other person's situation to participants' own situation) resulted in less positive empathy for the other person's good fortune. In contrast, no effect of social comparison was found for negative empathy, suggesting that negative empathy may be less dependent on how one's own fortune compares with another person's fortune.

GENERAL DISCUSSION

Ortony et al. (1988) suggested that feelings of good will for the successes of others and feelings of sympathy for the misfortunes of others are influenced by the degree to which the other is perceived to deserve the event and the extent to which the other is liked. Experiment 8 provided evidence for the effect of liking on empathy, while Experiment 9 replicated this finding and extended it to show that liking was associated with perceived deservingness of good and bad fortune and that perceived deservingness was related to the degree of expressed empathy.

Empathy was reduced, but still expressed, for a disliked person's bad fortune (at least in those higher in empathic concern and moral identity). This contrasts with the findings of Hareli and Weiner (2002), who found that participants reported pleasure at a disliked other's bad fortune. However, in this study participants were directly asked to report how happy they would be on hearing about that person's bad fortune, rather than the good/bad judgment made here. It is possible that individuals may have experienced both pleasure and sympathy at the disliked other's misfortune, but that feelings of sympathy predominated, or that moral pressures to respond sympathetically won out (see below). In support of this, in Brigham et al.'s (1997) study, although participants reported greater pleasure and less sympathy following an envied person's bad fortune (compared to a non-envied person), their sympathy was still rated higher than their pleasure. Moreover, the finding that participants took longer to express empathy for a disliked other than for a liked other is compatible with greater conflict between feelings of pleasure and feelings of sympathy in response to a disliked other's misfortune. It is also possible that repeatedly imagining oneself in social situations with another person may foster empathy, making it difficult to remain emotionally detached from the fortunes of even a disliked other. Proximity and familiarity are thought to increase empathy (de Vignemont & Singer, 2006; Loewenstein & Small, 2007) and even if familiarity breeds dislike, it may be difficult to divorce oneself from the emotional experiences of people we know well when confronted with their fortunes.

Responsivity to and understanding of other people's emotional states is thought to vary across individuals, but self-report measures of empathy have not always been found to predict behavioural measures of empathy (Zaki et al., 2008, 2009a). One reason put forward for this is that trait empathy may only predict empathy under a certain set of conditions (Zaki et al., 2008). Consistent with this, trait empathy was more strongly associated with empathy for a disliked other than for a liked other. To my knowledge, this is the first study to measure both trait empathy and empathy for a disliked other and suggests that trait empathy may be a stronger predictor of empathy in situations where a person's behaviour makes it difficult to feel empathy for them. From the four subscales of the interpersonal reactivity index, empathic concern, described as reflecting an other-oriented response to other people's misfortunes (Eisenberg & Eggum, 2009), was most consistently related to the degree of empathy expressed. In contrast, personal distress, thought to reflect an aversive emotional response to other people's emotions did not predict empathy (Eisenberg & Eggum, 2009). This relationship between EC and participants' empathy is compatible with the view that participants modulated their emotional responses in sympathy for the other person's bad fortune.

Empathy has been linked with moral socialisation (Blair & Blair, 2009; Hoffman, 2000) and moral behaviour (Eisenberg & Miller, 1987). Deficits in moral reasoning are commonly reported in conjunction with disturbed emotional responding and emotion recognition in psychopathy and following brain lesions to the ventral medial prefrontal cortex (Anderson, Bechara, Damasio, Tranel, & Damasio, 1999; Blair & Blair, 2009; Huebner, 2009). Compatible with this literature, Experiment 9 found that moral identity was associated with empathy for a disliked other in situations where expressing empathy conflicted with participants' own fortune. Reed and Aquino (2003) have suggested that individuals high in moral identity have a wider boundary of those who they feel obligated to extend their moral regard, finding that individuals high in moral identity are more willing to exchange feelings of respect, pride and admiration with strangers and have a more favourable attitude to relief efforts directed at outgroups than individuals who place less importance on their moral identity. Thus, individuals high in moral identity may feel more obligated to behave morally towards even a disliked person.

Individuals may behave morally for two reasons, to appease their conscience and in order to avoid condemnation from others (Batson, 2008). A limitation of self-report measures of emotion is that they may be influenced by socially desirable responses (Hareli & Weiner, 2002; van Dijk et al., 2008). However, it is argued that the use of a large number of scenarios, not all of which provoked an empathic response (in some the other had neutral fortune), presented within a speeded computer task, as well as the indirect measure of empathy used, may have reduced social presentation concerns and fear of condemnation. Moreover, the symbolization subscale of the moral identity measure, reflecting public demonstrations of morality (Aquino & Reed, 2002; Reed & Aquino, 2003), was not associated with empathy in the task. Internalised moral standards (their conscience), however, may demand that individuals respond empathically. Strong moral values may be particularly important when behaving morally conflicts with self-interest (Batson, 2008), explaining why moral identity was most strongly associated with negative empathy when expressing feeling bad for the other person's bad fortune conflicted with participants' own good fortune. Further, empathic responses may be reinforced by positive feeling from knowing that one has behaved compassionately (Batson et al., 1991; Kim et al., 2009; Tangney et al., 2006) and by anticipatory guilt for not doing so (Huebner, 2009; Tangney, 1991).

Moral disengagement was also associated with the degree to which individuals adjusted their empathy for a disliked other. This is consistent with the finding of Detert et al. (2008) who found that moral disengagement was negatively related to empathy. It has been suggested that individuals act in ways to minimise dissonance between their self concept, including their moral identity, and their behaviour (Stephenson & Wicklund, 1983). Following this, individuals may respond empathically in order to reduce discrepancies between their moral conscience and their behaviour. However, if dissonance can be reduced by cognitive reasoning justifying non-moral actions (moral disengagement) then less empathy may result. It is acknowledged that this conclusion may be limited to behavioural expressions of empathy (such as self-reports of emotion and helping behaviours); moral identity and disengagement may not affect emotional responses to the fortunes of others.

The mechanisms underlying individual differences in empathy are not well understood, though Singer and Lamm (2009) have suggested that they may be attributed to either differences in the generation of emotional responses (or emotional resonance) or to differences in cognitive control mechanisms. Montgomery, Seeherman, and Haxby (2009) have proposed that individuals with a stronger capacity to consider the perspective of others may have a human mirror neuron system specially tuned to detect cues and actions with social meaning. It has also been suggested that individual differences in trait empathy may influence the extent to which individuals rely on regions involved in mental state attribution and shared representation/mirror neuron areas associated with more emotional processing during empathy-related tasks (Zaki et al., 2009b). Thus, it could also be speculated that individuals high in empathic concern may rely more on an experiential approach when imagining how they would feel, recruiting brain structures involved in the shared experience of emotions (Rameson & Lieberman, 2009). In contrast, low trait empathy participants may rely more on a theory-driven approach, being influenced by their knowledge of how people respond to emotional situations (Rameson & Lierberman, 2009; Schaefer et al., 2003). This may offer one interpretation of the stronger effect of trait empathy on empathy for a disliked other if it is assumed that the theory-laden route is more susceptible to the damaging influence of negative person appraisals. Alternatively, differences in regulatory mechanisms may be able to account for the effects of individual differences in empathy. Individuals higher in trait empathy are more guilt prone (Tangney, 1991) and more strongly recruit the subgenual cingulate cortex when reading guilt scenarios, an area associated with feelings of guilt for acting counter to societal values, (Zahn, de Oliveira-Souza, Bramati, Garrido, & Moll, 2009). In Experiment 9, empathic concern was highly correlated with moral identity and therefore it is possible that stronger adherence to moral values may explain why individuals high in empathic concern expressed greater empathy for a disliked other. Further work, using physiological and neuroscientific methods, is needed to explore the mechanisms through which individual differences modulate empathy.

