Trust me, this is(n't) scary! How trust affects social emotional influence in threatening situations

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

THESIS SUMMARY

The aim of this thesis was to investigate social emotional influence in threatening situations. It examined how trust in a friend's response that varied in level of fear, influenced people's experiences of fear.

Study 1 established the occurrence, outcome and process of social emotional influence in an evaluative threat situation, through an experiment and interviews. Participants were exposed to a real evaluative threat situation, with a confederate who acted anxious or calm. Results showed an emotion contrast effect whereby participant anxiety decreased in the presence of an anxious confederate. This effect was mediated by a change in threat appraisals, providing evidence for a social appraisal explanation. Interview data suggested that wanting to be alone versus wanting to affiliate was determined by factors reflecting interpersonal trust, and level of trust in the response of another person could impact on that other's influence.

On the basis of the qualitative findings from study 1, studies 2a and 2b explored the possible role of trust on social appraisal, this time in relation to a physical threat (an objective threat in study 2a and an ambiguous threat in study 2b), using a scenario methodology. Emotion assimilation, rather than contrast as seen in study 1, was the key outcome in both experiments. The presence of a less fearful friend was associated with a decrease in participant fear, while fear remained high in the presence of a highly fearful friend. The difference in the direction of effects observed in these studies compared with study 1 can be attributed to differences in the identity of the other- a friend rather than a stranger. Importantly, the effects of the friend were moderated by the extent to which their fear response was trusted, such that as trust increased so too did emotion assimilation.

As trust was found to moderate the effects of social appraisal in 2 experiments, this variable was manipulated in studies 3a and 3b. A scenario describing a realistic threat was used, and trust in a friend was manipulated through information about their 'usual' behaviour. Results showed an interaction between the level of fear exhibited by the friend and the extent to which they were trusted. Under conditions of high trust emotion confirmation or assimilation was observed whereas under conditions of low trust emotion contrast or no influence occurred. These findings were replicated in a follow-up study using a think-aloud approach, which also examined the process underlying the effects of trust.

Results suggested that people were motivated to reduce their fear where possible, and social appraisal involved different thought processes dependent on level of trust in the friend. When trust was high, social emotional influence occurred via a process of questioning and acceptance of the friend's response as valid, resulting in emotion assimilation or confirmation. When trust was low, there was an absence of acceptance. The presence of questioning and differentiation led to emotion contrast, and where there was just questioning there was reduced influence. On the basis of these findings a model of social appraisal regarding fear in threatening situations was developed.

DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text

Eleanor Lawrence-Wood, B. BSc. (Hons)

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One engagement, wedding, honeymoon, house demolition, house construction, and a baby later …

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CHAPTER 1. LITERATURE REVIEW

"A shadow passed across the sun. Cool change at last! Glancing up, I saw that instead of clouds, the sun was obscured by a massive column of grey and orange smoke billowing upwards a kilometre or more and cascading down over itself, as it flowed towards the town from the north. The 30 or so bathers relaxing around the pool seemed oblivious to the mountain of down-pouring smoke that filled half the sky. Nobody looked up or commented and so I, too, despite a growing unease, decided that the smoke must be somehow within the realms of normal and nothing to worry too much about."(The Weekend Australian Magazine, 2009, p.18)

Following the Black Saturday bushfires that occurred in Victoria, Australia, in February 2009, there were numerous reports of people underestimating the threat of the fires in the face of undeniable evidence such as thick plumes of black smoke obscuring the sun. The horrifying consequences of this were the deaths of more than 170 people who had failed to 'get out in time'. Anecdotal reports from some survivors, such as the one above, suggest that the responses of others to the situation may have exerted some influence on their own perceptions of the seriousness of what was happening- and indeed, on their interpretation of the ominous warning signs. Thus the central theme of this thesis is the influence of the reactions of others on experiences of fear in threatening situations (though not as imminently dangerous as the illustration above).

1.1 Overview

Anecdotally, at least, it is clear that our social situation has the potential to influence our interpretations of and responses to our environment- in both positive and sadly more catastrophic ways. Importantly, there is ample evidence that we do not experience situations in social isolation, we are aware of the people around us and when we feel threatened we often actively seek out other people (Mawson, 2005), paving the way for social influence to occur. Therefore, the aim of this thesis is two-fold. In relation to various threatening situations, this thesis investigates with whom people wish to affiliate (or not) and why this might be the case. Second, it examines the consequences of the responses of these others on people's experience of fear. This introduction will first discuss the concepts of fear and threat, followed by a brief review of threat-affiliation research. Various explanations of how others, with whom we may wish to affiliate in a threatening situation, could influence our responses to threat will then be discussed. This will be followed by an overview of the potential moderating effects of the identity of the other on this process.

1.2 Fear, threat, and affiliation

While fear is sometimes differentiated from anxiety (e.g., Riezler, 1944) much previous literature and research locates fear and anxiety as similar constructs, and often treats them as interchangeable (e.g., Batty, Cave & Pauli, 2005). Therefore, in this thesis, the terms fear and anxiety will both be used. Fear is an emotion that occurs in response to the anticipation of, or in the presence of something that is threatening or dangerous, and is characterised by a desire to flee (Kreibig, Wilhelm, Roth & Gross, 2007; Reber & Reber, 2001). Riezler (1944) argued that people experience fear in various ways, and they generally have a fear *for* or a fear *of* something. The first is anticipatory fear, and refers to feeling scared out

of concern for something that *could* or *will* happen. The second is reactive fear, and refers to feeling scared in response to something that *has* happened or *is* happening. Roseman, Antoniou and Jose (1996) described fear as a 'preparatory' emotion, consistent with Riezler's anticipatory fear. They proposed that in addition to the flight response, which is reactive, fear can also lead to vigilance and anticipation, which are both preparatory states (Roseman et al.). Both reactive and anticipatory fear are examined in this thesis.

The experience of fear involves subjective internal feeling states as well as more objective physiological responses such as increased heart rate (Kreibig et al., 2007; Reber & Reber, 2001). The subjective experience of emotion is by necessity measured using self-report tools. The use of self-report in emotion research is particularly important, because it is the individual's personal experience that leads to their understanding and labelling of an emotion as such (Wallbott & Scherer, 1989). "Emotional experience…can only be studied via the introspective report of an experiencing subject." (Wallbott & Scherer, p.56). The focus of this thesis is on the subjective experience of emotion.

According to cognitive appraisal theory (Arnold, 1968), fear and anxiety are the product of appraisals of threat. To understand fear, it is necessary to understand the nature of threat and how it is perceived (Roseman, 2004). Stephan and Renfro (2003) proposed that there were two types of threat: symbolic and realistic. Symbolic threat refers to the perception that one's values and 'worldview' are actually or could be, undermined. Realistic threat refers to the subjective belief that one's welfare and existence are under threat. The experience of these different types of threat can also influence the subsequent emotional response to the threat. Realistic threat directly leads to fear responses (Cottrell & Neuberg, 2005) whereas

symbolic threat does not (Mackie & Smith, 2003). Thus the focus of this thesis is on realistic threat.

The perception of a realistic threat reflects the belief that something is dangerous and has the potential to actually harm the self (Rapee, 1997). As well as perception of danger, two key components of threat appraisals are uncertainty and low control over what is happening (Frijda, Kuipers & ter Schure, 1989; Roseman et al., 1996; Tomaka, Blaskovich, Kibler, & Ernst, 1997). Furthermore, appraisals of the severity, imminence and probability of occurrence of a situation that is harmful to the self combine to influence perceived threat (Paterson & Neufeld, 1987). In line with this, Rapee (1997) distinguished between two qualitatively different types of threat that could both be considered realistic: evaluative and physical. Evaluative threats involve actual or possible evaluation by an 'audience', of one (as on a blind date), or many (as giving a presentation in front of a class). Evaluative threats are generally perceived as less severe than physical threats, and the threat stems from the potential consequences of being evaluated. For example, public speaking would constitute an evaluative threat. The 'danger' in this situation reflects the possible outcome of the act – such as negative evaluation. It is this that leads to the fear response. In contrast, physical threats are those where physical welfare is threatened, and stems from the likelihood of an event's occurrence rather than its possible consequences. Encountering a hostile person in a dark alley or being exposed to a serious illness would both constitute physical threats. The danger and potential for harm inherent in both of these means that it is the likelihood of occurrence rather than possible outcomes that determines perceived threat, and subsequent fear (Rapee, 1997). Both evaluative and physical threat situations can elicit fear (Kreibig et al., 2007), and both types of threat are used in this thesis.

People often desire to be with others (affiliate) when facing threatening situations (e.g., Mawson, 2005). Interestingly, despite this desire, research has shown that compared to other emotions, situations that elicit fear are more often experienced alone (Fischer, Manstead & Zaalberg, 2003). Research regarding the occurrence of affiliation, and reasons why people wish to affiliate when facing threat is discussed below.

Schachter (1959), who famously stated that misery loves miserable company, proposed the 'emotional similarity hypothesis' to explain the tendency for people to affiliate with others in stressful situations. He argued that in a threatening situation, the presence of a similarly threatened other would allow a person to evaluate the appropriateness of their own response to what was happening through a process of emotional comparison. This was argued to reduce uncertainty about the situation. The process of emotional comparison extends from social comparison theory (Festinger, 1954), which will be discussed later in this chapter. The emotional similarity hypothesis focussed on affiliation as an outcome that was associated with uncertainty reduction. However, except for assuming positive emotional consequences of uncertainty reduction, this hypothesis neglected the other possible emotional outcomes of affiliation; a problem addressed to some extent by Rofé (1984). He proposed his Utility Theory in order to address what he perceived were the over-generalisations of Schachter's stress-affiliation work and to incorporate various outcomes of affiliation under threat.

Rofé (1984) argued that rather than a general tendency to want to be with others when facing threat, the decision to affiliate was based on a cost-benefit analysis regarding the possible outcomes of affiliation. Affiliation under threat should only occur if associated emotional costs were low and anxiety reduction the outcome. According to this model, affiliation with others facing a similar threat also

has the possibility of high emotional costs: actually *increasing* anxiety through emotional contagion, or through embarrassment at exposure of one's vulnerability. Thus, in some cases, people may actively avoid affiliation. In a further critique of Schachter's conclusions, Kulik and Mahler (2000) proposed that rather than the purpose of affiliation being simply for emotional comparison, people may desire the presence of others for more overt communicative reasons. They argued that a desire for cognitive clarity, through being able to talk to someone experiencing the same situation, was a more primary goal of affiliation. However, there *is* evidence that even if communicating with an affiliate is not possible, people do still wish to share the experience of a threatening situation with another person (Kulik & Mahler). In line with this wish to be with others in the absence of informational value, Mawson (2005) and Ryan, Guardia, Solky-Butzel, Chrikov and Kim (2005) have argued that people often seek others out in emotionally laden situations for comfort and support- both goals that would presumably reduce negative emotions (see also, Christenfeld & Gerin, 2000; Cohen & Wills, 1981).

Taken together, it can be concluded that in threatening situations people (1) usually desire the presence of another person, (2) reduce uncertainty through emotional comparison with the other regarding the appropriateness of their own reaction to what is happening, (3) attempt to increase cognitive clarity regarding the situation through communicating with the other, and (4) may derive comfort and support from the other person's presence (for reviews see Kulik & Mahler, 2000; Buunk, 1994). Furthermore, while one goal of affiliation may be to reduce anxiety, it also carries the possibility of negative emotional consequences such as an *increase* in anxiety and/or feelings of embarrassment and vulnerability. A key criticism of extant research examining stress and affiliation is the lack of studies looking at the differential impacts of the emotional expressions of affiliates. While Rofé

acknowledged the possibility of emotion contagion and raised the issue of emotional outcomes being a possible determinant of desire to be with others (see also Darley & Aronson, 1966), the consequences of the emotional expressions of these others on preference to affiliate and people's actual emotional outcomes have less often been systematically tested (for examples of exceptions see Gump & Kulik, 1997; Kulik, Mahler, & Earnest, 1994).

1.3 Social emotional influence

Given the importance for the individual of the presence of others in threatening situations, the second aim of this thesis is to examine the emotional consequences of the response of others with whom people experience a situation- what I will term 'social emotional influence'. Where influence occurs, the term emotion assimilation refers to those instances where the emotions of the participant move in the same direction or towards those of the 'other'. The term emotion contrast refers to the emotions of the participant moving away from those of the 'other'. There are various theoretical explanations for the occurrence and possible outcomes of social emotional influence, which are reviewed below.

1.3.1 *Emotion contagion*

Much early (and continuing) research in the area of social emotional influence explained its occurrence in terms of emotion contagion. Emotion contagion occurs when the overt emotional experience of another person influences one's own emotions to move in the same direction through facial, vocal and/or postural mimicry (Hatfield, Cacioppo & Rapson, 1994; Hatfield, Rapson & Le, 2008; Neumann & Strack, 2000). The emotion contagion hypothesis predicts that positive or negative emotions will increase in the presence of another person responding in a

corresponding way. There are various explanations for the phenomenon whereby a person's emotions come to resemble those of the people around them. One argument, of primitive emotion contagion, is that this 'catching' of the emotions of others occurs largely pre-consciously through a process of facial feedback (Hatfield et al., 1994, 2008). In social interactions, people have a tendency to mimic the behaviours, voices, and expressions of those they are interacting with. The emotion-specific activation of muscles in the face precipitates the activation of neural pathways in the brain and activity in the autonomic nervous system, which in turn triggers the subjective experience of the associated emotion (Hatfield et al., 1994, 2008).

There is a reasonable body of evidence for the occurrence of 'primitive emotion contagion', with facial mimicry between strangers found to be associated with changes in subjective emotional experience (e.g., Cote & Hideg, 2010; Dimberg, Thumberg, & Elmehed, 2000; Lishner, Cooter, & Zald, 2008; Sonnby-Borgström, Jönsson, & Svensson, 2008; Wild, Erb & Bartels, 2001). For example, Wild et al. (2001) demonstrated that contagion of facial expressions was matched by changes in the subjective experience of happiness and sadness. Participants displayed more happiness or sadness expressions when exposed subliminally to images of happy or sad faces, and this was associated with changes in subjective emotions. However, it is not clear whether this actually occurs via a process of facial feedback as described above. Providing evidence that facial feedback may not be the mechanism underlying emotion contagion, Mauss, Levenson, McCarter, Wilhelm and Gross (2005) found that while emotional behaviours were related to the subjective experience of emotion, neither were necessarily related to physiological changes.

A general criticism of the examination of mimicry in relation to static images of emotional faces (e.g., Wild et al., 2001) is that it does not adequately explore the social functions of emotion expressions (e.g., Bavelas, Black, Lemery, & Mullet, 1986; Bourgeois & Hess, 2008; Chovil, 1991; Lakin, Jefferis, Cheng, & Chartrand, 2003; Marsh, Adams, & Kleck, 2005; Marsh & Ambady, 2007). For example, Bourgeois and Hess (2008) have argued that rather than simply being a step in the automatic transfer of emotions, mimicry occurs primarily to serve the social function of affiliation. That is, people mimic the emotional expressions of others in order to be 'more like' them thus fostering communication and coordinated social activity. They proposed that mimicry should vary as a function of *who* the other person is, in that it is only desirable (and necessary) to coordinate oneself with in-group members. Interestingly, Bourgeois and Hess found that this effect of in-group membership only occurred for negative emotion expressions (sadness) with the mimicry of happiness not confined to in-groups. The explanation for this difference was that expressing sadness conveys vulnerability. The expression of vulnerability signals the need for comfort and support. While this would be adaptive in the context of one's in-group, it would not be desirable to convey 'weakness' to an out-group. The expression of a positive emotion such as happiness does not carry the same associated costs therefore may be mimicked regardless of group membership. Thus, while there is evidence for the occurrence of emotion contagion via mimicry, this can be limited by the group membership of the person expressing the emotion.