Positive empathy was less for a disliked other than for a liked other, but was less influenced by individual differences than negative empathy. One explanation for this, at least in situations of contrasting fortune, might be the lack of variation or floor effects in positive empathy which may have made it difficult to detect relationships with other measures, though this may not explain why few factors predicted positive empathy when participants' own fortune was neutral. Previous research has shown that another person's superior fortune can lead to feelings of unfairness and envy, strong negative feelings associated with activity in brain regions involved in processing pain, such as the anterior insula (Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003; Takahashi et al., 2009). Moreover, these studies have also suggested that feelings of unfairness may be so strong as to produce pleasure at the other person's misfortune or a desire to punish the other even at a cost to oneself (Sanfey et al., 2003; Singer et al., 2006). Thus, in the current study, one explanation of why positive empathy was limited in scenarios where participants had contrasting fortune is that the other person's good fortune triggered comparisons with participants' own bad fortune, eliciting envy. Compatible with this, slightly less positive empathy was expressed in scenarios assumed to promote comparisons between the fortunes of participants and the other person. Moreover, as the study was designed to look for positive empathy, rather than envy, it may not have captured the extent of participants' envy. Negative affect was close to ceiling when no emotional event happened to the other and therefore there was little scope to detect an increase in negative affect (indicating envy) as a result of the other's good fortune. Conversely, an argument could also be made to suggest that positive empathy may have been artificially low in Experiments 2-9 because (and compared to negative empathy) it may be difficult to elicit in experimental conditions, demanding an emotional attachment to the other (Royzman & Rozin, 2006).

Although no effect of social comparison was found on negative empathy, it is possible that social comparisons may also motivate empathic responses when one's own fortune is better than another person's. Positive inequity may be sufficient to lead to feelings of guilt, which may then motivate prosocial behaviours (Baumeister et al., 1994). In one study, for example, individuals were asked to imagine that they were rewarded either more, the same or less than another person who had perform similarly in a situation and reported their satisfaction, anger and guilt in response (Austin et al., 1980). Individuals were less satisfied if they had been under-rewarded, but receiving more compensation than the other person led to feelings of guilt. Moreover, positive inequity has even been shown to motivate helping behaviours, even when such behaviours are dishonest and come at a cost to oneself (Gino & Pierce, 2009). In this study, participants were assigned to one of two roles in an anagram solving task: a solver and a grader. The solver would receive a small sum of money for each correct answer, while the grader would either receive the same amount or lose the same amount for each answer the solver got correct. Before doing the task the relative wealth of the grader and solver was manipulated through a lottery, creating poor or wealthy solvers. This study found that even when the grader would lose money by assigning more correct answers to the solver, wealthy graders often reported that poor graders received more correct answers than they actually did, in effect awarding them more money despite a cost to themselves. Thus, not only may anticipatory guilt deter a non-empathic response (Eisenberg, 2000), but guilt resulting from awareness that one's own fortune is better than another person's may also dampen one's own pleasure at receiving good fortune and motivate empathic responses.

Social comparisons are pervasive and may play an important role in how we respond to the emotional states of others. Though situations of contrasting fortune may be mostly likely to trigger social comparisons, individuals may still engage in social comparisons (though perhaps less extensively) when simply observing the good or bad fortune of the other, where there is still a discrepancy between one's own and the others' fortune, albeit less explicit and less extreme. It is acknowledged that the current study may have promoted social comparisons by providing explicit information about another person's fortune, but it is argued that social comparisons are likely to be common in many real life situations. In Experiment 9, contrasting fortune scenarios were split into those high and low in social comparison based on whether they afforded comparisons in the same domain or just on an affective dimension, but it may also be interesting to examine whether other factors known to influence social comparison processes (e.g. the importance of the domain to self, the closeness of the other, the stability of the comparison dimension; Smith, 2000; Mussweiler, Rüter, & Epstude, 2004; Tesser & Collins, 1988) may also influence responses to the fortunes of others.

The studies presented in this chapter highlight the complexity of empathy, showing that characteristics of the target (liking, deservingness), the empathiser (moral identity & moral disengagement, trait empathy) and the situation (low/high social comparison) may all combine to modulate empathy in various ways. The final chapter discusses these influences in relation to theoretical ideas of empathy in the literature, but some limitations of the current studies are first outlined here. One limitation of the studies was that the self-report measures were obtained in the same session as empathy. However, the self-report measures were completed following the empathy task and the manipulation checks (liking, deservingness ratings etc.) and it is difficult to make straightforward predictions of how making emotional judgments would affect responses to items on the self-report questionnaires. Secondly, experimenter demand is always a concern when using self-report measures. It is possible that participants may have guessed the study was looking at empathy, encouraging them to respond accordingly. The findings of McHugo et al. (1985) might suggest that experimenter demand may contribute to findings showing effects of person appraisals on empathy. This study found that only self-report measures of empathy were affected by the attitudes of participants towards the target, and that physiological measures of emotions (EMG, SCR) were not. However, experimenter demand is not the only explanation of this finding; because the study measured participants' emotional response to visual expressive displays of a target, it is possible that these displays elicited conditioned responses that were independent of participants' appraisals, but that appraisals may have influenced participants' subjective emotional experiences nonetheless (McHugo et al., 1985). In further support for the effects of person appraisals on empathy, Singer et al. (2006) have shown that person appraisals can influence empathy at the neural response level, which may be less subject to the influence of demand characteristics. It is also not clear how experimenter demand would explain the positive-negative asymmetry in empathy, as experimenter demand might expect that individuals should respond more positively in response to the good fortune of another person, as well as negatively in response to the bad fortune of the other. In addition, this account would also need to assume that high trait empathy individuals are more susceptible to experimenter demand than low trait empathy people. Consistent with this, Archer, Diaz-Loving, Gollwitzer, Davis, and Foushee (1981) found that individuals high in trait empathy reported greater empathic concern in response to listening to a person's distressing situation when given false feedback suggesting they were highly aroused when it was clear that the experimenter was aware of the arousal feedback (high demand) than when it was believed that the experimenter had no knowledge of this (low demand). This was not the case for individuals low in empathic concern. However, against this, it was low trait empathy individuals in the current study who were more susceptible to the effects of person appraisals, which would not be predicted if high trait empathy individuals are more sensitive to experimenter demand. Thus, it is argued that experimenter demand cannot explain all the data. A final limitation of the current studies was that the number of participants limited the ability to explore interactions between the different variables, but despite this Experiments 8 and 9 highlighted a number of interesting observations that might be explored further in larger-scale studies.

In summary, a negative attitude towards a person was found to lead to judgments about that person's deservingness of good and bad fortune, influencing empathy for that person's fortunes, and pleasure for another person's good fortune was found to be limited by comparisons with the empathiser's own poorer fortune. However, such responses to the fortunes of others were also modulated by individual differences in trait empathy and moral attitudes. This chapter, therefore, provides evidence for top-down modulatory and regulatory control processes in empathic behaviour.

The final chapter summarises the findings of the studies presented in Chapters 2-6 and discusses these in relation to theoretical ideas of empathy.

Chapter 7

Discussion

The experiences of others frequently evoke emotional reactions in us, but when and how we respond to the fortunes of others may be determined by many factors. This thesis looked at cognitively-evoked empathy (generated through perspective-taking in the absence of direct external cues to the emotions of others) and its modulation. The first empirical chapter was devoted to developing a behavioural paradigm to investigate empathy for the good, as well as the bad, fortunes of others and in situations when the empathiser may have contrasting fortune to the other. This paradigm was then used in studies presented in the following four chapters to explore how responses to the good and bad fortunes of others may be affected by factors such as the empathiser's own fortune, the perspective adopted, the character of the other and by individual differences. This chapter first reports on the findings of these studies and then follows by discussing how these findings relate to theoretical ideas of empathy and by considering limitations of the studies.

Overview of Experiments

Experiment 1 began with the aim of developing a behavioural paradigm to investigate emotional perspective-taking and empathy across a wide range of emotional situations and in the absence of observable cues to a person's emotional state. The task took the form of short written scenarios describing events that would be expected to elicit an emotion in one or two protagonists in the scenarios, and participants were required to identify which of two emotions would best describe how one protagonist would feel under speeded conditions (self and other perspective-taking). The results indicated that this paradigm could work to investigate emotional perspective-taking and empathy. Firstly, there was evidence to suggest that individuals adopted a perspective when imagining the situations, indicating their involvement in the scenarios. Consistent with this, the processing cost (the increase in response time) required to disambiguate conflicting perspectives was particularly marked when participants judged another person's perspective and the conflicting perspective was associated with a self-referent (seeming to be more salient). Secondly, participants modulated their self-perspective judgments when the other person's emotional situation was negative, compatible with the experience of empathy for that person's misfortune.

Experiment 2 followed up the latter finding and aimed to add to the literature on empathy for positive states (Jabbi et al., 2007; Royzman & Rozin, 2006), examining empathy for the good, as well as for the bad, fortunes of others and sought to investigate the effect of the empathiser's concurrent fortune on responses to the fortunes of others. A modified version of the task used in Experiment 1 was used to do this, with participants asked to imagine themselves in a series of emotional situations in which another person had neutral, good or bad fortune, whilst their own fortune was neutral, good or bad. They then rated how they would feel in each situation (self perspective-taking) and the effect of the other person's concurrent good or bad fortune on emotional responses was measured. Another person's bad fortune had a marked effect on responses, resulting in negative responses when participants' own fortune was neutral, dampening their positive responses to good fortune, and even exacerbating already negative responses to bad fortune. In addition, another person's concurrent good fortune enhanced positive responses at receiving good fortune and resulted in positive responses when participants' own fortune was neutral. However, as striking as the impact of the other person's bad fortune was participants' lack of response to another person's good fortune when their own fortune was bad. Overall, Experiment 2 found direct empirical support for the assumption that negative is greater than positive empathy (Royzman & Kumar, 2001), and suggested that the empathiser's own fortune may be one factor that limits positive empathy for others.

Chapter 4 then focused on low-level mechanisms by which other people's emotions may influence our emotions and affective judgements (e.g. semantic interference and response competition; De Houwer, Hermans, Rothermund, & Wentura, 2002; Parkinson & Simons, 2009; Preston & Stansfield, 2008) and considered whether these could explain the effects of the other person's fortune on responses observed in Experiment 2. It was reasoned that if, in Experiment 2, information about another person's emotional experience activated representations that interfered in affective judgments at a semantic-level or at response, then other (and irrelevant) sources of emotion may have similar influences on affective judgments. Experiments 3 and 4 therefore asked participants to evaluate how they would feel in response to receiving neutral, bad or good fortune under two conditions of emotional conflict. In the first version, and like Experiment 2, another person in the situation was described as having conflicting fortune, whilst in the second version there was no other in the situations, but participants were exposed to conflicting emotional faces whilst processing the scenarios, presented as part of a secondary task and therefore as irrelevant to the situations. Another person's concurrent bad fortune within the scenario delayed judgments and resulted in less positive responses to good fortune, though responses to bad fortune were unaffected by another person's concurrent good fortune, mirroring the asymmetrical pattern observed in Experiment 2. In contrast, the same interference in affective judgments was not observed when conflicting (and irrelevant) emotional faces were presented during scenario processing. Although, Experiments 3 and 4 did not provide conclusive evidence that low-level processes were not involved, it was argued that these processes are unlikely to offer a full account of the effect of another person's concurrent bad fortune on participants' emotional judgments. Instead, it was proposed that information about another person's concurrent emotional experience may have also modulated responses via higher level processes such as perspective-taking (and empathy).

Chapter 5 looked at similarities and differences in how we think about ourselves and others and considered factors that may lead to different self and other predictions. Specifically, three experiments (5-7) investigated whether participants anticipate empathy in others and to the same extent as in themselves. In Experiments 5 and 6 participants were presented with scenarios describing their own fortune and another person's fortune (like in Experiments 2-4), but switched between judging how they would feel and judging how the other person would feel. Participants made similar emotional predictions for self and others; judging that another person would feel less positive at receiving good fortune when their own fortune was bad (anticipating negative empathy), but predicting that the other would feel just as bad at receiving bad fortune when their own fortune was good (anticipating a lack of positive empathy). Experiment 7 then showed the same response pattern when the second person in the scenario was another 'other' rather than the self. This indicated that participants' predictions of empathy in others were not just the consequence of using a self-referent as the empathy target (and therefore as a result of a conflicting self perspective being especially salient). Experiments 6 and 7 also showed that participants were slightly less sensitive to the concurrent fortunes of a second person when making other predictions compared to when making self predictions, appearing to anticipate less empathy in others and explicitly judging themselves to be more empathic than others (Experiment 7). However, this was only observed in conditions that encouraged participants to make faster responses (using a forced choice (Experiment 6 & 7) and not a rating response (Experiment 5)), with data tentatively suggesting that it took longer for participants to predict empathy in others than in self. It was suggested that discrepancies in self and other predictions can arise from using different sources of information in emotional predictions, from using different processing strategies (see theoretical implications below), or as a result of intuitive beliefs about others that lead them to be viewed as less sensitive (Epley & Caruso, 2009; Pronin, 2008). The results of Experiments 6 and 7 also indicated that empathic responses could be modified by perspective-taking instructions (Batson, 2009), providing support for the involvement of higher level processes in participants' affective judgments.

The final empirical chapter focused on the top-down modulation and control of empathy as well as the influence of individual differences. Experiment 8 investigated the influence of person appraisals on empathy, manipulating the likeability of a person in a between-subject design. Consistent with previous studies (Hareli & Weiner, 2002; Singer et al., 2006), the study found that participants expressed less empathy for the good and bad fortunes of a disliked other and were slower to express empathy when they did so. However, it also found that a strong predisposition to empathise protected individuals from the damaging effects of negative person appraisals on empathy, with individuals high in trait empathy (but not individuals low in trait empathy) still expressing a significant amount of empathy for a disliked other. Experiment 9 then replicated the effects of person appraisals in a within-subject design and, to a slightly weaker extent, the moderating effect of trait empathy. In addition, Experiment 9 found that individuals who placed greater importance on their moral identity were higher in trait empathy and expressed greater empathy for a disliked other's bad fortune. Conversely, there was evidence that moral disengagement was negatively associated with empathy for a disliked other. Thus, Experiment 9 suggested that behavioural expressions of empathy (at least) may be regulated by internalised moral standards, but that these regulatory-processes may be disinhibited by various cognitive appraisals or justifications (Bandura et al., 1996; Detert et al., 2008). Finally, Experiment 9 also found support for social comparison processes in empathy, with less positive empathy in situations that promoted comparisons between an empathiser's poor fortune and the other person's good fortune.