1.3.2 *Social referencing*

Klinnert, Campos, Sorce, Emde and Svejda (1983) have argued that what looks like emotion contagion is likely to occur for emotions such as fear. However, rather than contagion reflecting an automatic transfer of emotion, the process

involves one's own emotions being influenced in the direction of another person's by the *perception* of the other's emotional response. It is proposed that the emotional reactions of others can be used as a guide for how to respond appropriately to an ambiguous or uncertain situation (Nishida & Lillard, 2007). As a consequence, the individual's responses to the situation change as a function of the reactions of these others. This process is termed 'social referencing' (Klinnert et al., 1983). It is argued that social referencing is particularly important for children (including infants), because they have less experience to draw on when evaluating a novel or ambiguous situation. Similar to Bourgeois and Hess' (2008) proposition that emotional mimicry may only be adaptive in the context of an in-group, the occurrence of social referencing assumes that the referent is someone 'significant' (e.g., a parent) to the referencing individual.

In a series of experiments, Klinnert et al. (1983) examined social referencing between mothers and infants. They found that infant behaviour towards 'threatening' toys varied as a function of the emotions expressed by their mother. A joy expression from the mother was associated with approach, a fear expression with avoidance and neutral expressions had no effect. Similarly, when faced with an uncertain situation the emotional expression of the mother again predicted infant behaviour in corresponding ways.

De Rosnay, Cooper, Tsigaras and Murray (2006) also utilised the social referencing paradigm to examine the transmission of fear from caregivers to infants. Rather than investigating the direct influence of another person within a situation, De Rosnay et al. examined the effects of 'indirect referencing'. That is, infants observed their mother interacting with a stranger, then the infants interacted with this stranger by themselves. It was hypothesised that the infant would modify their response to the stranger in line with the way they observed their mother responding. Thus, when

the mother expressed higher fear the infant would experience more fear and vice versa. The central hypothesis was partly supported, with the response of the mother predicting how the infant responded to the stranger. Infant fear increased when the mother displayed a fearful interaction, however infants did *not* respond with *no fear* when the mother's interaction with the stranger was relaxed and happy, which would at least be expected if emotion *contagion* was occurring. The absence of contagion effects for positive emotions is inconsistent with Bourgeois and Hess' (2008) research showing a contagion effect for happiness regardless of the relevance of the other. However, DeRosnay et al.'s finding may reflect that positive responses could be adaptively problematic in a threatening situation (i.e., infants interacting with a stranger)- an issue irrelevant to the findings from Bourgeois and Hess.

In summary, social referencing research provides evidence that emotions of infants (and subsequent behavioural actions) can be influenced by the emotional expressions of their caregivers in particular situations, but this does not always follow a 'contagion' pattern. The findings, in contrast to emotion contagion arguments, suggest that characteristics of the situation itself may also inform (and maybe even override) the potential effects of the responses of others.

1.3.3 *Conformity influence*

A conformity model of social influence (Turner, Hogg, Oakes, Reicher & Wetherell, 1987) can provide an alternative explanation for the occurrence of what looks like emotion contagion. According to self-categorisation theory (Turner et al., 1987), people define themselves according to their membership to specific social groups. They learn ways of 'being' associated with these, and take on group norms, such that their behaviour reflects these norms, and in a circular way, their membership of the group becomes ever more salient. 'Referent informational

influence' involves the process whereby the responses of a member (or members) of one's in-group serve to confirm one's own response *or* create uncertainty in that response. How members of one's in-group respond to a particular situation provides information about the validity of one's own response to that situation. If I am with an in-group member (someone who is like me), I expect to agree with them on issues relevant to that group membership, and also expect to respond to those issues in a way similar to them. If their response is consistent with my own, it will serve to confirm and strengthen it. If, however, it is different, this can create uncertainty in my own response- leading me to question it, and possibly conform in order to reduce this uncertainty. In this way, the responses of in-group members can also *lead to* uncertainty where it did not previously exist.

Turner et al. (1987) have also proposed that, consistent with social referencing, under situations that are high in ambiguity, difficulty, complexity, and uncertainty, people will exhibit increased conformity. In uncertain or ambiguous situations we look to others for information, and evaluations of the source determine how that information is perceived. Our responses will be influenced in the direction of the people we refer to, as long as their responses are perceived to provide valid information about what is happening (e.g., those provided by in-group members). Therefore, the conformity influence model integrates situational uncertainty as discussed under social referencing, also accounting for the development of uncertainty in presumably 'certain' situations, and the issue of group membership (see also Bourgeois & Hess, 2008).

1.3.4 *Social appraisal*

A general criticism of the explanations for social emotional influence discussed so far is that they do not explicitly acknowledge that the evaluation of the

situation itself can interact with the emotional expression of other people within that situation to influence appraisals of what is happening- an issue that is addressed by the social appraisal perspective. Furthermore, in contrast to the emotion contagion, social referencing and conformity influence explanations, social appraisal does not specify conditions for influence, such as uncertainty or ambiguity, or absolute outcomes of social emotional influence. Rather it locates social emotional influence as an additional aspect of situation appraisal. Social appraisal is defined as "the appraisal of the behaviours, thoughts, or feelings of one or more other persons in the emotional situation, in addition to [the appraisal of] the emotional event…" or situation itself (Manstead & Fischer, 2001, p.222). Evers, Fischer, Rodriguez Mosquera, and Manstead (2005) discussed two distinct outcomes of social appraisal: 1) social appraisals can influence people's experienced emotional responses, and 2) they can influence the expression of emotions. The paths underlying these two outcomes are qualitatively different, in that the first involves the appraisal of another person's response to an event, which then informs one's own response, whereas the second involves the appraisal of the potential social consequences of one's own overt emotional response to an event. It is the former of these that this thesis is concerned with.

Two studies, by Jakobs, Fischer and Manstead (1997) and Jakobs, Manstead and Fischer (2001), provided evidence for (1) a reduction in negative emotional responses to negative situations, when in the company of others compared with when alone and (2) differential affiliation tendencies on the basis of the situational similarity and identity of the other. Jakobs et al. (1997) found that in anxiety provoking situations, the presence of a friend (co-experiencing or observing) was associated with less self-reported anxiety, insecurity and concern, and with less withdrawal and frustration action tendencies, compared with being alone. However,

the emotions expressed by the friend had no effect, suggesting that the mere presence of a friend may be sufficient to exert influence. In this case, it is not through the informational value of the other, as argued by the social referencing (e.g., Klinnert et al., 1983) and conformity perspectives (Turner et al., 1987). Further, whether the friend was co-experiencing or simply observing the situation did not impact on emotions or action tendencies but it did affect desire to affiliate with the friend. Wanting to communicate with the friend was highest when that friend was co-experiencing the event and expressing emotions consistent with the situation. This latter finding is in line with Kulik and Mahler's (2000) proposal that affiliation serves a primarily communicative function, thus people would desire to be with someone in a similar situation for the purposes of communicating about the situation. Presumably the expression of emotion signals that the other has interpreted the situation in a way similar to the self, thus is a suitable information source (emotional similarity hypothesis, Schachter, 1959).

Jakobs, Manstead and Fischer (2001) expanded on their 1997 study and examined social context effects on the negative emotion of sadness using a film manipulation rather than scenarios. In this study, rather than co-experience being manipulated, the identity of the other was either a friend or a stranger. This is somewhat analogous to the co-experience/observer distinction in that friends are presumed to 'share' the experience (even if only symbolically) whereas strangers may not necessarily. Anxiety was not examined in this study given the lack of context effects (co-experience and expression) found in the previous study. While the focus was on sadness, the general reasoning was that social motives (akin to affiliation tendencies) would be particularly relevant in a situation where another person could potentially provide help or comfort- applicable also to a threatening situation (Marsh, Adams, & Kleck, 2005). Jakobs et al. (2001) found that

participants expressed more smiles, were more aware of and had more desire to communicate with friends compared with strangers. Interestingly, they expressed more sadness when alone, probably reflecting implicit display rules associated with the expression of emotion (Jakobs et al., 2001). Jakobs et al. suggest that watching a sad film probably does not constitute a situation where the public display of sadness would be considered necessary or appropriate.

In contrast with the above findings, Fischer, Rotteveel, Evers and Manstead (2004) found evidence that sadness or anger about a situation, expressed by another person in that situation, was associated with an *increase* in participant's subjective sadness or anger responses (emotion assimilation). The situation described participants receiving a low grade for an assignment, and the emotional responses of their fellow classmates (anger or sadness). The focus on experiences of emotions rather than facial expressions in this study may explain the difference in findings. If the reduced sadness expressions in social versus alone conditions observed by Jakobs et al. (2001) reflected a 'display rule', then the use of subjective experiences, as was done here, may counteract this. Furthermore, the situation in the study by Fischer et al. (2004) was more personally relevant than the passive situation of watching a sad film.

Taken together, in the case of situations eliciting negative emotions such as anxiety and sadness, people wish to communicate more with people experiencing the same situation, and friends, compared with observers and strangers. Jakobs et al. (1997, 2001) found the presence of friends was associated with less subjective negative emotions and action tendencies as well as fewer negative emotion expressions and more positive ones. However there was mixed evidence regarding *social* effects for sadness, with the relevance of the situation informing whether the presence of others reduced or enhanced the experience and expression of this

emotion. When the situation was not personally relevant (watching a sad film) the presence of another person was associated with reduced expression of sadness, while in a more personally relevant situation (Fischer et al., 2004) the presence of others enhanced the experience of this emotion. Overall, it appears that the presence of an affiliate can reduce or enhance the experience and expression of negative affect, depending on the situation and how they themselves respond to it, however, the mechanisms underlying this are not clear. The social appraisal perspective goes some way to explaining these effects, by proposing that the response of the other person is appraised *in addition to* the situation. Social comparison theory provides a complementary explanatory framework, which more specifically addresses the mechanisms underlying social emotional influence.

1.3.5 *Social comparison*

As touched upon in the stress-affiliation research discussed earlier in this chapter, the process of social comparison can be applied to emotional responses and may explain affiliation tendencies under conditions of threat (Sullins, 1991). Social comparison theory proposes that people are naturally inclined to compare themselves with others when they are in social situations, as a means of obtaining information about their relative performance or experience (for a review see Buunk & Gibbons, 2007). Stress-affiliation research (Kulik & Mahler, 2000) suggests that people will compare their emotions with others in threatening situations as a means of uncertainty reduction. Rofé (1984) in his Utility Theory argued that the outcome of this comparison, in relation to negative emotions, could be an increase, decrease or no effect at all (see Gump & Kulik, 1997 for an example; and Kulik & Mahler, 2000 for a review of findings in this area).

In line with Schachter's (1959) argument that situational similarity is important in determining affiliation preferences, Broemer and Diehl (2004) have proposed that people also prefer to compare themselves to an other who they perceive as *personally* or *socially* similar to them. When the self and other are perceived to be highly different, comparison with this other is unlikely to provide meaningful information, thus exerts little effect on the self. In other words, perceived 'similarity' not only reflects the situation itself, but also the shared characteristics between the self and other (e.g., we are both female students). Importantly, Broemer and Diehl (2004) have argued that even though people prefer to compare themselves with similar others, the aspect of identity that is salient, personal or social, can determine the outcome of comparison via triggering a similarity or dissimilarity focus. When the *social identity* is salient, a focus on similarities between the self and similar other, on the basis of social membership, leads to assimilation to the comparison other. When personal identity is made salient, a focus on dissimilarities between the self and similar other leads to contrast, due to a motivation to maintain positive distinctiveness. While Broemer and Diehl (2004) propose that comparison with 'different' others has no effect on the self, their findings show that *within* the category of 'similar' others, a dissimilarity focus leads to contrast effects.

Epstude and Mussweiler (2009) argued that rather than comparison with 'different' others having less information value, it could result in a contrast effect. Specifically, Epstude and Mussweiler found that when participants were primed to focus on similarities, they exhibited a tendency to match their mood to affectively laden images (a contagion or assimilation effect). When a focus on dissimilarities was primed there was a tendency for mood to move in the opposite direction from that depicted in the images (a counter-contagion or contrast effect). They also found

a consistent pattern of results when an in-group versus out-group focus was primed. Epstude and Mussweiler have argued that this effect of similarity/dissimilarity focus could explain previously observed differences between in-groups versus out-groups, liking versus disliking, and cooperation versus competition, on social and emotional comparisons.

Suls, Martin and Wheeler (2002) have proposed that the preferred characteristics of the comparison other depend on the focus of comparison. Similarity is important in determining the occurrence and outcome of social comparison regarding preferences (e.g., the preference for reading crime fiction over romance). Social comparison information should only be informative regarding one's own preferences insofar as the comparison other shares certain similar attributes to the self. This is because, if there are basic differences in the attributes, the differences in preferences could simply be a reflection of this rather than any *actual* difference. However comparison with an expert (who is by definition different to the self in terms of knowledge) may be preferred when the comparison involves beliefs (e.g., what is happening in a situation), due to their difference to the self in terms of superior knowledge.

In summary, social comparisons, like social referencing, conformity influence, and social appraisals, provide information to the self about how another person perceives and responds to a situation. The outcome of social comparisons can be a change in one's emotional response to a situation, and the occurrence and direction of this effect is constrained by characteristics of the other. Finally, the informational context (e.g., preferences vs beliefs) can determine who is the preferred target for comparison.

1.4 Identity as a possible moderator of social emotional influence

In the discussion above, of different explanations for social emotional influence, a common theme to emerge was the importance of who the other is in determining the occurrence and outcome of this process. This encompasses the expertise of the other person, one's relationship to them as well as the social identity of the other.

1.4.1 *Expertise*

Taylor, Buunk and Aspinwall (1990) in a review of social comparison in stressful situations, argued that people have a preference to be with 'experts' in stressful and ambiguous situations due to their superior informational value. As discussed previously regarding affiliation preferences under threat, people prefer to be with others experiencing a similar situation to the self as they are likely to provide more relevant information about what is happening. Taken further, Kulik and Mahler (2000) have proposed that people may prefer to affiliate with others who have already gone through a similar situation as they then have expertise regarding that experience. Evidence that situational similarity is important was demonstrated in the research of Gump and Kulik (1997). They investigated social emotional influence in an anxiety-provoking (threatening) situation, examining the impact of the situational similarity and response of a stranger. Similar to Jakobs et al. (1997), the importance of co-experience was also tested by Gump and Kulik, who proposed that in stressful situations, people desire to affilliate more with others experiencing the same situation as the self, as they provide more relevant social comparison information. They found that while having a stranger present influenced anxiety, this was *not* dependent on whether they were in the same threatening situation as the self (co-experience) or not. However, the emotional response of the stranger to the threat

did have a differential effect on participant emotions. When they were calm this was associated with lower levels of anxiety for participants and when the stranger was anxious, higher levels of anxiety emerged. Under conditions of low threat, participants were calm regardless of the response of the stranger- thus emotion contagion does not provide an adequate explanation for the assimilation effects that were observed.