In sum, these experiments identified a series of factors that may modulate empathy for the fortunes of others, including the emotional valence of the other's fortune, the empathiser's own fortune, the likeability of the other, dispositional empathy, moral concerns, and even the perspective adopted. How factors such as these modulate empathy, and at what stage modulation occurs, is still an open question (de Vignemont & Singer, 2006). Moreover, current models of empathy have largely focused on emotional resonance mechanisms, which may not be sufficient to explain cognitively-evoked empathy (in the absence of direct cues to the emotional states of others) without calling on theories of mental state understanding, which themselves have often overlooked emotions as mental states. The next section attempts to first provide an integrative view of ideas of empathy and mental state understanding from the literature as they pertain to experiencing and understanding the emotional experiences of others, and then where possible to link in the findings from the current experiments, providing suggestions of how the factors identified in these experiments may modulate empathy. The processes involved in empathy are illustrated in Figure 7.1 and are described in detail below.

Theoretical Implications

Current models of empathy suggest that perception of other people's emotional states produces activation in shared representations involved in our experience of emotions, leading to feelings of empathy that may be inhibited or regulated by cognitive control mechanisms (Decety & Jackson, 2004; Preston & de Waal, 2002). Seeing someone smile, for example, may activate both motor and emotional representations, leading to mimicry of the emotional expression and feelings of happiness in the observer (Dimberg et al., 2000, Wild et al., 2001). Direct cues to other people's emotions, such as their facial expressions or prosody, may also be interpreted within the social context, drawing on information about the situation and the person, influencing an observer's emotions via appraisal processes (Parkinson & Simons, 2009). However, empathy can also be generated in the absence of direct cues to other people's emotions, such as in the experiments presented in this thesis, driven by top-down cognitive processing (Decety & Lamm, 2006). For instance, we may overhear someone gossiping about a friend, hear that their long-time partner has cheated on them and feel bad. In the absence of direct cues, individuals may rely on any information they have available to form representations of the other person's state (e.g. information about the situation and about the person; Davis, 2005).

The salience of cues to other people's states may affect whether these cues are perceived and how strongly the cues activate emotional representations (Preston & de Waal, 2002). Negative stimuli (e.g. negative facial expressions, negative events) may be intrinsically more

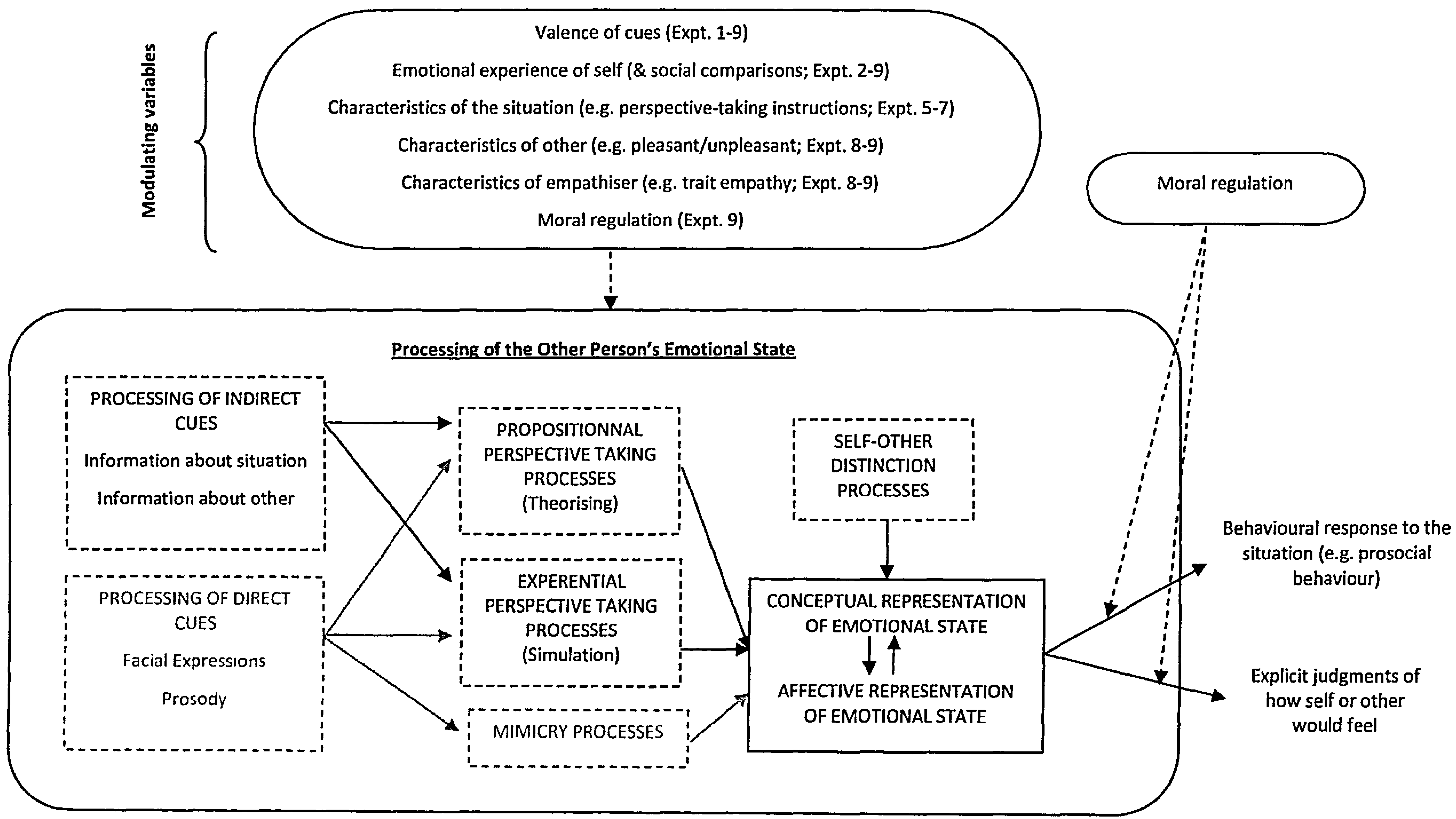


Figure 7.1. Processes involved in empathy and emotional perspective-taking in the absence of direct external cues to the emotions of others (in black), and with direct external cues to the emotions of others (added in grey).

salient than positive stimuli (negativity bias; Baumeister et al., 2001; Rozin & Royzman, 2001), offering one explanation of the modulating role of the valence of one's own and the other person's fortune in empathy (Experiments 2-9). Similarly, the emotional state of the empathiser may also affect whether cues to other people's state are detected, how they are interpreted and whether they activate emotion representations to the level of conscious awareness (Bower, 1981; Preston & de Waal, 2002). For instance, being in a negative mood may lower the activation threshold for negative cues to be detected (Bower, 1981; Niendenthal et al., 2000) or may lead ambiguous cues to be interpreted negatively (Keltner, Ellsworth, & Edwards, 1993). In addition, the empathiser's relationship to a target may also affect the likelihood of information about that person's emotional state being processed. For instance, having an affective link with the target, or being in close proximity or in an interdependent relationship with the target may influence whether cues to the other person's emotional state are processed (de Vignemont & Singer, 2006; Preston & de Waal, 2002). The fact that the experiments reported here demanded that participants process information about the other person's situation and gave the context of a close relationship with the other (even when the person was disliked) may have contributed to the significant empathy displayed towards that other's bad fortune. Individuals may be less likely to process or to become aware of the emotional states of strangers and more casual acquaintances in everyday life, resulting in less empathy.

Direct perception of other people's emotions may result in automatic emotional resonance or mimicry (e.g. Dimberg et al., 2000; Wicker et al., 2003). However, at least when there are no direct cues available (as in the experiments reported here), a representation of another person's emotional state might be formed using one of two processing strategies. The first has been described as propositional, rational, and as a theorising approach (Dunn et al., 2009; Epstein, 1998; Rameson & Lieberman, 2009; Schaefer et al., 2003), and involves use of rule-based knowledge, social schemas and emotional associations in order to construct a representation of the other person's state. This has been depicted as a cold, controlled and reasoned approach to processing emotions (Schaefer et al., 2003). In contrast, the second strategy is more experiential and may involve projecting oneself into the situation and simulating the feelings and thoughts that would be elicited in that situation (Rameson & Lieberman, 2009; Schaefer et al., 2003). This may be described as a hot or emotional processing approach and is thought to operate more automatically than the former route (Rameson & Lieberman, 2009). These approaches are thought to rely on different brain structures, the propositional recruiting areas involved in mental state attribution, such as the ventromedial prefrontal cortex and temporo-parietal junction, and the experiential utilising regions linked to shared representation systems, such as the inferior frontal gyrus (Schulte-Rüther et al., 2008). These two strategies may have different consequences, with the experiential more likely to activate autonomic and somatic reactions and the propositional mode supporting conceptual representations. However, these modes are thought to interact and it has been suggested that the use of one could trigger or inhibit the other (Rameson & Lieberman, 2009). For instance, engagement of the propositional approach to understand another person's state could give rise to an experiential response to that person's emotional state, while the propositional approach might up- or down-regulate experiential responses to observing other people's states (Rameson & Lieberman, 2009; Schaefer et al. 2003). The operation of both processing modes is thought to support empathy, but the extent to which individuals rely on each may depend on individual differences (e.g. dispositional differences, gender) and the situation (e.g. degree of emotional involvement, past experience of the situation and to features of the task; Danziger et al., 2009; Epstein, 1988; Rameson & Liberman, 2009; Schulte-Rüther et al., 2008; Zaki et al., 2009b). It could be speculated, for instance, that the use of these strategies may be influenced by perspective-taking instructions (Chapter 5) and by differences in trait empathy (Chapter 6). In support of the latter suggestion, Hooker et al. (2008) found that participants activated both emotion-related neural areas and regions involved in mental state attribution when predicting a target's emotional state. However, only activity in emotion-related areas (e.g. right somatosensory cortices and the thalamus), and not areas in mental state attribution (e.g. temporo-parietal junction), was related to self-reported empathy, suggesting that the use of a more experiential approach may be related to trait empathy. Furthermore, it could be speculated that the propositional mode may be more susceptible to modulation by cognitive appraisals than the experiential mode, providing an explanation for why individuals low in trait empathy were more affected by negative person appraisals in Experiments 8 and 9. In conjunction, two findings are compatible with the idea that a propositional processing mode may be more susceptible to effects of person appraisals than experiential processing. Firstly, it has been suggested that males may use a more cognitive approach to understanding other people's emotions, recruiting the temporo-parietal junction more strongly than females, and conversely that females may take a more emotional approach, more strongly recruiting areas involved in emotional processing and mirroring of other people's emotions (e.g. the inferior frontal gyrus, the insula and the amygdala; Derntl et al., 2010; Schulte-Rüther, Markowitsch, Shah, Fink, & Piefke, 2008). Secondly, one study found that only males (thought to rely more on cognitive processing) displayed a reduced empathic neural response to the pain of a negatively appraised target, while the empathy of females (thought to rely more on experiential processing) did not seem to be affected by these appraisals (Singer et al., 2006). In future research it might be interesting to investigate whether individuals differentially recruit brain regions involved in mentalizing and emotional processing when predicting empathy in self and others (Chapter 5), whether activity in these areas varies as a function of trait empathy (Chapter 6) and whether these two routes to understanding the emotions of others might be modulated by different variables.

The formation or activation of emotion representations (affective and/or conceptual) through direct perception or as a result of processes involved in mental state inference (e.g. simulation, theorising) may then give rise to an emotional response and/or emotion understanding. As suggested above, the affective and cognitive results of empathy may not be independent, but may mutually influence each other. For instance, an emotional response to another person's emotional state may be a source of information used to understand what that person is feeling (Niendenthal, Winkielman, Mondillon, & Vermeulen, 2009), while understanding of a person's emotional state may lead to sympathy (Eisenberg & Eggum, 2009). In addition, a mechanism for self-other distinction may be necessary to avoid confusion between our own mental states and other people's mental states (Decety & Jackson, 2004) and inhibitory control may be required to suppress a self perspective when evaluating another person's emotional state (Experiment 1; Hodges & Wegner, 1997).

Appraisals may affect whether or not empathy is generated and may modulate empathy (up or downwards) after a response is elicited (de Vignemont & Singer, 2006). These appraisals may include those relating to the character of the target, like in Experiments 8 and 9, such as how likeable they are or how much they are perceived to deserve their good or bad fortune (Decety, et al., 2010; Feather, 2008; Hareli & Weiner, 2002). Appraisals may also be affected by the empathiser's own situation due to the tendency of individuals to compare themselves to others in social situations (McFarland et al., 2001; Smith, 2000). For example, awareness that another person's fortune is better than one's own may lead to feelings of unfairness and envy, which may inhibit empathy for that person's positive state (Experiment 9; Brigham et al., 1997; Takahashi et al., 2009). It is not clear from current studies (reported here and in the literature) whether such appraisals may inhibit empathy before or after it is elicited and this is an important question for future research, requiring a measure sensitive to changes in emotional responses over a course of time. In addition, there is still the open question of whether neural evidence can be found for empathy for the good fortunes of others in the absence of direct cues to other people's positive states.

Cognitive understanding of a person's emotional state and/or an affective response to that person's state may then motivate behaviours such as expressions of sympathy and helping behaviours (Eisenberg, 2000). Regulatory mechanisms that lead us to adhere to moral standards governing behaviour may also determine whether or not we act empathically (Chapter 6; Aquino & Reed, 2002; Bandura et al., 1996). These moral standards may be more proscribed for behaviours in response to other people's negative states, such that other people's misfortunes are more likely to elicit overt expressions of empathy than their good fortunes. This may be another factor contributing to the negative-positive asymmetry in empathy observed in Experiments 2-9 (Royzman & Kumar, 2001). Conversely, cognitive mechanisms that disinhibit these regulatory processes (moral disengagement), which may be triggered by certain appraisals, may prohibit empathic behaviours (Bandura et al., 1996) and might even motivate actions designed to punish others for not behaving prosocially (e.g. altruistic punishment; Fehr & Gächter, 2002). Thus, individuals may have expressed less empathy for a disliked other in Experiments 8 and 9 because negative evaluations of that other's character triggered moral disengagement, with participants reasoning that the disliked other was not deserving of empathy, allowing them to justify to themselves not responding empathically. From the studies reported here it is not clear whether these moral processes might influence emotional responses to other people's states (or just whether or not empathy is expressed), but it possible that they might also lead to the up- or down-regulation of emotional responses to other people's states. As well as internal regulatory mechanisms, empathic behaviour may also be regulated by external factors, such as social pressures and fear of condemnation for failing to behave empathically (Batson, 2008).