The situational similarity of the stranger did not predict effects on emotions, however Gump and Kulik (1997) found that it *did* predict affiliation. When the other person was experiencing the same situation, participants looked to them more than when they were experiencing a different situation. This latter finding, taken together with Jakobs et al.'s (1997) finding that desire to communicate with others was higher when the other was co-experiencing versus observing the situation, suggests that people are aware of characteristics of the other. Someone co-experiencing the same situation as the self represents a useful (and possibly expert) information source regarding what is happening. While situational expertise may not directly determine social emotional influence, it may have an indirect effect via influencing the wish to communicate.

Regarding expertise more specifically, Randall Crosby, Monin and Richardson (2008), demonstrated that people looked to a referent differentially according to that person's perceived expertise in relation to a source of uncertainty. When presented with footage of prejudicial behaviour towards a member of a minority group, participants preferentially looked to a referent who was representative of that minority group, compared with others who were not. It was argued that this preference was due to the minority referent having more informational value regarding what would be an 'appropriate' response to what was happening. Put simply, the minority referent was perceived as more 'expert'

regarding prejudicial behaviour. While this study did not look at the effects of the referent on participant emotions, it does provide evidence that perceived expertise can influence referencing behaviour- a process underlying social emotional influence.

1.4.2 *Relationship with the other*

While perceived expertise may be important, the relationship between the self and other is also relevant. Jakobs et al. (2001) found a preference to communicate with friends compared to strangers in a negative emotional setting, and Ryan et al. (2005) provided evidence that the identity of others (someone one is close to as opposed to someone less so) determines preferences for obtaining emotional support from them. Evidence that the identity of the other (friend or stranger) impacts on facial displays of positive emotion was found by Hess, Banse and Kappas (1995), who showed that people expressed more positive emotion in the presence of a friend than when with a stranger, and by Wagner and Smith (1991). Masanori, Ikuo, and Masao (2008) investigated the effects of different types of relationships on emotion contagion. They found that more contagion occurred between friends than mere acquaintances. Providing more indirect support for the differential effects of friends and strangers, Weyers, Mühlberger, Kund, Hess and Paul (2009) found that the intensity of facial mimicry for happy and sad expressions was reduced with competition priming. The theoretical explanation for this is that mimicry has communicative functions of fostering empathy and liking. Therefore, it should occur more when interaction partners have a positive and cooperative (as opposed to competitive) relationship, such as that between friends. When the relationship is perceived as competitive, mimicry then becomes less adaptive. This is consistent with the explanation Bourgeois and Hess (2008) proposed for their finding of decreased expressions of sadness to out-group members. Interestingly, unlike

Bourgeois and Hess (2008) who found that the mimicry of happiness was uninfluenced by the identity of the other, Weyers et al. (2009) found reduced happiness mimicry under competitive conditions. Weyers et al. proposed that in a competitive situation, a happy expression could signal malicious pleasure rather than happiness, reducing the likelihood of mimicry, providing an explanation for this inconsistency.

1.4.3 *Social Identity*

Research examining self-categorisation and the role of perceived group membership provides further evidence that the identity of the other is important in the process of social emotional influence (Bourgeois & Hess, 2008; Platow, Mills, & Morrison, 2000; Platow et al., 2005). As discussed previously, Bourgeois and Hess (2008) examined the effects of group membership on the occurrence of positive and negative emotion mimicry. They found that positive emotions tended to be mimicked regardless of the group status of the source of the emotion, however negative emotions were mimicked more when exhibited by an in-group compared to out-group member. Somewhat in contrast to the findings regarding positive emotion mimicry, Platow et al. (2005) found that a marker of positive emotion (laughter), exhibited by an in-group, exerted more effect on participant's positive emotions, than did the same laughter exhibited by an out-group.

Platow et al. (2005) investigated whether group membership (in-group versus out-group) would moderate the effects of social transmission of laughter in response to humorous material. Consistent with self-categorisation theory (as explained previously), it was proposed that the responses to a situation exhibited by members of one's in-group could provide valuable information about an 'appropriate' response to what was happening. In contrast, out-group members are perceived to be different

to the self, thus their responses would not be (as) informative. In support of this reasoning, Platow et al. (2005) found that the laughter of in-group members exerted more influence on participants' humour responses than that of out-group members. The difference in findings between Platow et al. (2005) and Bourgeois and Hess (2008) may reflect differences in the 'function' of emotional outcomes. Platow et al. used a design where communication with the other was not possible or even implied, thus their findings probably reflect the informational influence of the other's response rather than affiliation and communication functions.

Of more central relevance for this thesis, Haslam, Jetten, O'Brien and Jacobs (2004) examined social influence on perceptions of stress, also using a manipulation of the group status of the other. They were interested in whether the social identity (in-group versus out-group) of a stranger would impact on the influence of information provided by this person on participant perceptions of stress. Haslam et al. (2004) hypothesised that participants' appraisals of an experimental task would vary according to the information provided by another person, and the group membership of that other. When the other person described the task as stressful, participants reported more stress regardless of the other person's group membership. However, participants only reported *less* stress when the task was described as less stressful by an in-group member. Therefore, the outcome of social emotional influence in this case depended on the type of information provided as well as characteristics of the information source.

Taken together, the findings from the above studies suggest that the information provided by others is used in light of the identity of those others, and that this occurs for both positive and negative emotions (and behaviours). Overall, the research findings show that people do indeed look to the emotions of others for information in situations, including those that convey threat, and that they can be

influenced by the emotions of others in various ways. Characteristics of these others, such as their identity serve to determine the extent to which their responses are useful and informative. People with expertise about the situation, friends compared to strangers and in-group members compared to out-group members, appear to have a stronger influence on emotions. Further, it seems that rather than there being a single path by which social emotional influence can occur, there may be numerous, with evidence for effects of affiliation, and facial mimicry as well as more complex appraisals, on emotional outcomes.

1.5 The EASI model

Drawing together the various perspectives previously discussed is the Emotions As Social Information (EASI) model proposed by van Kleef (2009). While the EASI model focuses on the interpersonal effects of emotions where an interaction *is* the emotional situation, this thesis is concerned with the interpersonal effects of emotions in response to an external threatening situation. Moreover, the EASI model focuses more on behavioural than emotional outcomes. However it is particularly useful in that it encompasses the various explanations for social emotional influence already discussed, and provides a framework for understanding their different effects.

Consistent with the central argument of this thesis, the EASI model proposes that discrete emotions expressed by others have specific informational value and may exert social emotional influence via affective reactions (contagion) and/or via inferential processes (referencing/conformity/appraisal/comparison). We can simply react to the emotional responses of others or we can make inferences about those emotions. The emotions of another person provide information about how that person is feeling (directly through their emotions) and what they are thinking

(through the drawing of inferences about what thoughts their observable responses reflect). We may then consciously use this information, or we may be less knowingly influenced by it. In these ways, our behavioural response to a situation is argued to change as a function of the response of the other.

1.6 The importance of appraisal

Overall, there is evidence for social emotional influence occurring via the mechanisms of mimicry, referencing, conformity, appraisal and comparison. The various perspectives for explaining social emotional influence reviewed in this chapter, all suggest that the positive and negative emotional responses of others are evaluated (automatically or more consciously) in light of the identity of those others. Appraisal has been argued to involve both automatic and inferential processes (Kappas, 2006), thus can account for each of the mechanisms above. In the case of 'contagion', the automatic (and unconscious) appraisal of the fear expressed by another person could signal threat, thereby leading to an increase in one's own fear. While mimicry itself is said to occur without appraisal, the findings regarding the effects of the identity of the other on the occurrence of mimicry indicate that evaluation of the other is occurring at some level. The process of social referencing involves the explicit evaluation of the responses of others to inform one's own appraisal of the situation. The conformity model argues for the same process, with constraints on who is referred to, and the conditions in which influence is likely to occur. Finally, the social comparison process involves an evaluation of the response of another person in light of their identity, and the situation. Taken together, it seems reasonable to argue that the various perspectives discussed fit within the concept of social appraisal, whereby the other person and their response to a situation are appraised in addition to the situation itself. Thus, in this thesis, the social appraisal

perspective will be used as an overarching framework through which to investigate social emotional influence, and the processes underlying it.

1.7 Summary and thesis structure

To summarise, the reviewed literature tells us that people usually want to be with others when facing threat and that this can result in changes in negative affect through social emotional influence. The relationship between the self and the other influences how the other and their responses are appraised in the context of the situation. Comparisons of situational, personal and social similarities determine whether the other is used as a source of information and how this affects one's emotional response. Therefore, this thesis examines the effects of social emotional influence from both strangers and friends under various threat conditions, whilst keeping situational similarity constant. The social appraisal perspective provides the least limited framework in which the effect of the social context on emotional responses can be examined, while still allowing for the occurrence of other processes such as emotion 'contagion', social referencing, conformity and social comparison. As a consequence, this thesis utilises the social appraisal model to investigate social emotional influence in threatening situations.

Chapter 2 focuses on establishing the occurrence, outcome and possible process of social appraisal in an evaluative threat situation through an experiment and interviews with participants. Chapter 3 examines the effects of social appraisals in relation to a physical instead of evaluative threat. The first study involves an objective 'physical' threat situation while the second study uses an ambiguous threatening situation. In order to further test the generalisability of findings, Chapter 4 focuses on social appraisal in relation to a 'current' (at the time of data collection) realistic threat. The first experimental study is followed by a replication that

includes a think-aloud approach. The qualitative data are checked against quantitative findings regarding the effects of social appraisal. In chapter 5 conclusions regarding the process of social appraisal are presented together with a model of social emotional influence in threatening situations that can predict under which circumstances and in what ways other people influence our fear responses. Implications for future research directions are discussed.

CHAPTER 2. SOCIAL APPRAISAL IN AN EVALUATIVE THREAT SITUATION

2.1 Introduction

As discussed in the introduction to this thesis, there is substantial evidence of social emotional influence occurring in threatening situations, and various mechanisms by which it may occur. Our own emotional responses may come to resemble those of the people with whom we experience a situation through a process of emotional mimicry (Hatfield et al., 1994). Alternatively, the emotions of others with whom we are experiencing a situation can impact on our own emotional responses to what is happening through a process of inference (van Kleef, 2009). The social appraisal perspective is argued to provide the best explanatory framework for social emotional influence as it can account for various conceptualisations of the latter process (referencing, conformity, and comparison), and possibly even the former, although this thesis is not concerned with mimicry. The stress-affiliation hypothesis proposes that people want to be with others in stressful situations, in order to reduce uncertainty and subsequent feelings of anxiety (Schachter, 1959). Therefore, in threatening situations there is the potential for effects of social emotional influence and affiliation effects on fear. Conceivably, the responses exhibited by the other person, could also impact on affiliation *preferences*. First, the possible effects of the emotions of the other will be reviewed, followed by factors that can influence affiliation.

As summarised previously, findings regarding the effects of social emotional influence on the experience of negative emotions, including fear, have been mixed. More specifically, in some cases the mere presence of others, but not their emotional response has been shown to reduce the experience of anxiety (Jakobs et al., 1997).

While there is evidence that the expression of low fear or low stress by others can be associated with reductions in anxiety and stress (Gump & Kulik, 1997; Haslam et al., 2004), DeRosnay et al. (2006) found no fear reduction in infants when a parent expressed low fear. Findings regarding the effects of high fear expressions are somewhat more consistent, with resultant anxiety and stress generally increasing (e.g., Gump & Kulik, 1997; Haslam et al., 2004; DeRosnay et al., 2006; Klinnert et al, 1983).

As well as these inconsistencies in the findings regarding the outcomes of social emotional influence, there are also varied findings regarding people's preferences for affiliation in threatening situations, and whether the presence of others does indeed reduce fear. While there is evidence that people wish to be with others in stressful situations (e.g., Mawson, 2005) this is not always the case. As previously outlined, Rofé's (1984) 'utility theory' proposed that people will only engage in affiliation if anxiety reduction is the expected outcome. In circumstances where there is a possibility that the presence of another may increase feelings of anxiety, people would not wish to affiliate. This theory placed importance on the interplay between characteristics of the situation (whether the threat was imminent or delayed), the individual, and the potential affiliate, arguing that if the costs of affiliation were high (e.g., increased anxiety) then occurrence of affiliation would be low. Of key relevance for the current research is Rofé's (1984) proposal that 'emotional comparison' (the process central to Schachter's emotional-similarity hypothesis) could result in increased anxiety in some situations, via emotion contagion. Rofé argued that people would not wish to affiliate with anxious others in immediately threatening situations due to a concern that their own anxiety would increase. Interestingly, in a later study, Rofé and Lewin (1988) found this to occur

only for males, while across various threatening situations, and with varying potential 'costs' to the self, females always had a preference to be with others.

More recently, research has shown that the characteristics and identity of the other may also play a role in affiliation preferences. Li, Halterman, Cason, Knight, and Maner (2008) provided evidence that characteristics of the person with whom one is experiencing a stressful situation can impact on the extent to which one wishes to affiliate with them. Specifically, people more often wished to affiliate with a 'kind' person compared to someone who was attractive. Further, Yokoyama, Kurokawa and Seiwa (1992) demonstrated that the identity of the other (whether they were a friend or stranger) could also impact on affiliation preferences, with participants wishing to affiliate more with friends compared to strangers. They found mixed evidence regarding whether the presence of an affiliate reduced anxiety, but, importantly, the emotions expressed by the other were never specified.

As discussed in the introduction to this thesis, the focus on affiliation as an outcome in stress-affiliation research neglects the possible effects of the affiliate. In much research in this area, the emotional response of the affiliate is unspecified, or assumed to be 'anxious'. This is problematic because different emotions expressed by the affiliate could have positive or negative outcomes on one's own emotional state (Rofé, 1984). Furthermore, evidence suggests that the same emotion can have different directions of influence, potentially resulting in contrast as well as assimilation effects (e.g., Weisbuch & Ambady, 2008). Broemer and Diehl (2004) proposed that contrast as an outcome of social comparison was more likely than assimilation when social identity rather than personal identity was salient, due to an increased focus on dissimilarities between the self and comparison others (see also, Brown, Novick, Lord, & Richards,1992; Mussweiler, 2001a, 2001b). Further, regarding effects on emotions more specifically, Epstude and Mussweiler (2009)

found evidence of emotion assimilation when a similarity focus was primed, and emotion contrast when a dissimilarity focus was primed (see also, Collins, 1996; Gudykunst, & Nishida, 1984; Ruys, Spears, Gordijn, & de Vries, 2006). Taking into account the impact of perceived similarity/dissimilarity between the self and other, being with someone anxious could increase (assimilation) or reduce (contrast) anxiety and being with someone calm could reduce (assimilation) anxiety or increase it (contrast).