Individuals may also be able to exert voluntary control over empathy in everyday life. They may engage in deliberative attempts to understand the emotional experiences of others in order to predict their actions (Decety & Jackson, 2004; Hodges & Wegner, 1997) or may use strategies to avoid awareness of, or to suppress responses to, a person's emotions due to perceived helpless in being able to relieve a person's distress (Hodges & Wegner, 1997) or because that awareness would make it difficult for them to behave according to their own self-interests (Batson, 2008). Finally, as well as understanding when and how people respond to the emotional states of others, there is still some work to be done to understand how dispositional differences may modulate empathy (Chapter 6). Effects of individual differences may occur due to differences in sensitivity to emotional and social cues

(Montgomery et al., 2009), to differences in emotional responsivity (Singer & Lamm, 2009), to differences in the use of mindreading strategies (Chapter 6; Zaki et al., 2009b) or to differences in regulatory control processes (Chapter 6; Eisenberg & Eggum, 2009; Papousek, Freudenhaler, & Schulter, 2008). For instance, the effects of trait empathy observed in Experiments 8 and 9 might have occurred due to differential use of cognitive and experiential processing in low and high trait empathy individuals (see above) or as a result of high trait empathy individuals having more rigid moral regulatory control mechanisms.

Responses of participants to the fortunes of others in the studies reported in this thesis have to this point been described as empathy, as a superordinate term encompassing many levels of emotional processing, but the next section briefly considers the distinction between empathy and sympathy.

Sympathy or Empathy

In the literature, sympathy has been used interchangeably with empathy and has been described as a subcomponent of empathy, but it has also been distinguished from empathy (Decety & Chaminade, 2003; Decety & Michalska, 2010; Wispé, 1986). Sympathy is a feeling of concern for another person associated with a desire to alleviate that person's distress and therefore deviates from empathy as different in quality to the emotion felt by the target and as being a more other-oriented response to a person's distress (Eisenberg, 2000; Eisenberg & Eggum, 2009). Sympathy also appears to be closely related to, if not to map on to, the construct empathic concern (Eisenberg & Eggum, 2009). It has been suggested that it is unclear to what extent emotional resonance with other people's emotions represents personal distress at being exposed to aversive stimuli or 'true empathy' (Lieberman, 2007; Rameson & Lieberman, 2009). Likewise, there is still progress to be made in detangling whether responses to other people's emotional states reflect sympathy or empathy. Sympathy is thought to require additional cognitive processing and an explicit representation of the other person's state (Decety & Michalska, 2010). Compatible with this, activity has been observed in regions involved in the cognitive understanding of others (e.g. the medial prefrontal cortex, the temporal pole and the superior temporal sulcus) and in the experience of emotions (e.g. the insula) when individuals are asked to adopt a compassion attitude when viewing sad faces (Kim et al., 2009). It has been suggested that sympathy can arise out of empathy, but that empathy may not be necessary and may occur instead through cognitive perspective-taking (Eisenberg, 2000; Eisenberg & Eggum, 2009). Sympathy is thought to require greater executive resources and regulation than empathy and has been more strongly associated with prosocial and moral behaviours (Decety & Michalska, 2010; Eisenberg, 2000; Eisenberg & Eggum, 2009). Following these descriptions of sympathy, and given the associations found between the degree of empathy expressed for a target's bad fortunes and individual differences in empathic concern and moral attitudes in the studies reported here, sympathy (with or without empathy) may be a more appropriate description of the observed emotional modulation in response to another person's bad fortune. It has also been argued that prosocial behaviour, which might include expressions of sympathy, may be motivated by internalised moral standards, rather than by true empathic responses (Eisenberg & Miller, 1987; Hodges & Wegner, 1997). Neural or physiological measures might therefore be valuable to determine to what extent responses reflected sympathy in the sense of emotional experience or mere expressions of sympathy (Ortony et al., 1988).

Limitations

There are limitations associated with the use of hypothetical scenarios and self-report measures to investigate social and emotional experiences, such as empathy (Parkinson & Manstead, 1993). The quantity and quality of information available in real life situations may be different (Parkinson & Manstead, 1993). In particular, in the context of the noise and distractions present in everyday life (and compared to the explicit descriptions of another person's fortunes in the current studies), the concurrent fortunes of others may vary greatly in their salience to individuals and therefore in their likelihood of eliciting empathy or sympathy. When reading hypothetical scenarios individuals may go beyond the information in the text to make unintended inferences about the situation or the protagonists (Brandstätter, 2000). In the current studies, the impact of this was reduced by not relying on a single situation, and by using a large number of scenarios closely matched across the different conditions.

The use of scenarios is also reliant on the ability of individuals to imagine the situations, which may depend on their ability to relate to the situations and on dispositional differences in imagination. By using a large sample of scenarios, typical everyday events and events that were written with the sampled population in mind, centred around University life and starting working life, it was assumed that participants would be able to relate to at least most of the situations; this was supported by participants' reported ability to imagine the situations at the end of each study. Moreover, although there is known to be dispositional differences in the tendency of individuals to form visual images from verbal information, these differences have been found to be reduced by explicit instructions to imagine events (Jiang & Wyer, 2009); instructions given in these studies.

Experimenter demand and social presentation concerns always need to be considered when using self-report measures. However, in Chapter 6, it was argued that these factors cannot account for all of the data. For instance, the symbolization subscale of the moral identity measure, which relates to the need to demonstrate one's goodness to others (Aquino & Reed, 2002), was not related to the degree to which participants expressed empathy. Further, experimenter demand might predict that if individuals high in trait empathy are more influenced by experimenter demand (Archer et al., 1981) than they should be (a) more likely to express empathy and (b) more susceptible to the effects of the person appraisal manipulation; when in fact it was individuals low in trait empathy who showed greater modulation of empathy (see Chapter 6).

It has also been questioned to what extent scenarios elicit the autonomic and somatic responses that might be associated with the online experience (Parkinson & Manstead, 1993). Further, this has led some to question whether such self-reports reflect beliefs about emotions rather than emotions themselves (Dunn & Ashton-James, 2008; Feather, 2008; Robinson & Clore, 2001, 2002ab). Despite this, there is evidence that imagery of emotional situations can induce physiological and neural responses consistent with events in the scenario (Jabbi et al., 2008; Lang, Levin, Miller, & Kozak, 1983; Smith, 1989). It has also been suggested that readers may understand a story by simulating the events (Speer, Reynolds, Swallow, & Zacks, 2009), with some recent studies suggesting that emotional language may elicit somatic responses consistent with the emotional content of the words (as indexed by facial electromyography (EMG); Foroni & Semin, 2009; Niendenthal et al., 2009). For example, Foroni and Semin (2009) found that mere exposure to actions verbs or adjectives associated with facial expressions (smile, funny etc.) resulted in facial muscle patterns consistent with those expressions. Similarly, Niendenthal et al. (2009) showed that even concrete objects, not related to facial expressions, but having emotional associations (e.g. cadaver) can also elicit somatic responses when participants focus on the emotional meaning (e.g. verifying whether the word is associated with emotion or not). However, emotional responses to imagination are likely to be mild and much weaker in intensity than online experience (Siemer & Reisenzein, 2007) and may depend on dispositional differences in the tendency to form visual images (Jiang & Wyer, 2009). Moreover, Niendenthal et al. (2009) have argued that conceptual processing of emotion results in simulation of the emotion, but suggest that this simulation is distinguishable from actual emotional experience, likening it to the fact that observing others in pain recruits overlapping but not identical neural circuits to the first hand experience of pain. Thus, imagining emotional situations cannot be equated with online experience, but may provide a useful model to investigate empathy. In particular, imagination, simulation and the use of beliefs have all been invoked in explaining how we come to share and understand other people's emotions (Batson, 2009; Goldman, 2006; Perner, 1996), and therefore the use of scenarios to investigate empathy may not be too far removed from empathic experience. Still it could be argued that the use of scenarios (compared to online experience) may encourage engagement of a propositional mode of processing over an experiential mode (see above). More generally, although research has indicated that emotional predictions may be biased in their emotional intensity (Dunn & Ashton-James, 2008; Pollman & Finkenauer, 2008; Thomas & Diener, 1990), it has been suggested that that their content and appraisals may be accurate (Robinson & Clore, 2001).

Conclusion

Current ideas of empathy have been largely informed by findings from social neuroscience, which has in the main used visual cues to elicit empathy in observers (e.g. Decety & Jackson, 2004; Preston & de Waal., 2002). This thesis set out to investigate empathy, in the absence of direct cues to other people's emotions, based on situational information, and its modulation. It aimed to look at empathy in a wider range of situations than that previously studied and in particular to examine empathy for the good fortunes of others, as well as the bad fortunes of others, which has been largely neglected in empathy research. This provided direct evidence to support the common assumption that negative empathy is elicited more readily than positive. A more interpersonal approach was taken than in many previous studies of empathy, in which participants simply listened to a person's situation, by asking participants to imagine themselves in the situation with the other and manipulating their own fortune so that they were not always merely an observer to the fortune of the other, but sometimes had contrasting fortune themselves. The results of these studies clearly showed that the empathiser's own fortune may be one factor that limits positive empathy for others, and there was evidence to suggest that social comparisons may (at least in part) mediate this effect. Differences in how we think of emotions in ourselves and others were revealed, showing that individuals anticipate less empathy in others than they do in themselves. Further evidence was found for the effects of person appraisals on empathy, but two experiments suggested for the first time that effects of person appraisals on empathy may be moderated by dispositional empathy. Finally, although the view of empathy as a moral emotion is not a new idea, new evidence was provided for the influence of moral attitudes on empathy, or at least in the expression of empathy. Thus, understanding empathy for the good and bad fortunes of others (in the absence of direct cues) may additionally require an understanding of mentalizing strategies, social comparison and appraisal processes and of the relationship between moral behaviour and empathy, as well as an understanding of how these may be influenced by individual differences.

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APPENDIX

Examples of Scenarios Presented in Experiments 1-9

Experiment 1

Scenarios described one person's perspective (Self or Other; No Conflict) or two people's perspectives (Self and Other; Conflict) and participants were either asked to identify how self or other would feel. Conflicting perspectives were either of the same valence or of different valence.

Scenario Type	Conflict		Response Choice
Same Valence	No Conflict	You have plans to go out for a meal with someone on Friday night. You are looking forward to the meal. You receive an email saying that they can no longer meet you. You spend the night alone in front of the television.	Sad/Guilty
	Conflict	You have lent Kim some money to pay her rent. The same week you and Kim are invited to see your favourite band play. They are only in the country for a limited time. But you don't have enough money left to buy the tickets. Kim hears you tell your friend you can't go because you have no money.	Sad/Guilty
Different Valence	No Conflict	Kim is travelling home on the train for Christmas. She discovers that some of the trains have been affected by strikes. Her train has been cancelled and she doesn't get home for Christmas.	Angry/Happy
	Conflict	Kim and you bake cakes for a charity sale. Kim's cake rises well and looks really tasty and so sells well. You overcook your cakes and no one wants to buy your cakes.	Sad/Happy

Experiment 2

In each scenario self fortune could be bad, neutral or good and another person's fortune could be bad, neutral and good.

Self Fortune	Other Fortune	
Bad	Bad	After the presentation Jane and you go to a coffee shop with a friend. On the menu are yours and Jane's favourite cakes. You order some of your favourite cake but when it arrives it is overcooked and tastes stale. Your friend then reminds Jane that she is on a diet and that she should not have any cake.
Bad	Neutral	On Friday you and Jane go to a Karaoke bar. You get on stage to sing. As you sing the first verse you are mocked and laughed at. Jane watches you and everyone sing from the audience.
Bad	Good	The following evening it is Jane's birthday and Jane goes out with you and friends for a meal. During the meal you eat something that makes you feel really ill and you rush to the bathroom. Throughout the evening Jane receives lots of gifts and her friends buy her drinks.
Neutral	Bad	While in town Jane risked parking illegally for 5 minutes while you and she ran to the shops. When you return Jane's car has been clamped and she has to pay a fine of £150. After Jane pays the fine you get back into the passenger seat and put on your seatbelt.
Neutral	Neutral	A few weeks later you and Jane are away from home on a course. You are together when the phone rings. You turn on your laptop to check your emails while Jane answers the phone. Jane tells you it was the hotel reception asking if either of you needed anything.

Neutral	Good	That evening you and Jane go to the theatre with friends. During the interval Jane tells you she bumped into the famous lead actor on the way to the toilet and had a conversation with him. You tell Jane about the events happening in the theatre in the new season.
Good	Bad	When you meet up next you and Jane talk about your search to find properties to rent. In just one day you found a perfect flat in your budget. Jane tells you she has spent weeks looking and cannot find a suitable flat that she can afford.
Good	Neutral	At the weekend a group of you go ice-skating. A friend demonstrates a trick and you try to copy. Jane skates around the ring holding on to the side while you practice. You then manage to do the trick after trying for ages.
Good	Good	During the Easter holidays you and Jane enter a competition to travel as far as possible without spending money. You stay in contact by text. Jane tells you she is in Paris eating a free croissant outside a café. You manage to get to the south of Spain without spending a penny.

Experiment 3 & 4

In the other's fortune condition participants were presented with scenarios where their own fortune was bad or good and another person in the situation either had neutral fortune or contrasting fortune and scenarios where their fortune was neutral but another person had good or bad fortune. In the emotional face condition, participants were presented with scenarios where their own fortune was good or bad and a neutral or conflicting emotional face (negative or positive) was presented during scenario processing or scenarios where their fortune was neutral and a positive or negative emotional face was presented during scenario processing.

Source of Conflict	Self Fortune	Conflict	
Other's Fortune	Bad	No Conflict	The following morning, you go Christmas shopping. You bump into Charlie doing her Christmas shopping. After a quick chat Charlie says goodbye so she can finish her shopping before the shops shut. You do not know what to get anyone and you have a headache because of all the crowds.
Other's Fortune	Bad	Conflict	After several weeks of not hearing anything back about your job applications you and Charlie both receive letters in the post. You receive a rejection letter from a job that you really wanted. It does not give you any feedback. When you ring to tell Charlie your news, she tells you she has just been offered an interview for a job. The job is in an area that really interests her and offers a respectable salary.
Other's Fortune	Good	No Conflict	After everyone has gone home after the ceremony, Charlie comes around to your house. Charlie cooks you both an omelette and slices some bread to eat with it. Then as you open a bottle of wine, a friend of yours drops by. She asks you to be her baby's godmother.
Other's Fortune	Good	Conflict	A couple of months later, it is graduation day. You see Charlie on campus. You have got your graduation gown on and your friends and family have all come to watch you graduate with honours. Charlie tells you she has to re-sit one exam and will not be able to graduate with the rest of her year.

Other's Fortune	Neutral	Positive	On Friday, you and Charlie get ready to leave work. Charlie tells you she has been invited to the theatre in London. She is going to stay with a close friend. You then make sure all the lights are off and you set the office security alarm.
Other's Fortune	Neutral	Negative	Near the end of your first day, your boss comes into your and Charlie's office to see how you are doing. You see Charlie struggling with a computer programme. She told you she can't tell your boss because she lied on her CV about being able to use the programme. You then ask your boss about the company's annual leave and sickness policies.
Emotional Face	Bad		The following morning, you go to the ski centre to hire ski equipment. You are handed a really unflattering ski suit to wear. Then you are given old and worn ski boots to use for the week.
Emotional Face	Good		You arrive at work for your first day. Your new boss welcomes you. You receive your contract and you discover that you have been started on the higher salary band.
Emotional Face	Neutral		Midmorning, you stop at a cafe for a coffee break. You ordered a coffee. You stir in some sugar and wait for it to cool.