Overall, it appears that while the mere presence of others in stressful situations can lead to a reduction in negative affect consistent with the stress-affiliation hypothesis, the identity of these others and the emotions they express can have further differential impacts, resulting in emotion assimilation or contrast- an idea that is central to my first study.

2.2 Study 1

The first aim of Study 1 was to establish the effects of social appraisal and affiliation in a threatening situation. In line with Parkinson and Simons (2009), both social appraisal and emotion contagion models of social emotional influence could plausibly explain observed effects on emotions. The emotion contagion model would see emotions more directly influenced by the response exhibited by another person (via mimicry, for example), and changes in appraisals would follow. Alternatively, the social appraisal model would predict that the response exhibited by the other would influence appraisals of the situation, which in turn would direct emotion. Thus an additional aim was to compare these two explanations. Second, because there is mixed evidence regarding people's affiliation preferences in stressful situations, and these preferences could conceivably impact on the outcome

of social emotional influence, affiliation preferences and their relationship to social appraisal were also explored.

In this study, a paradigm similar to those used in previous stress-affiliation research was utilised (e.g., Gump & Kulik, 1997); however, due to ethical considerations the threat manipulation did not involve a physical threat (such as electric shock) but instead involved an evaluative threat (public speaking) that has been shown in previous research to be quite stressful (e.g., Stemmler, Heldmann, Pauls, & Scherer, 2001; Yoon & Zinbarg, 2007). Confederates were utilised in order to effectively control for the response of the other, and because the confederate was unknown to participants, a 'stranger' interaction was the focus. Follow-up interviews were conducted with participants in order to explore affiliation preferences and factors underlying the process of social appraisal.

2.2.1 *Hypotheses*

1a. In line with the social appraisal perspective, rather than the mere presence of the other reducing fear, it was expected that the emotions exhibited by them would have differential effects. There were two possible directions of influence. Emotion assimilation could occur (e.g., Gump & Kulik, 1997), where the presence of an anxious confederate would be associated with an increase in participant's fear and the presence of a calm confederate associated with a decrease in participant's fear. Alternatively there could be a contrast effect (e.g., Epstude & Mussweiler, 2009) where anxiety would decrease when the confederate was anxious and increase when they were calm.

1b. In line with cognitive appraisal theory, it was predicted that the above changes in emotions would be associated with corresponding changes in threat appraisal. As in hypothesis 1a, these changes would reflect assimilation or contrast.

2. According to the social appraisal model, the emotions of others impact on participant emotions through appraisals. This is in contrast to the emotion contagion model, which argues that the effects on emotions *precede* these appraisals. Therefore, if the social appraisal perspective provides the best explanation for social emotional influence, it was expected that changes in perceived threat would mediate the relationship between the confederate's emotion and participant's change in fear. Participant's change in fear would *not* mediate the relationship between confederate's emotion and perceived threat, as predicted by the contagion model.

2.2.2 *Method*

2.2.2.1 *Participants*

Participants were 68 female[1] student volunteers from Flinders University aged between 18 and 58 (M = 23.88, SD = 10.02). They were paid a $10 honorarium for their time.

2.2.2.2 *Design*

A 2 (time: baseline, post manipulation) by 2 (other response: anxious, calm) mixed experimental design was used. Outcome measures (self-reported emotions and appraisals) were obtained on both measurement occasions, and participants were randomly assigned to other response condition. Qualitative data were collected in a semi-structured interview at the conclusion of the session.

2.2.2.3 *Materials*

[1] Female participants only were used to control for possible interaction effects with the gender of confederates (female) (e.g, Rofé & Lewin, 1988).

Cover story. Participants believed they were participating in a study examining the psychological responses and processes people go through while preparing for and completing various tasks (see Appendix A for information provided to participants).

Baseline and post-task questionnaire. The same basic questionnaire was provided at two time points in the study. The order of item presentation was varied and some additional task specific questions were included in the post-task version.

The baseline questionnaire (Appendix A) contained 11 appraisal, cognition and action tendency items among which perceived threat items were embedded, for which participants were asked to indicate their level of agreement on a scale of 1 (*not at all*) to 7 (*very much*) at this moment. Following this were 18 emotion and arousal items including fear measures as well as various filler items. Again, these were rated on a scale of 1 (*not at all*) to 7 (*very much*).

The post-task questionnaire (Appendix A) included an additional 10 questions regarding task-specific actions and thoughts that were rated on the same 7-point scale. These were included to support the believability of the experiment cover story. Reliabilities were acceptable for threat items (I am concerned about what is going to happen, This situation is not very threatening (reverse coded), I feel threatened) at time 1 – baseline (Cronbach's $\alpha = .81$) and time 2- post-task ($\alpha = .76$), and fear items (frightened, afraid, fearful, anxious, nervous, scared) at time 1 ($\alpha = .93$) and at time 2 ($\alpha = .91$). Total scores for outcome variables of perceived threat and fear were calculated by averaging items in each category.

Threat manipulation. Participants were given a five-minute writing task where they were asked to write a paper about global warming. They were also told that they would be required to present their paper to a team of researchers. Stemmler et al. (2001) and Yoon and Zinbarg (2007) have shown a similar manipulation to be

effective in eliciting anxiety. Below is the information, containing the manipulation, which participants read at the beginning of the session:

In today's session you will be asked to complete two tasks and answer questionnaires about your thoughts and feelings. You will also be verbally interviewed after you have completed your first task.

For your first task, you will be given 5 minutes to write a speech about a topic that will be assigned to you shortly. When writing this speech we want you to really think about the content and how this will be received by our observers.

For the second task, we will bring in our research team and you will present to them the speech you have written. They will be assessing the content of your talk for intelligence and clarity, and they will be assessing the quality of your performance. You will be provided with feedback about your performance following the presentation.

Confederates. Two female psychology honours students were used on alternate days as confederates for the study. They were given a behaviour protocol to learn prior to testing beginning (see Appendix A). This was in written form and included a videotape of the lead researcher, which they were asked to copy. There were no main effects or interactions for confederate identity on any outcome measures, indicating that the two confederates did not exert differential effects.

Semi-structured interview. The interviews (Appendix A) were designed to explore how participants felt about being with another person, and their reasons for this, and their perceptions of the 'other'. They were asked "*If you had a choice of whether or not to have another person in the room with you while you completed the task, what would you choose?*". This question was followed up with a request for an explanation for their choice if participants did not spontaneously provide one. More specific questions about the confederate, in which the manipulation check of

perceived emotion was included, were then asked. Participants were asked '*how do you think the other participant was feeling?'*. Responses were categorised as non-anxious/calm, anxious/non-calm or 'don't know'[2]. Three final questions served as checks for suspicion and study understanding. Participants were asked whether they had found anything unusual or strange about the session so far, whether they felt the tasks and questionnaires were related to each other in anyway, and what they believed the study to be about[3].

2.2.2.4 *Procedure*

On arrival participants were seated outside the main testing room and provided written consent and basic demographic information. They were informed that we were waiting for another participant to arrive, but would begin the first part of the session while we waited.

They were then taken into the main testing room and seated at a table. The experimenter handed them the baseline questionnaire that began by explaining the task they would do, and was followed by measures of baseline appraisals and emotions. Once participants were seated and doing the questionnaire, the experimenter text messaged the confederate who then 'arrived'. The confederate was seated in the outer room and supposedly completed the first questionnaire there. The confederate always arrived a couple of minutes after the participant had begun the first questionnaire. This allowed for the real participant to complete baseline measures of their response to the situation *alone*.

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[2] The author coded all transcripts, then an independent rater coded 50% of these. Inter-rater agreement was very high (93%, Kappa = .884, $p < .001$) thus results from the author were retained and used in analyses.

[3] Only one participant expressed suspicion about the confederate, though when probed they stated this was a 'fleeting' thought, and they were very surprised to find that this was actually the case. None of the participants identified the true nature of the study. Therefore, data for all participants were retained.

Once the participant had completed the first questionnaire, this was collected and the confederate was brought into the testing room and seated at a 90-degree angle facing the participant. They were asked not to speak to each other. The experimenter gave each person a sheet with the task instructions and a folder containing the post-task questionnaire that contained appraisal and emotion measures. They were informed that a timer placed on the wall would be set for 5 minutes. When the timer sounded they were to stop the task and move onto the questionnaire in the folder.

Once both the task and questionnaire were completed, the experimenter again entered the room and collected the materials. The participant and confederate were informed that prior to their presentations, the interview part of the session would occur, and that they would be interviewed one at a time. The real participant was always the first to be interviewed and the confederate was escorted outside and told that they would be interviewed following the first participant. At the conclusion of the interview participants were informed of the true nature of the study and that they had been participating with a confederate. They were then paid and given a written debrief information sheet.

2.2.3 *Results and Discussion*

2.2.3.1 *Manipulation checks*

The manipulation of threat in this situation was not successful, with very low levels of perceived threat at baseline when participants were alone (M = 1.34, SD = .67). The manipulation of the emotional response of the confederate was successful, with more participants rating the calm confederate as non-anxious/calm (n = 26) than as anxious/non-calm (n = 7), and the anxious confederate as anxious/non-calm (n = 32) than as non-anxious/calm (n = 3), Pearson Chi Square = 18.13, p<.001. Participants who rated the confederate's emotion as the opposite of that which was

intended (e.g., anxious when expected to be calm and vice versa) were excluded from further analyses, leaving a total of 58 participants.

2.2.3.2 *Main analyses*

2.2.3.2.1 *Establishing the effects of social appraisal and affiliation*

If affiliation does lead to a reduction in anxiety, there should be a main effect of time on fear. However, if anxiety changes as a function of social appraisal, this main effect of time should be qualified by an interaction between time and confederate response on participant's fear such that this changes differentially in relation to the emotions exhibited by the confederate. In line with cognitive appraisal models of emotion, the same pattern of results should be observed for perceived threat.

Two 2 (Time: baseline, post-manipulation) by 2 (Confederate response: calm, anxious) mixed ANOVAs were performed on the dependent variables of fear and threat. Descriptive statistics are presented in Table 2.1.

Table 2.1. *Means (and standard deviations) for perceived threat and reported fear as a function of confederates response and time.*

Confederate's Response	Time	Perceived Threat	Reported Fear
Anxious	Time 1 (alone)	1.47 (0.72)	2.41 (1.24)
	Time 2	1.19 (0.40)	1.95 (0.97)
	Total	1.33 (0.56)	2.18 (1.11)
Calm	Time 1 (alone	1.27 (0.60)	2.31 (1.26)
	Time 2	1.54 (1.03)	2.27 (1.30)
	Total	1.41 (0.95)	2.29 (1.28)

There was a main effect of time on participants' self-reported fear, F (1, 56) = 8.43, p = .005, partial-η^2 = .13; however this was qualified by a time by confederate response interaction, F (1, 56) = 5.95, p = .02, partial-η^2 = .10. While participant fear remained stable from time 1 to time 2 (M = 2.31 vs M = 2.27) when in the presence of a calm confederate, it decreased from time 1 to time 2 (M = 2.41 vs M = 1.95) when the confederate was anxious, F (1, 56) = 16.56, p < .001, partial-η^2 = .23.

There was no main effect of time on perceived threat, however there was significant two-way interaction between time and the confederate's response, F (1, 56) = 8.83, p = .004, partial-η^2 = .14. Simple effects analyses showed a cross-over effect. When the confederate was calm, perceived threat increased from time 1 to time 2 (M = 1.27 vs M = 1.54), F (1, 56) = 3.83, p = .05, partial-η^2 = .06. In contrast, when the confederate was anxious, participant threat decreased from time 1 to time 2 (M = 1.47 vs M = 1.19), F (1, 56) = 5.14, p = .03, partial-η^2 = .08.

While effects were very small, hypotheses 1a and 1b were supported, with participant emotions changing systematically on the basis of the confederate's

exhibited emotion. Participant emotions did not move in the direction of those exhibited by the confederates (assimilation), but showed a contrast effect. Threat appraisals were influenced in a similar way, in line with appraisal theories of emotion. These findings are inconsistent with previous findings of emotion assimilation under threat (e.g., Fischer et al., 2004; Gump & Kulik, 1997). Of particular importance, Gump and Kulik (1997) found evidence of emotion assimilation using a similar research design; however the type of threat they used was physical rather than evaluative. There is evidence to suggest that perceived competitiveness makes differences between the self and another person salient, leading to contrast effects (Weyers et al., 2009). In the current study, the threat of evaluation in the presence of another person could have been perceived as competitive (Smith & Insko, 1987)- an idea that is discussed further under the qualitative analyses.

The fact that the main effect of time on fear responses was qualified by a time by response interaction raises the question of whether anxiety reductions associated with affiliation that have been observed in previous research (e.g.,Yokoyama et al., 1992) may also have reflected the impact of the affiliate's expressed emotions. While the effects of the emotions of the other are implied in stress-affiliation research, this factor has not always been measured.

2.2.3.2.2 *What process underlies the observed emotion contrast?*[4]

In line with Parkinson and Simons (2009), a series of regressions (Baron & Kenny, 1986) were performed to compare two models of social emotional influence. The social appraisal explanation predicted that changes in perceived threat would mediate the relationship between confederate response condition and participants'

[4] Change scores, calculated by subtracting time 1 scores from those at time 2, were used in the following analyses

change in fear from time 1 to time 2. Alternatively, the emotion contagion explanation predicted that changes in emotion would mediate the relationship between confederate response condition and change in perceived threat. Results for each model are presented in Table 2.2.

Table 2.2. *Tests of mediation and associated β values for the social appraisal and the emotion contagion models of social emotional influence*

mediation chains (IV→ MV→ DV)	IV→MV	MV→DV	IV→ DV	IV→DV/MV	z
Other Response→ Threat→ Fear (Social Appraisal model)	-.37**	.41**	-.31*	-.18	-2.00*
Other Response→ Fear→ Threat (Emotion Contagion model)	-.31*	.41**	-.37**	-.27*	

Note. IV = independent variable; MV = mediator variable; DV = dependent variable; IV→ DV/MV = the relationship between the IV and DV when the effect of the MV is controlled.
*p <.05, **p < .01.

As can be seen in Table 1, for both models the first three requirements of mediation were met. However, a bootstrapping test of the indirect effect (Preacher & Hayes, 2004) showed it was only significant for the social appraisal model (z = -2.00, p = .05). After controlling for perceived threat, the proportion of variance in self-reported fear scores explained by the confederates emotional response reduced from 9.6%, $F(1, 56) = 5.95$, p = .02, to 2.9%, $F(1, 54) = 1.92$, p = .17. Therefore, the social appraisal model appears to be a better fit for the data than the emotion contagion model, providing evidence of the value of social appraisal when

explaining social emotional influence. This finding is unsurprising in light of the direction of effects observed in this study. That is, contagion assumes the movement of emotions in the direction of those exhibited by the other, whereas I found a contrast effect between the emotion expressed by the confederate and that experienced by the participant. Thus the emotion contagion model, that changes in emotion would mediate the relationship between confederate response condition and change in perceived threat, did not provide the most logical theoretical explanation for the effects observed.

Having established the occurrence of social emotional influence in a situation that elicited low threat (but which was still described by participants as stressful), I next wanted to explore the underlying preferences people had for company in stressful situations, with the view that affiliation preferences might impact on (1) the perceptions of the affiliate, and (2) the outcome of social appraisal. It was anticipated that these data would provide direction for the remainder of this thesis.