Experiments 5 & 6

Participants were presented with scenarios describing their own fortune and the fortune of another person and were asked to judge how either they or the other person would feel in the scenario. The fortune of the target perspective (self or other) could be good or bad while the second person had neutral or contrasting fortune or neutral while the second person had good or bad fortune. Scenarios were presented as part of a continuous story. Examples of the scenarios are presented with the other as the target, but the target could also be self.

Fortune of Target	Fortune of Second Person	
Bad	Neutral	When you have finished the essay you visit Kate to see if she can proof read it. As she gives your essay back, you and Kate see water dripping through her ceiling from the upstairs flat, destroying the paint work. You help yourself to tea and biscuits while she calls the upstairs flat.
Bad	Good	Towards the end of your holiday you and Kate are both in your hotel room when there is a knock at the door. Kate has sun stroke and has to spend her last day in a dark hotel room. Some friends you made have come to the door. They invite you out on their water jets.
Good	Neutral	The following month you and Kate arrive at work together and see letters in your pigeon holes. Kate receives her performance review. It is a glowing report and she is told that an application has been made for her to receive a pay rise. You find an advert for a course in your pigeon hole.
Good	Bad	In the morning you and Kate are having breakfast when the postman arrives. Kate receives a large tax refund and shows you the cheque. You complain that you have received a larger than expected mobile phone bill.

Neutral	Good	After the performance you and Kate go to a bar. Kate asks someone if she can take a stool from their table to sit on. Then as you are talking to Kate a waitress brings you a cocktail and tells you that someone across the bar has paid for it.
Neutral	Bad	The next day you and Kate arrive at work early and you make tea for you and her. Kate watches as you drop the milk carton spilling milk all over the office floor. You are told to shampoo the carpet. Kate gets ready to attend a meeting with some colleagues.

Experiment 7

Participants were presented with scenarios describing the fortunes of two people and were asked to judge either how Kate or John would feel in the scenario. The fortune of the target perspective could be good or bad while the second person had neutral or contrasting fortune or neutral while the second person had good or bad fortune. Scenarios were presented as part of a continuous story. Examples of the scenarios are presented with the Kate as the target, but the target could also be John.

Fortune of Target	Fortune of Second Person	
Bad	Neutral	The next day John watches Kate play in a hockey game. Kate injures herself at half time and has to sit out for the rest of the game. John drinks a hot drink while watching the game.
Bad	Good	At the end of the week Kate and John go to reception to check-out. John pays and receives a complimentary voucher for a 50% discount at a sister hotel. Kate tells John she was wrongly accused of using some items from the mini-bar and was forced to pay.

Good	Neutral	After a long weekend Kate and John return to work. Kate discovers she has won £100 on the lottery and tells John. John tells Kate about his weekend.
Good	Bad	A couple of weeks later, Kate and John have to do a presentation. Afterwards, they are talking together when they both overhear people talking about the presentations. Kate's presentation goes down well and she receives acclaim for her ideas. John's presentation is highly criticised by several people.
Neutral	Good	At work the next day, Kate and John check their emails. Kate reads and sends replies to several emails. John tells Kate he received an email from a friend he thought he had lost contact with.
Neutral	Bad	Kate and John make it through to their final year at University. John is writing up his thesis. John says his thesis is taking longer than he expected and he will have to cancel a holiday. Kate then tells John about a paper she has read.

Experiment 8

Participants were presented with scenarios in which their own fortune was bad or good while a likeable/dislikeable other had neutral or contrasting fortune or in which their own fortune was neutral while a likeable/dislikeable other had good or bad fortune.

Fortune of Self	Fortune of Other	
Bad	Neutral	A few weeks later, it is Easter and you are due to go on a University organised ski trip in Canada. Charlie also goes. Two days before you are due to leave, Charlie makes a list of everything she needs to buy for the trip. As Charlie talks about the trip, it reminds you to get your passport out. You then realise it has expired and you have just 2 days to get a new passport.
Bad	Good	The next day, you go ice-skating with your flatmates. Charlie also goes. As you stop for a rest, you hear one of your flatmates invite Charlie to go to Paris with her for the weekend. You then suddenly lose your balance. You fall over and twist your ankle. It swells up and goes black and blue.
Good	Neutral	After your long train journey, you all go to the toilet. After using the toilet, Charlie washes her hands with some soap and dries them under the heater. As Charlie washes her hands, you unexpectedly see an old friend in the station toilet. Your friend invites you out for a meal to catch up.
Good	Bad	You all arrive at the conference. You and Charlie both present posters at the conference. You receive many positive comments about your poster. Several people request your email to keep in touch with you. As Charlie puts her poster up, she notices several errors on her poster. You hear Charlie explain the errors to everyone who looks at the poster.
Neutral	Good	Later in the week, your boss invites everyone in the office for a meal out at a restaurant. Your boss is good friends with the

		chef. You ask for a jug of tap water and a basket of bread to eat with the meal. Charlie's food arrives first. The presentation of Charlie's food is spectacular and it smells divine. As you drink some water, Charlie says her food is delicious.
Neutral	Bad	You and Charlie return to your desks and check your emails. Charlie realises she has sent an email that was meant for a close friend to the whole office. It contains details of her personal problems. As Charlie asks you to delete the email, you set up an auto-response on your email to let people know you will be away for a couple of weeks.

Experiment 9

Participants were presented with scenarios describing the fortunes of self and two others (one likeable and one dislikeable). In the scenarios their own fortune could be bad or good while both others had neutral fortune or while either the likeable (examples presented) or dislikeable person had contrasting fortune or their own fortune might be neutral while either the likeable (examples presented) or dislikeable person had good or bad fortune.

Fortune of Self	Fortune of Liked Other	Fortune of Disliked Other	
Bad	Neutral	Neutral	That Friday, you go to a club with friends. Late in the night, you bump into Lucy and Michelle. Michelle then sees some people from her student flat and goes over to dance with them. As you talk to Lucy, you suddenly feel very ill. You are sick on the dance floor.
Bad	Good	Neutral	Michelle and you sleep over at Lucy's flat. In the morning, Lucy receives a letter. She has received a school prize for her A-levels. As Lucy shows Michelle the letter, you realise you have overslept and missed a meeting

			with your tutor and your back is aching from sleeping on the floor.
Good	Neutral	Neutral	A couple of days later, Lucy invites you to the cinema. When you meet her, she tells you Michelle is also coming. Lucy and Michelle eat popcorn while watching the film. The film makes you laugh and you can't wait for the film to come out on DVD so you can see it again.
Good	Bad	Neutral	Everyone is looking for a house to live in next year. You all leave the cafe to go to view some properties. You go to an open house with some friends even though you can't afford it. The house is amazing and they are serving free Champagne and chocolates. One of your friends then gets a call from Lucy. She is standing outside a property. It is raining and the letting agent has not turned up after she travelled 40 minutes to get there.
Neutral	Good	Neutral	A month later, Lucy receives an invitation to a reunion weekend with friends from University. You have also kept in contact with several people from University. Lucy tells you her best friend who has spent the year travelling will be back. She will see her at the reunion for the first time in almost a year.
Neutral	Bad	Neutral	You and Lucy end up getting jobs in the same company. You start on the same day and see Lucy in the car park outside your new office. As you get out of your car, Lucy tells you she had to cancel a holiday because the company wanted her to start a week earlier than planned. She won't get her money back. You then tell Lucy you bought several smart work outfits for starting the job.