2.2.3.2.3 *Qualitative data*

Participant responses regarding their preferences for being alone or with others in stressful situations, and their explanations for these preferences were determined by examining interview transcripts (n = 58). The lead author identified 4 categories of explanation, 2 for being alone (distraction and competition), and 2 for being with others (comfort and confirmation), with remaining responses classified as 'other'. A second rater read 25% of the transcripts and identified similar categories. Where the two raters differed this was resolved through discussion. Actual interview questions are reproduced in Appendix A.

Overall, more participants (45%) expressed a preference to be alone than to be with someone else in a situation such as the one they were experiencing[5]. As the other in this study was a stranger rather than a friend, this finding is consistent with Yokyama et al. (1992). The explanations participants provided for their preference help to further elucidate this issue.

Where participants expressed a preference to be alone, the most common reasons were due to being distracted by the presence of another person or feelings of competitiveness with them. In terms of distraction, a number of participants (28%) mentioned their mere presence, as well as how their presence would lead to thoughts which would also distract from the task at hand- " *it's a little bit distracting, being with someone else…and you're always sort of wondering what they're doing and about how it relates to you*", "*I'd probably choose to be alone so I can focus*", "*I'd probably choose alone because just by them being there…what they're doing would distract me*". Where competitiveness was the focus, participants (17%) generally perceived comparison between themselves and the other in a negative manner- "*I'd probably choose alone because I'm very conscious of what they're doing…I know it's not a competitive thing but I'd still be thinking maybe I'm not doing as well as I should be*", "*When there's someone else there I feel pressured to do as well as they're doing*", "*I guess probably more alone because it's not as intimidating…so you can't compare yourself*".

Overall, the preference to be alone seems to reflect perceptions that one's performance on the task could be negatively affected by the presence of someone else through distraction or negative (competitive) comparisons with them. Recent research has shown that people feel less trust towards someone they perceive as competitive compared to cooperative (van Kleef, De Dreu, & Manstead, 2006).

[5] Thirteen participants (22%) expressed no preferences for being alone or with another and/or provided no reason for their preference- their responses are not discussed further.

Related to this, there was a general theme of not feeling comfortable with the other person, "*I'd prefer to be alone, because if I'm alone I' d be able to express myself, but if there's another person…I may not…maybe they would think 'why is she talking like that?'* ", also possibly reflecting a lack of trust in them and/or their motivations. This raises the question of whether people who wish *to be* with someone else also have more trust in them.

Responses of the participants who preferred to be with someone else (32%) did bear this out. Where the presence of another was wanted this was mainly for the purposes of comfort or for confirmation of experience; thus in contrast to the reasons for being alone, these reasons assumed a positive relationship between the self and the other. Regarding participants who wanted comfort (22%), this was expressed through a desire to affiliate with the other- "*Probably doing it with someone else just because…I like having someone around…someone to laugh with at the end*", "*I'd prefer to be with someone else, 'cause maybe you can share…what we thought about it*". Importantly, the identity of the other person was also highlighted with several participants expressing a desire to be with someone they knew as opposed to a stranger - "*If it was maybe someone I knew, someone I was friends with I maybe wouldn't mind…but if it was a complete stranger, it would be a bit weird, and I probably would mind…well sometimes strange people can make you a bit uncomfortable can't they?*", "*…if it was another person I probably would rather be on my own, but if it was one of my friends then I'd rather have one in here as well. I'd probably be just as nervous about talking to [a stranger] as I would be about the task itself*". Thus, it appears that desire to affiliate is less important than the source of potential affiliation, with friends preferred over strangers (again in line with Yokoyama et al., 1992). Regarding confirmation of experience, a number of participants (10%) expressed a preference to be with someone else so they could gain

information from them. This could be in an implicit- "*I guess having someone else there, you know what you're doing because they're doing it as well*", or explicit manner- "*If I didn't understand certain things I'd want to ask someone*".

In summary, where participants desired to be with someone else, factors including desire for communication with or support from a friend (which implies previous experience with or knowledge of the other person), and usefulness of the other as an information source were expressed as important. In contrast to those who wanted to be alone, the above reasons imply a certain amount of trust in the other person. A final question regarding the extent to which the confederate was trusted in this situation was asked at the conclusion of the interview and responses provide additional support for this reasoning.

When asked about trust in the other person, the majority of participants (75%) expressed that they wouldn't trust them very much, providing reasons that very much reflected the findings regarding social preferences. That is, the identity of the other (a stranger) and knowledge of or previous experience with them- "*Probably as much as you'd trust a stranger…it's hard to say when you haven't had anything to do with them*", "*probably not a whole lot 'cause there was no interaction, so…speaking to you, I'd trust you more…I didn't really know anything about her, so I probably wouldn't be very trusting*", as well as the 'expertise' of the other- "*probably in the middle because I don't know anything about them…I'd probably trust you more because you know what you're doing*" were characteristics participants cited as important in determining how much to trust the other person. Taken together, trust arises from the identity of the other, previous shared experience with them and their perceived expertise in a given situation.

2.2.4 General Discussion

The quantitative findings from this study showed emotional contrast to be the outcome of social appraisal in an evaluative threat situation. Being with an anxious stranger resulted in a reduction of fear. However, in the presence of a calm stranger, while perceived threat increased, this did not follow through to changes in fear. The finding of no fear increase is in line with the argument of social comparison theory, that under most circumstances comparison should be beneficial for the self (e.g., Taylor & Lobel, 1989; Wood, 1989). According to this explanation, the emotional contrast observed reflects a process of downward contrast whereby participants differentiated their own experience in a positive direction from the more anxious other.

In the current study, results of mediation analyses provided support for an appraisal model of social emotional influence, where the emotions of the other influence situation appraisals and it is these that change emotion. However, the finding discussed above, of increased threat not following through to increased fear, shows that the model is not unequivocally supported. Importantly, the finding of emotional contrast rather than assimilation lends credence to the argument that social emotional influence *does not* occur in this situation through mimicry and facial feedback (primitive emotional contagion). However there is mixed evidence regarding the concordance between expressed emotion and subjective experience (e.g., Chartrand & Bargh, 1999 vs Wild et al., 2001), so this explanation while implausible, cannot be ruled out.

A particular strength of the current study is the use of a real threat situation, with confederates actually expressing emotion. While scenarios have been shown to be largely equivalent to real experience in relation to eliciting emotion (Robinson & Clore, 2001), one criticism of their use in the context of social appraisal is that the

emotions of the other are made explicit, thus the perceiver is forced to pay attention to them- which may or may not be the case in real situations (Fischer et al., 2004).

Furthermore, when thinking about the purpose of affiliation under threat, these results add to and extend the literature regarding the importance of taking into account the emotions expressed by another. It cannot be assumed that an affiliate will always be (or appear to be) anxious when facing a threat, and the level of anxiety they express could have differential effects. These effects could reflect not only emotional assimilation, as has been found previously (e.g., Gump & Kulik, 1997; Jakobs et al., 1997), but also emotional contrast (e.g., Collins, 1996; Epstude & Mussweiler, 2009), as shown in the current study. As was discussed earlier, the observed contrast effect may relate to being in an evaluative threat situation where possible competition is salient (Hakmiller, 1996). Competition drives differentiation between the self and other, resulting in a contrast effect (Weyers et al., 2009). The qualitative responses discussed above indicate that the presence of a stranger could be associated with perceived competition, lending support to this explanation.

The aims of the qualitative analysis were to demonstrate how affiliation preferences influence (1) the perception of affiliates, and (2) outcomes of social appraisal. With respect to perceptions of affiliates, being with strangers was perceived as competitive and distracting, whereas friends were expected to provide comfort and confirmation of experience. These different perceptions could result in differential outcomes of social appraisal, regarding the other person. Competitiveness and distraction were associated with negative evaluations of the other, while comfort and confirmation were associated with more positive evaluations of the other. Taken together, the novel contribution of these qualitative findings is that they provide insight into how affiliation preferences can impact on perceptions of other people in an anxiety-provoking situation. They also show how

these perceptions can inform evaluations of other people within the social situation- an element of social appraisal. The observed preference to be with friends rather than with strangers in a threatening situation can be attributed to specific identity characteristics.

The strong focus of participants in this study on the identity of the other, which is reflected by their preference to be with friends compared to strangers, is largely consistent with previous research showing the differential effects of friends and strangers (and in-group and out-group members) on social emotional influence. That is, it has been suggested that the *identity* of the other is important in determining the occurrence and strength of social emotional influence, with experts (Taylor et al., 1990; Randall Crosby et al., 2008), friends (e.g., Hess et al., 1995; Wagner & Smith, 1991; Weyers et al., 2009) and in-group members (Bourgeois & Hess, 2008; Haslam et al., 2004; Platow et al., 2005) exerting more influence than non-experts, strangers and out-group members.

There are at least two fundamental characteristics that may drive identity effects in social appraisal: the credibility of the other as an information source (Suls et al., 2002) and perceived similarity between the self and the other (Epstude & Mussweiler, 2009). While experts would necessarily be credible sources of information, *in the absence of any other information about the other* friends and in-group members would also likely be perceived as more credible than strangers and out-group members, by virtue of the fact that they are a 'known' quantity (e.g., Foddy, Platow & Yamagishi, 2009; Williams, 2001). 'Knowing the other' also emerged in the interviews in the current study as an important determinant of desire for affiliation. While experts would be unlikely to be perceived as similar to the self (in fact the opposite of this may be true), friends and in-group members *would be* perceived as more similar to the self, and people would have more previous

experience with them than with strangers and out-group members. As discussed in the introduction to this thesis, credibility, similarity and previous experience with another person are evaluated to determine the extent to which their responses can be trusted to usefully inform the self (Suls et al., 2002). Given that 'trust' itself is a key characteristic of importance in social interactions (Cottrell, Neuberg & Li, 2007), it may subsume these issues of credibility and similarity. It has already been proposed that the interview responses in the current study reflected varying levels of trust in the other person as an important factor in determining affiliation preferences. Trust was proposed to arise from the identity of the other, previous shared experience with them as well as their perceived expertise. Therefore, in light of the former two reasons, and because this thesis is concerned with interpersonal interactions, it seems sensible to explore the issue of trust in relation to friends rather than strangers.

2.3 Trust

According to Jones and George (1998) trust is "…an expression of confidence between the parties in an exchange of some kind – confidence that they will not be harmed or put at risk by the actions of the other party…or confidence that no party to the exchange will exploit the other's vulnerability." (pp.531-532). Whilst this thesis examines trust in situations where exchange does not necessarily occur, elements of this definition are still useful. Confidence in the behaviour or response of the other, and comfort in expressing vulnerability are both issues that were raised by participants in the interviews in the current study.

Regarding the experience of trust, Jones and George (1998) propose it involves the interaction of values, attitudes and emotions. The 'value' component comprises those principles anecdotally associated with trust- loyalty, honesty, reliability, predictability and fairness, for example. The values that a person holds as

important will influence the extent to which trust in another will be experienced. The attitude component reflects general beliefs about how and why people act in situations, and these are based on prior knowledge and previous experiences. When we encounter a situation, we automatically view that situation through the lens of our previous experience. "…given that social interaction is built on expectations that are partially cognitive and based on past experience, it is likely that people's attitudes towards others contain beliefs about the trustworthiness of these others based on past experience, knowledge, and interactions."(Jones & George, 1998, p.533).

Finally, the emotion component of this trust model refers to (1) the emotions and moods people experience when they experience trust. That is, the presence of a trusted versus less trusted other may impact on one's emotional or mood state (e.g., feeling more comfortable and calm in the presence of someone trusted); (2) the effect of affective state on trust judgements. Being in a negative mood maybe associated with negative judgements about another and associated decreased trust in them. Similarly, being in a positive mood can enhance our positive feelings towards others, and thereby increase our trust in them; finally, (3) people's expectations regarding the 'meaning' of trust are at least in part emotional and signal information about their relationships with others (e.g., having our trust 'broken' by another person signals a problem with the relationship). In relation to this thesis the first emotion component is of central relevance. If social appraisal occurs in threatening situations, the extent to which the 'other' is trusted may affect the emotional outcome of this.

Jones and George (1998) provide a model that helps explain the different types of trust people have in strangers versus friends. Importantly, while level of trust may be higher for friends versus strangers this does not mean that people *distrust* those they have *less* trust in. Jones and George propose that trust is a 'dynamic experience' consisting of three distinct states on a trust continuum: distrust,

conditional and unconditional trust- and people move between these states dependent on various factors. Thus, trust can be absent (distrust) or range from trust based on an assumption there is no reason to *distrust* the other, to that based on informational evidence and explicit knowledge about the other person. Conditional trust is at the 'lower' end of the continuum. It is based on the assumption that the other probably shares similar values to the self, therefore should not be distrusted. Unconditional trust (which is at the 'higher' end) occurs following extended interaction with, and extensive knowledge about another person, for example, a friend.

An interaction between two strangers typically begins with a sense of conditional trust in the other (e.g., Schul, Mayo, & Burnstein, 2004). That is, a person will assume that there is no reason to distrust the other. Yamagishi, Cook and Watabe (1998) argue that in Western cultures, this general tendency to trust others (or not distrust them) 'allows' people to interact with strangers. Following experience with the other (or in the face of evidence) this initial trust may change to distrust or unconditional trust. If evidence arises that the other does not share the same values as the self, distrust will likely be the result. In contrast, when positive evidence from *repeated interactions* builds up to form a relatively in-depth knowledge about the other, unconditional trust will result. As the development of unconditional trust requires repeated relations with the other person, and the title of stranger implies little previous interaction, while one could experience the full trust continuum in relation to a friend (unconditional trust reducing or distrust developing in the face of negative evidence or experience), only conditional trust and distrust would be relevant to a stranger interaction.

In the current study, the qualitative responses from participants regarding trust judgments, "*I've got no reason not to trust her*", "*probably as much as you'd trust a stranger*", "*she gave me no reason to think 'oh, I'm not gonna trust her*'",

suggest that conditional trust was elicited. When conditional trust as opposed to unconditional trust is present, people may question the intentions of the other, being unable to trust their responses and actions at face value (Jones & George, 1998). They may also be less likely to engage in help-seeking behaviour from them, due to insecurity regarding how they will be perceived by the other (e.g., as inadequate) and because they may feel threatened at the prospect of being dependent on them. In contrast, unconditional trust is associated with being able to more reliably predict and be assured of the intentions of others as inferred directly from their responses and actions, and feeling more able to rely on them for support and comfort (Jones & George, 1998).

While the differentiation between conditional and unconditional trust helps explain differences in trust on the basis of the *identity* of the other, it does not adequately explain potential variation in which the discrete *responses* of strangers or friends are trusted or distrusted in a given situation. As this thesis is concerned with the interpersonal influence of emotional responses to a threatening situation, the issue of trust in these responses is centrally relevant. While a stranger may be trusted on the basis of a suspension of belief, this doesn't necessarily translate to trust in their overt responses. Indeed, it may be that conditional trust is associated with questioning of these responses (Jones & George, 1998). However, in some situations, the responses of strangers may be trusted *more* than responses of friends (e.g., when the stranger is an expert, Taylor et al., 1990). Similarly, the responses of an unconditionally trusted friend can vary according to situational factors. As discussed previously, the extent to which another is trusted unconditionally develops over time and repeated interactions. This development over time implies an ongoing relationship between the parties, and involves a pool of shared experience that can be used to evaluate the trustworthiness of the response of the other in different situations

(Rousseau, Sitkin, Burt & Camerer, 1998). For example, the response of a friend who often plays practical jokes may be trusted in a funny situation but less in an anxiety provoking situation.

In sum, while the identity of the other (friend or stranger) may be associated with differential levels of base trust, there is the potential for variation in trust *within* persons of different identities. This, coupled with the inconsistent findings regarding the influence of others based on their identity as outlined earlier in this chapter, lends support to the argument that it is not identity alone that determines how social emotional influence occurs. Rather, trust in the responses of others of various identities is of key importance in determining the occurrence and outcome of social appraisal. Therefore, the differential effects of low versus high trust in the responses of others, on the outcome of social appraisal in threatening situations, will be investigated. The findings from Study 1 suggest that people have a preference to be with friends compared to strangers in an evaluative threat situation. However, the levels of threat actually elicited here were very low. Therefore, the remaining studies in this thesis will focus on friend interactions in more severe threat situations involving physical rather than evaluative threats (Kreibig, 2007; Rapee, 1997). The aims of studies 2a and 2b will be to (1) demonstrate the occurrence of social appraisal, this time with a friend, in a more objectively threatening (Study 2a) and an ambiguous threatening (Study 2b) situation, and (2) explore the potential effects of trust on this process. Study 3a will build on the findings from Studies 2a and 2b by manipulating not only the emotional response of a friend, but also the trustworthiness of that response to a realistically threatening situation. The final study in this thesis replicates Study 3a but with a think-aloud paradigm. This will allow qualitative data regarding thought processes to be linked to quantitative data reflecting the effects of social appraisal. In this way, the process of how trust *actually* impacts on social

appraisal can be outlined, providing a model for future research in this area. The final chapter will draw conclusions regarding the role of trust in social appraisal and present a model of social emotional influence in threatening situations that can predict under which circumstances and in what ways friends can influence fear responses.

CHAPTER 3. SOCIAL APPRAISAL IN OBJECTIVE AND AMBIGUOUS THREAT SITUATIONS: THE MODERATING EFFECTS OF TRUST

3.1 Introduction

Study 1 demonstrated the effects of social emotional influence of strangers in an evaluative threat situation. The observed effects on emotions were partly consistent with the argument that affiliation under stress is associated with a reduction in negative affect. However it was the emotions exhibited by the other, rather than the mere presence of them that were of central importance. The presence of a confederate expressing anxiety was associated with a decrease in participant fear, thus, unlike previous research finding emotion assimilation under threat (e.g., Gump & Kulik, 1997), I found emotion contrast. Further, the effects of the emotion expressed by the confederate on participant fear were mediated by changes in participants' threat appraisals, providing evidence to support the social appraisal model of social emotional influence.

Interview data highlighted the importance of the identity of the affiliate when choosing whether to be with someone or not, with friends clearly preferred over strangers. Participants who wanted to be alone did so because they thought the presence of another person would be associated with competitive behaviour or would distract them from the task. When the presence of an affiliate *was* desired, making the participant feel more comfortable and providing a comparison point regarding their experience of the situation were the most important reasons. Underlying the preference for friends compared with strangers was an implicit focus on the trustworthiness of the other. That is, if the other could be trusted, their presence would have positive outcomes for the self. In light of other research into the role of

identity in social influence (Bourgeois & Hess, 2008; Haslam et al., 2004; Hess et al., 1995; Weyers et al., 2009) and regarding interpersonal trust (Jones & George, 1998; Rousseau et al., 1998), it was argued that rather than the identity of the other driving the preference for affiliation (and the outcomes associated with this), it was the extent to which the responses of the other could be trusted. If this is the case, presumably different levels of trust in the response of a friend could also result in different effects of that response on one's experience of fear in a threatening situation.

3.2 Study 2a

As discussed in the introduction to this thesis, there are at least 2 types of threatening situations that reliably elicit fear: evaluative and physical. Study 1 demonstrated the occurrence of social appraisal in relation to an evaluative threat. The current study will investigate social appraisal in the context of an objective physical threat. Findings from Study 1 showed the effects of social appraisal in relation to a stranger. As outlined above, I found a preference for the presence of friends compared to strangers in threatening situations, primarily due to differences in the extent to which they could be trusted. If, as I argue, differential effects in relation to the identity of the other actually reflect differences in the extent to which the responses of these others can be trusted, then I need to look at the effects of trust *within* an identity category. Given the preference for the presence of friends in threatening situations, trust in the response of friends will be examined.

Thus, the general aim of this study is twofold. First, it seeks to establish the occurrence and effects of social appraisal of a *friend* on perceptions of and responses to a more *objectively* threatening situation. Second, potential moderating effects of trust on that process will be explored within the identity category of friends, with the

aim of demonstrating that identity status itself is not a necessary condition for the occurrence of social emotional influence.

3.2.1 *Hypotheses*

1. In line with the qualitative findings from Study 1, and consistent with predictions regarding the purpose of affiliation in stressful situations, the presence of a friend should be associated with a reduction in negative emotions. According to the literature regarding social appraisal (Manstead & Fischer, 2001), this change in emotion is related to the response exhibited by the friend, rather than their mere presence. Therefore, there is also the possibility that negative emotions could *increase*. As demonstrated by the findings of Study 1, changes in emotion could be associated with emotion contrast, while other research provides evidence of emotion assimilation (e.g., Gump & Kulik, 1997). Thus, it was hypothesised that the emotional response exhibited by the friend would predict the change in participants' perceptions of threat and feelings of fear from time 1 (when they were alone) to time 2 (when the friend and their response were introduced). In the case of emotion contrast, perceived threat and fear would decrease in the presence of a more fearful friend, and increase in the presence of a less fearful friend. If emotion assimilation occurred perceived threat and fear would decrease in the presence of a less fearful friend, and increase in the presence of a more fearful friend.

2. It was further predicted, in line with cognitive appraisal theories of emotion, that changes in reported threat would mediate the relationship between friend response and change in fear.

3. If trust in the response of the other influences the process of social appraisal, such that high trust is associated with more influence, and low trust with less, then it could be predicted that there would be a positive relationship between

level of trust in, and the extent to which participant emotions are influenced by, the response exhibited by their friend. If social appraisal leads to the outcome of emotion contrast, this contrast should be reduced under conditions of low trust. Likewise, if emotion assimilation is the outcome, levels of assimilation would reduce as level of trust decreased.

3.2.2 Method

3.2.2.1 *Participants*

The scenario and questionnaire were administered to 86 undergraduate student volunteers from Flinders University (65 female), ranging in age from 18 to 56 years (M = 23.59, SD = 8.90), who obtained partial course credit for participating.

3.2.2.2 *Design*

A 2 (Time: 1-alone, 2-with friend) by 2 (Friend response: low fear, high fear) mixed factorial design, scenario study was used to examine social emotional influence in a threatening situation. Self-reported appraisals and emotions were measured for all participants at both time points, and participants were randomly allocated to friend response condition.

3.2.2.3 *Materials*

Scenario. A scenario describing a threatening situation was presented to participants in two parts (see Appendix B). Part 1 described the situation and part 2 introduced and described the response of a friend to this situation. The scenario outlined an objective interpersonal threat, whereby the participant was asked to imagine walking along a dark street and being confronted by a person threatening

them with a weapon and demanding money. In part 2 of the scenario the presence and observable response of a friend to the situation was described. This was varied between groups. The high fear response contained descriptions of physical expressions, verbalisations and behaviour reflecting fear and the low fear response described calm, neutral expressions and behaviours (see Appendix B).

Questionnaire. Outcome measures (self-reported emotions and appraisals) were obtained after part 1 and part 2 of the scenario for all participants. Trust in the friend was measured as a continuous variable using self-report items taken from a list of trust-based adjectives reported by Cottrell et al. (2007). Reliabilities were acceptable for threat items (the situation is- funny (reverse coded), dangerous, threatening, unsafe) at time 1 (Cronbach's $\alpha = .70$) and time 2 ($\alpha = .80$), fear items (afraid, fearful, frightened, scared) at time 1 ($\alpha = .95$) and at time 2 ($\alpha = .95$), and for trust items which were only measured at time 2 (my friend's response is- reasonable, sensible, trustworthy) ($\alpha = .70$). Total scores for outcome variables of perceived threat, fear and trust in the friend were calculated by averaging items in each category.

At the beginning of the questionnaire, participants were informed that they would be asked to answer the same questions at various points in the questionnaire and it was important that they looked at these questions with 'fresh eyes' each time. Actual instructions are reproduced below:

In the following study you will be asked to read a scenario in sections. Between each section you will be asked to answer a series of questions as if the situation described was actually happening to you. You will be asked to answer some of the same questions at a number of different points during this study. We are interested in how you respond at each of these points, so please try to answer the

questions with 'fresh eyes' each time. All of your responses are completely anonymous.

Participants' were then presented with part 1 of the scenario and asked to read it and imagine themselves as vividly as possible in the situation. Following this, they were asked to answer part 1 of the questionnaire. This consisted of 24 emotions as well as 12 situation appraisal items. The items pertaining to threat and fear were embedded among filler items. Participants were asked to respond as if they were in the situation described *at this moment*, rating their agreement with each statement on a scale ranging from 1 (*not at all*) to 7 (*very much*). Participants were then presented with part 2 of the scenario. Following this, they were again asked to answer a series of questions still imagining themselves in the situation described. Part 2 of the questionnaire contained the same appraisal and emotion items, as well as the trust items pertaining to the friend's response. After completing these questions, participants were asked to provide basic demographic information.

3.2.2.4 *Procedure*

On arrival at the testing room, written consent was obtained from participants. Following this, they were seated and handed a booklet containing all parts of the scenario and questionnaire. On completion of the study, participants were thanked for their time and provided with written debrief information.

3.2.3 *Results and Discussion*

3.2.3.1 *Manipulation checks*

The scenario effectively elicited fear in participants (M = 6.41, SD = .98) and there were no significant differences between the low and high fear friend response conditions at time 1, t (84) = -.51, ns. The manipulation of friend response was also

effective, with participants rating the friend who expressed high fear as more fearful (M = 6.50, SD = .74) than the friend expressing low fear (M = 2.41, SD = 1.66), t (84) = -14.63, p<.001.

3.2.3.2 *Main analyses*

3.2.3.2.1 *Social emotional influence*

Two 2 (time: alone, with friend) by 2 (friend response: high fear, low fear) mixed ANOVA's were performed to test hypothesis 1. Descriptive statistics for the following analyses are presented in Table 3.1.

There were significant main effects of time on reported fear and threat. Fear was higher when alone than when the friend and their response were introduced (M = 6.41 vs M = 5.85), F (1, 84) = 37.18, p <.001, partial-η^2 = .31. Similarly, perceived threat was higher when alone than when with the friend (M = 6.26 vs M = 5.99), F (1, 84) = 10.84, p <.001, partial-η^2 = .11.

The above main effects were qualified by significant time by friend response condition interactions on both reported fear F (1, 84) = 6.65, p =.01, partial-η^2 = .07; and threat F (1, 84) = 14.69, p <.001, partial-η^2 = .15. Participant fear decreased from when alone at time 1, when a less fearful friend was introduced at time 2 (M = 6.35 vs M = 5.57), F (1, 84) = 38.53, p <.001, partial-η^2 = .31. Interestingly, when the friend was highly fearful, fear didn't increase but *also* decreased from time 1 to time 2 (M = 6.46 vs M = 6.14), F (1, 84) = 6.05, p = .02, partial-η^2 = .07. While this difference was significant, examination of the means shows that fear was still higher at time 2 when with a highly fearful compared to less fearful friend (M = 6.14 vs M = 5.57), and this difference was significant, F (1, 84) = 4.94, p = .03, partial-η^2 = .06. However, this finding does lend support to the argument that affiliation with others in a similar threatening situation can reduce negative affect (Kulik & Mahler, 2000).

When with a less fearful friend, participant threat decreased from when alone at time 1, to when the friend was introduced at time 2 (M = 6.19 vs M = 5.63), F (1, 84) = 25.98, p <.001, partial-η^2 = .24. However, rather than increasing, threat remained stable from when alone at time 1 to when a highly fearful friend was introduced at time 2 (M = 6.33 vs M = 6.37), F (1, 84) = .14, ns.

Table 3.1. *Means (and standard deviations) for perceived threat and reported fear as a function of time and friend's response.*

Time	Friend's Response	Perceived Threat	Reported Fear
Time 1 (alone)	High fear	6.33 (0.93)	6.46 (1.12)
	Low fear	6.19 (0.96)	6.35 (0.84)
	Total	6.26 (0.94)	6.41 (0.98)
Time 2	High fear	6.37 (1.04)	6.14 (1.19)
	Low fear	5.63 (1.19)	5.57 (1.21)
	Total	5.99 (1.17)	5.85 (1.23)

The above findings provide support for the social appraisal model: that the emotions exhibited by a friend would have differential effects on participant emotional responses in a threatening situation. An emotion assimilation effect was observed, with fear and threat decreasing when with a friend expressing low fear. While this finding is opposite to the emotion contrast effect found in Study 1 in this thesis, it is still consistent with the proposal that one outcome of affiliation under threat is a reduction in negative affect. Fear (and threat) did not increase when with a highly fearful friend, indicating that assimilation only occurred for low fear

responses. There was also a small but significant decrease in fear in this condition, thus the presence of the fearful friend may have been associated with a general reduction in negative affect- again, consistent with the interview data from Study 1 suggesting that people often preferred to be with others for comfort and reassurance. However, there are other possible explanations for the finding of no assimilation when the friend was highly fearful. First, this could be due to a ceiling effect given threat and fear scores were above 6 on the 7-point scale, thus there could be no room for scores to increase- an issue that will be addressed in study 2b. Alternatively, the response of a fearful friend may have confirmed participant's own responses. As discussed in Study 1, confirmation may be a means by which social emotional influence is exerted. That is, the emotional response of another person may be interpreted as a confirmation of one's own response to the situation.

Prior to testing hypothesis 2, change scores for threat and fear were calculated by subtracting scores at time 1 from scores at time 2. These change scores were used in all of the following analyses[6].

A series of regressions (Baron & Kenny, 1986) were performed to test hypothesis 2, that perceived threat would mediate the relationship between friend response condition and participants reduction in fear from time 1 to time 2.

Simple regressions showed that the response of the friend was a significant predictor of fear change, $\beta = .27$, explaining 7.3% of the variance, F (1,84) = 6.65, p=.01, and of threat change, $\beta = .39$, explaining 14.9% of the variance, F (1, 84) = 14.69, p <.001. Both friend response and perceived threat were included in the third regression, and together explained 25.8% of the variance in fear change, F (2, 83) = 14.46, p<.001. While perceived threat alone was a significant predictor of fear change ($\beta = .47$, p<.001), friend response no longer was ($\beta = .09$, ns). Thus, after

[6] All changes reported are reductions. Although there was no overall difference in threat when in the presence of a highly fearful friend, when changes *were* observed they represented reductions.

controlling for the effects of perceived threat, the relationship between friend response and decrease in fear was reduced, indicating mediation. A bootstrapping test (Preacher & Hayes, 2004) of the indirect effect of friend response on fear reduction via threat reduction was significant, $z = 2.96$, $p < .01$. Thus, the observed emotional response of another person impacted on participants' emotional responses through affecting the intensity of situational threat – consistent with the social appraisal approach (Manstead & Fischer, 2001).

3.2.3.2.2 *Moderating effects of trust*

Having established the occurrence of social appraisal, the next aim was to examine the possible role trust might play in this process. Because the trust variable was not manipulated in this study, before examining the potential effects of trust on social appraisal, a t-test was performed to test the effects of participant response condition on reported trust in the friend's response. There was a significant main effect of friend response on trust in that response, $t(84) = -2.68$, $p = .009$. Participants reported significantly less trust in the response of friends expressing low fear ($M = 3.32$, $SD = 1.81$) compared with those expressing high fear ($M = 4.33$, $SD = 1.69$). Because the situation in this study was designed to be threatening, presumably a low fear response from the friend would be seen to be inconsistent with the situation, possibly explaining this effect. While this result shows trust in the response of the friend was at least partly influenced by the nature of that response (low or high fear), the extent to which the response was trusted could also have impacted on its subsequent influence.

Because the overall relationship between friend response and fear reduction was found to be mediated by perceived threat, to test hypothesis 3, the possible moderating effects of trust on each path in this mediation were examined. The three

points in the process of social emotional influence at which trust could exert an effect are outlined in Figure 3.1. Trust could impact on the relationship between friend response and fear change (Path A), on the relationship between friend response and threat perception (Path B) and on the positive relationship between perceived threat and fear (Path C).

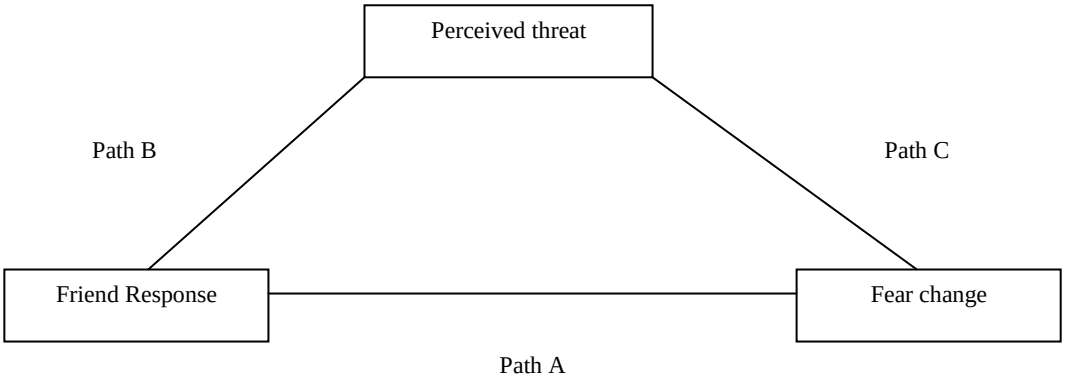

Figure 3.1. Mediating effects of perceived threat on the relationship between friend response and fear change.

Prior to analysing the data, in line with Aiken and West (1993) threat change and trust scores were centred by subtracting the group mean from each score. The centred scores were then used in all following analyses. In order to test the moderating effects of trust, hierarchical regressions were performed for each path, with main effects entered in the first step and the interaction between them in the second step. Results for all analyses are presented in Table 3.2.[7]

[7] A hierarchical regression with all main effects in the first step, all two-way interactions in the second step and the three-way interaction in the third step was not significant and is therefore not reported here.

Table 3.2. *Summary of results from hierarchical regression analyses of the moderating effects of trust on each path of the mediated relationship between friend response and fear change*

Path A (fear change as outcome)				*Path B (perceived threat as outcome)*				*Path C (fear change as outcome)*			
Variable	*β*	*SE*	*ΔR²*	*Variable*	*β*	*SE*	*ΔR²*	*Variable*	*β*	*SE*	*ΔR²*
Step 1			.07*	Step 1			.15**	Step 1			.25**
Friend response	.27*	.19		Friend response	.40**	.17		Threat	.50**	.10	
Trust	-.01	.05		Trust	-.06	.05		Trust	.04	.05	
Step 2			.08**	Step 2			<.01	Step 2			.08**
Friend response x trust	.29**	.05		Friend response x trust	.06	.05		Threat x trust	.29**	.05	

*p<.05,**p<.01

Results from the following analyses provided support for hypothesis 3, that low trust would be associated with reduced social emotional influence. The first regression (Path A) investigated whether trust in the friend moderated the overall effect of friend response on fear reduction. If trust acted in a similar way to identity (as discussed previously) the effects of social emotional influence should have become weaker as level of trust decreased. The total amount of variance in fear reduction explained by friend response and trust was 7.3%, with trust not independently predicting fear reduction. The interaction between friend response and trust explained an additional 8.1% of the variance, *F Change* (1, 82) = 7.81, *p* =.006, indicating the extent to which the emotional response of the friend was trusted changed its effect. As expected, under conditions of low trust, the effect of friend response was weaker.

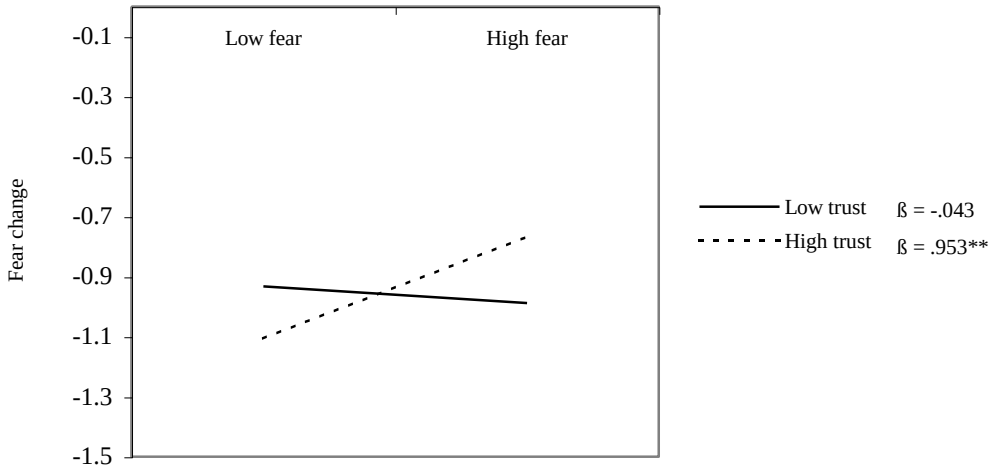

Figure 3.2. Regression slopes for the moderating effects of trust on the relationship between friend response and fear decrease, *p<.05,**p<.01.

Examination of the regression slopes in Figure 3.2 show that under conditions of low trust the positive relationship between the fear expressed by the friend and the

decrease in participant fear was weaker than under conditions of high trust. This is consistent with the argument that less trusted responses exert less effect.

For Path B, in line with appraisal theories of emotion, and with evidence that threat mediates the relationship between friend response and participant fear, it was expected that the less the friend's response was trusted, the less effect that response would have on perceived threat. Results showed that the total amount of variance in perceived threat explained by friend response and trust was 13.2%. However, the interaction between friend response and trust did not explain significant additional variance. Therefore, the response of the friend affected participant threat appraisals regardless of how trusted it was. While trust does affect the process of social appraisal, in this case it is not through influencing threat appraisals.

For Path C (the relationship between perceived threat and fear reduction), the total variance in fear reduction explained by perceived threat and trust was 23.5%, with threat reduction but not trust predicting fear reduction in the first step. The interaction between threat reduction and trust explained an additional 8.4% of the variance in fear reduction, $F\ change\ (1, 82) = 10.45$, $p = .002$. Figure 3.3 illustrates that the positive relationship between threat reduction and fear reduction was weaker under conditions of low trust than under conditions of high trust. Therefore, it seems that the process of cognitive appraisal (whereby appraisals lead to emotions) is compromised when trust is low. This means that while the friend's response affected participant's appraisals of the situation whether they were trusted or not (Path B), this did not follow through to influencing their actual response. This could reflect uncertainty on the part of participants regarding the validity of the friend's response- while their appraisal of threat reduced in the presence of a less fearful friend, the validity of this may have been questioned if the response was less trusted. Thus actual emotional responses were not affected. This would be reasonable in an

objectively dangerous situation where feeling less fearful could compromise safety, as the experience of fear is associated with a tendency to flee (e.g., Kreibig et al., 2007; Reber & Reber, 2001), which would be adaptive.

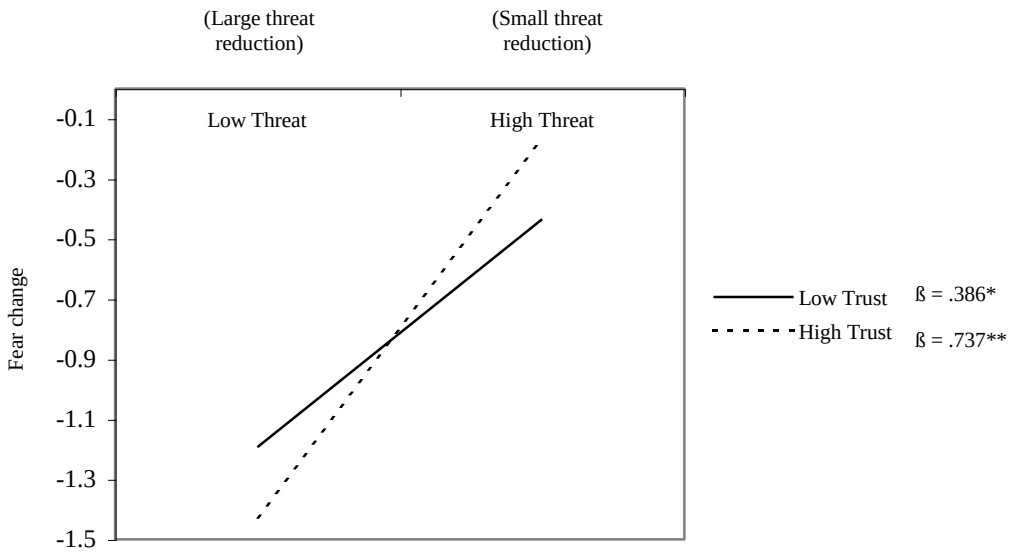

Figure 3.3. Regression slopes for moderating effects of trust on the relationship between threat reduction and fear reduction, *p<.05,**p<.01.

Taken together, these findings provide evidence that low trust reduces the impact of the emotional response exhibited by a friend in a threatening situation. As trust decreased, the emotion assimilation effect between the friend's fear and participant fear became weaker. Further, as trust decreased the relationship between perceived threat and self-reported fear also became weaker. Overall, these effects suggest that trust is relevant to more than one aspect of social appraisal, and it may strengthen (or weaken) the outcomes of this process.

This study has demonstrated that the emotions of a friend predicted the threat appraisals participants made about a threatening situation, which in turn predicted corresponding changes in their emotional response to that situation. Consistent with the findings from the first study in this thesis, the presence of another person (in this case a friend) reduced participant fear. In the current study, the reduction reflected a

process of emotion assimilation, while in Study 1 it reflected emotion contrast. No clear assimilation (or contrast) effects were observed when the friend expressed a high fear response, though as mentioned previously, there was a tendency for slightly reduced fear with the introduction of the presence of the friend. As mentioned previously, the lack of assimilation effects could be because the presence of a fearful friend provided confirmation of participant's own fear- an explanation that maps onto the interview responses from Study 1. Alternatively, it could signal a measurement issue (a ceiling effect).

When the possible effects of trust on social appraisal were explored, an unexpected, but reasonable finding was that participants made a trust judgement about the emotional response of the other based on the response itself. High fear responses were deemed more trustworthy than low fear responses. It is proposed that in this study the situation provided a salient point of reference against which to evaluate the response exhibited by the friend. An objectively threatening situation would be expected to elicit fear. Presumably because of this, a high fear response was more plausible. This idea is consistent with the definition of social appraisal, whereby the responses of another person are appraised *in addition to* the situation itself (Manstead & Fischer, 2001). This proposition, that the trustworthiness of the response of the friend was evaluated in light of the situation, will be tested further in Study 2b.

More importantly, trust was also found to impact on the process of social appraisal. The influence of the friend's response varied according to the extent to which it was trusted. In addition to previous research showing the identity of the other to be important (e.g., Haslam et al., 2004), the findings here revealed that overall, social emotional influence was weaker when trust in the response of the friend was lower. Furthermore, while it could be expected that level of trust in the

other would directly impact the extent to which the response of the other influenced threat appraisals (that is, the response of the other would exert less influence on participant's threat appraisals the less they were trusted), this was not the case. Rather, trust impacted more directly on whether the friend's response had any effect, or on whether the participant's threat appraisal ultimately influenced their emotional response.

Having low trust in the response of the friend meant the response exerted less influence, thus the friend had less impact overall on their emotional experience (Path A as seen in Figure 1). However, level of trust in the friend's response also changed how perceived threat affected fear (Path C), with the positive relationship between threat change and fear change becoming weaker as trust decreased. Thus the response of the friend exerts influence on appraisals, yet these appraisals are less likely to correspond to behavioural change (in the form of fear reduction) if the friend is less trusted. It is possible that one's appraisals can be regarded as more 'certain' when they are consistent with the response of a trusted friend, increasing the likelihood they will influence fear responses. That is, the friend's response influences one's appraisal of the situation, and the fact that they are trusted verifies the validity of this appraisal. The results from this study demonstrate that in a threatening situation, the response of the friend, and threat appraisals regarding the situation, have less influence on emotions if deemed untrustworthy. Therefore, low trust can exert its influence in more than one way. The primary purpose of Study 2b was to obtain further support for these findings. Further, the possible ceiling effect for fear discussed above, and the role of situational context in informing trust evaluations were also addressed.

3.3 Study 2b

Research into social referencing and emotion conformity suggest that ambiguity and uncertainty are associated with increased referencing behaviour and informational influence (Klinnert et al., 1983; Turner et al., 1987). Under conditions of high ambiguity and/or uncertainty, the emotional response of another person is argued to provide valuable situational information, which leads to increased social referencing, and subsequent emotion influence (Klinnert et al., 1983). If the information provided by the emotional responses of others is more informative in an ambiguous situation, the extent to which the other is trusted may be even more important than usual. In order to examine whether the role of trust is different when ambiguity is higher, the scenario from Study 2a was adapted to create an ambiguous threatening situation.

As it appears that the situational context (objectively threatening) influenced trust evaluations in Study 2a, the use of an ambiguous scenario in Study 2b allowed for the further examination of the role of situational context on trust judgements. In Study 2a it was argued that the situation informed perceptions of the trustworthiness of the friend's response by providing a salient point of reference. By using an ambiguous situation here, there are no salient situation characteristics against which the response of the friend could be judged, thus no effect of response type on how much the friend's response was trusted should be observed.

Furthermore, because an ambiguous situation was used, the response exhibited by the friend could more substantially change participants' interpretation of the situation. Therefore, the friend was described as responding either with fear or amusement, and positive emotions were measured as well as fear. A discussion point raised in Study 2a concerned the direction of effects observed. Namely, all changes in threat and fear were reductions. While this may have reflected a measurement

issue, it also may be indicative of the way social appraisal works in threatening situations (reducing or confirming, but not increasing negative affect). It was anticipated that by increasing the ambiguity of the situation in study 2b, a greater range of appraisal and emotional change could be observed, thus eliminating possible ceiling effects.

3.3.1 *Hypotheses*

1a. If the findings of threat and fear decreasing in Study 2a reflected a ceiling effect, the use of an ambiguous situation should remove this problem. Thus, it was again hypothesised that friend response condition would predict the change in participants reported threat and fear from time 1 to time 2. Specifically, it was expected that emotion assimilation would occur- when the friend's response was amused, threat and fear would decrease from time 1 to time 2. When the friend's response was fearful, threat and fear would increase from time 1 to time 2, or could remain stable (in line with the response of the other proving emotion 'confirmation')

1b. Due to the situation being ambiguous, and the use of an 'amusement' condition, positive emotions were also measured in this study. It was predicted that these would change in the opposite direction to fear, with positive emotions increasing when the friend expressed amusement and decreasing when they expressed fear.

2. Again, it was expected that changes in perceived threat would mediate the relationships between the response of the friend and fear change, and positive emotion change.

3. In line with the findings from Study 2a, it was predicted that level of trust in the friend would moderate the relationship between friend response and emotion change and the relationship between threat change and emotion change, such that under conditions of low trust these relationships would be weaker.

3.3.2 *Method*

3.3.2.1 *Participants*

The scenario and questionnaire were administered to 51 undergraduate student volunteers (30 female) from Flinders University, ranging in age from 18 to 55 years (M = 22.1, SD = 7.0), who obtained course credit for participating.

3.3.2.2 *Design*

A 2 (Time: 1-alone, 2-with friend) by 2 (Friend response: amused, fearful) mixed factorial design scenario study was used to examine social emotional influence in an ambiguous situation. Self-reported appraisals and emotions were measured for all participants at both time points, and participants were randomly allocated to the friend response condition.

3.3.2.3 *Materials*

A scenario describing an ambiguous situation was presented to participants in two parts (see Appendix B). Part 1 described the situation and part 2 introduced and described the response of a friend to this situation. Outcome measures (self-reported emotions and appraisals) were obtained after part 1 and part 2 for all participants. Trust in the friend was measured as a continuous variable using self-report items.

Scenario. The scenario was a variation on the version used in Study 2a, but this time described an ambiguous situation. Participants were asked to imagine themselves walking along a dark street and seeing a person coming towards them. Again, this scenario was in two parts. In part 2 of the scenario the presence and observable response of a friend to the situation was described, which was varied

between groups. The fear response contained descriptions of physical expressions, verbalisations and behaviour reflecting fear and the amused response described expressions, verbalisations and behaviours consistent with amusement (see Appendix B).

Questionnaire. The questionnaire was the same as that used in Study 2a, with the addition of positive emotion items, and a manipulation check for the 'amused' condition (how serious is your friend?). Reliabilities were again acceptable for threat items at time 1 (Cronbach's α = .79) and time 2 (α =.91), fear items at time 1 (α =.98) and at time 2 (α =.97), and for trust items at time 2 (α =.70). Reliabilities for positive items (happy and joyful) were also acceptable at time 1 (α =.84) and time 2 (α =.96). Total scores for outcome variables of perceived threat, fear, positive emotion and trust in the friend and change scores for threat, fear, and positive emotion were calculated using the same methods as study 2a.

3.3.2.4 *Procedure*

The procedure was the same as used in study 2a. On arrival at the testing room, written consent was obtained prior to commencing the study. Following this, participants were seated and handed a booklet containing all parts of the scenario and questionnaire. On completion of the study, participants were thanked for their time and provided with written debrief information.

3.3.3 *Results and Discussion*

3.3.3.1 *Manipulation checks*

The scenario elicited moderate to high levels of fear in participants at time 1 for both friend response conditions (fearful: M = 5.37, SD = 1.46; amused: M = 5.91,

SD = 1.46), with no significant differences between them, *t* (49) = 1.33, ns. Furthermore, positive emotion was correspondingly low in both groups at time 1 (fearful: *M* = 1.46, *SD* = .76; amused: *M* = 1.18, *SD* = .35), suggesting that the ambiguous scenario was perceived as relatively threatening. The manipulation of friend response was effective, *t* (49) = -13.21, *p*<.001, with participants rating the friend who expressed fear as significantly more fearful (*M* = 6.12, *SD* = .86) than the friend who expressed amusement (*M* = 2.00, *SD* = 1.32). The fearful friend was also rated as significantly more serious (*M* = 6.15, *SD* = .88) than the friend who expressed amusement (*M* = 1.60, *SD* = .76), *t* (49) = -19.70, *p* <.001.

3.3.3.2 *Main analyses*

Two 2 (alone, with friend) by 2 (Friend response: amused, fearful) mixed ANOVA's were performed to test hypothesis 1a- that perceived threat and fear reported by participants would change as a function of the response of the friend. Descriptive statistics are presented in Table 3.3. For threat, there was a significant main effect of time *F* (1, 49) = 33.55, *p* < .001, partial-η^2 = .41, with threat decreasing overall from time 1 to time 2 (*M* = 5.74 vs *M* = 4.65). This main effect was qualified by a significant time by response condition interaction, *F* (1, 49) = 33.09, *p* < .001, partial-η^2 = .40. Simple effects analyses showed that participant's threat only decreased when in the presence of an amused friend (Time 1: *M* = 6.07; Time 2: *M* = 3.85), *F* (1, 49) = 65.36, *p* < .001, partial-η^2 = .57, and not when with a fearful friend (Time 1: *M* = 5.42; Time 2: *M* = 5.42).

There was also a significant main effect of time on fear responses, *F* (1, 49) = 48.23, *p* < .001, partial-η^2 = .50, with fear decreasing overall from time 1 to time 2 (*M* = 5.64 vs *M* = 4.21). This main effect was again qualified by a significant time by response condition interaction, *F* (1, 49) = 17.02, *p* < .001, partial-η^2 = .26. A

simple effects analysis showed that participant fear reduced more from time 1 to time 2 when in the presence of an amused friend (Time 1: M = 5.91; Time 2: M = 3.62) compared to a fearful friend (Time 1: M = 5.37; Time 2: M = 4.78), F (1, 49) = 5.57, p =.02, partial-η^2 = .10.

Table 3.3. *Means (and standard deviations) for perceived threat, reported fear and positive emotion as a function of time and friend's response.*

Time	Friend's Response	Perceived Threat	Reported Fear	Positive Emotion
Time 1 (alone)	Fearful	5.42 (1.21)	5.37 (1.46)	1.46 (0.76)
	Amused	6.07 (0.88)	5.91 (1.46)	1.18 (0.35)
	Total	5.74 (1.10)	5.64 (1.47)	1.32 (0.60)
Time 2	Fearful	5.42 (1.33)	4.78 (1.50)	1.32 (0.61)
	Amused	3.85 (1.74)	3.62 (2.01)	3.28 (1.71)
	Total	4.65 (1.72)	4.21 (1.85)	2.30 (1.61)

Taken together, these findings support hypothesis 1a and replicate the emotion assimilation effect seen in study 2a. Furthermore, fear reduction in the presence of an amused friend, but not fear increase in the presence of a fearful friend was observed again. With the methodological changes in this study, the possibility of a ceiling effect explaining the lack of assimilation of high fear responses is less likely.

To test hypothesis 1b, a repeated measures ANOVA was performed with positive emotions as the outcome. Descriptive statistics are presented above in Table 3.3. Results showed a main effect of time for positive emotion, F (1, 48) = 32.35, p

<.001, partial-η^2 = .40. Overall, positive emotion increased from time 1 to time 2 (*M* = 1.32 vs *M* = 2.30). This main effect was again qualified by a significant interaction between time and friend response, *F* (1, 48) = 42.25, *p* <.001, partial-η^2 = .47. Simple effects analyses showed that positive emotion only increased significantly from time 1 to time 2 when the friend expressed amusement (*M* = 1.18 vs *M* = 3.28), *F* (1, 48) = 74.26, *p* <.001, partial-η^2 = .61, not when they expressed fear (time 1: *M* = 1.46; time 2: *M* = 1.32).

Therefore, hypothesis 1b was only partially supported, with the response of the friend only having an effect on participants' positive emotions when the response was amused. Positive emotions did not decrease when in the presence of a fearful friend, as would be expected if emotion assimilation were occurring. With positive emotion scores at time 1 only just above the lowest scale score of '1', this probably reflects a floor effect. Alternatively, as with fear and threat responses, it may be that more highly fearful friends simply confirm rather than change participants' own feelings about what's happening.

3.3.3.2.1 *Social emotional influence*

As shown above, threat and fear again both decreased, and positive emotions increased in the presence of an amused friend. No increases in threat or fear or decreases in positive emotions were observed when with a fearful friend. Therefore, as with study 2a, any effects discussed below reflect the magnitude of change (decrease for negative and increase for positive emotions) rather than direction. Again, in line with the method of Baron and Kenny (1986), a series of regression analyses were performed to test hypothesis 1: whether the change in threat from time 1 to time 2 mediated the relationship between friend response and participants'

decrease in fear from time 1 to time 2, and increase in positive emotion from time 1 to time 2. Results are presented in Table 3.4.

Table 3.4 *Tests of mediation (and associated β values) of the relationship between friend response and participant's change in emotion by perceived threat.*

mediation chains (IV→ MV→ DV)	IV→MV	MV→DV	IV→ DV	IV→DV/MV	z
Other Response→ Threat→ Fear	.64**	.83**	.51**	-.03	4.78**
Other Response→ Threat→ Positive emotion	.64**	-.85**	-.68**	-.25*	-4.54**

Note. IV = independent variable; MV = mediator variable; DV = dependant variable; IV→ DV/MV = the relationship between the IV and DV when the effect of the MV is controlled.
*p <.05, **p < .01.

For both fear and positive emotions, the first three requirements of mediation were met. Bootstrapping tests (Preacher & Hayes, 2004) showed the indirect effect of the friend's response on participants' emotion, through perceived threat, was significant when the outcome was fear (z = 4.78, p <.001) and when it was positive emotion (z = -4.54, p <.001). After controlling for perceived threat, the proportion of variance in self-reported fear scores explained by the friend's emotional response reduced from 25.8%, F (1,49) = 17.02, p<.001, to .1%, thus became non-significant, *F change* (1, 48) = .11, p = .75. For positive emotions the reduction was from 46.8%, F (1,48) = 42.25, p<.001, to 3.7%, *F change* (1,47) = 7.07, p = .01.

Thus, after controlling for the effects of threat reduction, the relationship between friend response and the decrease in fear was reduced to a non-significant

level, indicating mediation. After controlling for the effects of perceived threat, friend response was still a significant predictor of positive emotion change, however its effect was greatly reduced indicating partial mediation. Overall, the emotional response to the situation exhibited by the friend, affected participants' negative and positive emotional responses by changing their appraisals of threat regarding the situation.

3.3.3.2.2 *Trust in friend response*

In light of findings from Study 2a, the effects of friend response condition on reported trust in the friend were again examined. In contrast to study 2a there was no significant main effect of friend response on level of trust in the friend, t (49) = -.88, ns. As discussed in the introduction to this study, the use of an ambiguous situation means a fearful or amused response from the friend could have been perceived as reasonable.

3.3.3.2.3 *Moderating effects of trust*

Next, the potential impact of trust on social emotional influence was examined. The same process as was used for the previous study was used here, with the potential effects of trust at each point of the mediation (see Figure 3.4) tested. The procedure was repeated for Path A and Path C for positive emotion.

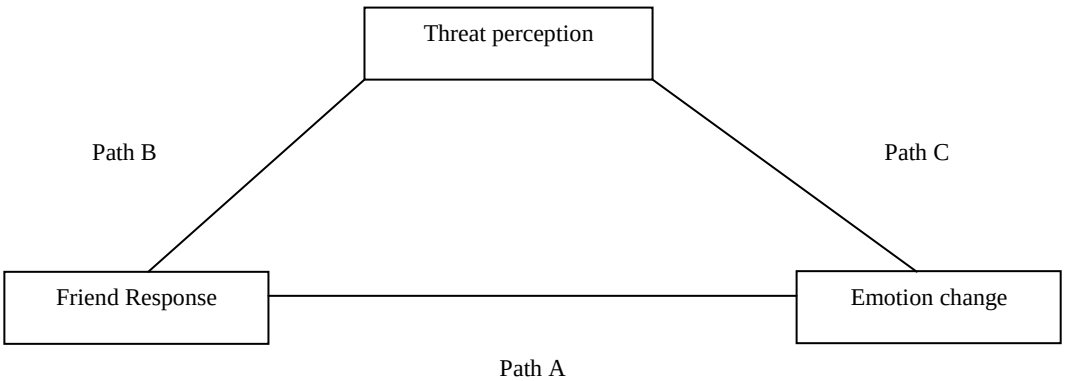

Figure 3.4. Mediating effects of threat perception on the relationship between friend response and emotion change.

A series of hierarchical regressions were performed to test the effects of trust on each path in the mediation model, for both fear and positive emotions. In all analyses, the main effects were entered in the first step and their interaction in the second step. Results are presented in Table 3.5.

Table 3.5. Summary of results from hierarchical regression analyses of the moderating effects of trust on each path of the mediated relationship between friend response and emotion change

Path A (fear decrease as outcome)				*Path B (perceived threat as outcome)*				*Path C (fear decrease as outcome)*			
Variable	*β*	*SE*	*ΔR²*	*Variable*	*β*	*SE*	*ΔR²*	*Variable*	*β*	*SE*	*ΔR²*
Step 1			.38**	Step 1			.47**	Step 1			.71**
Friend response	.55**	.39		Friend response	.67**	.37		Threat	.81**	.08	
Trust	-.35**	.12		Trust	-.27*	.12		Trust	-.14†	.09	
Step 2			.05*	Step 2			.03†	Step 2			.01
Friend response x trust	.67*	.25		Friend response x trust	.55†	.24		Threat x trust	.07	.05	

Path A (positive emotion increase as outcome)				*Path C (positive emotion increase as outcome)*			
Variable	*β*	*SE*	*ΔR²*	*Variable*	*β*	*SE*	*ΔR²*
Step 1			.58**	Step 1			.72**
Friend response	-.73**	.31		Threat	-.83**	.07	
Trust	.33**	.1		Trust	.09	.08	
Step 2			.03*	Step 2			.01
Friend response x trust	-.56*	.20		Threat x trust	-.11	.05	

†p<.1, *p < .05, **p < .01

Fear as outcome

Regarding the effects of trust on Path A, results showed that the total amount of variance in fear reduction explained by friend response and trust was 37.9%. Friend response and trust both significantly predicted the level of decrease, *F* (2, 48) = 14.65, p<.001. The interaction between friend response and trust explained an additional 4.8% of the variance, *F change* (1, 47) = 3.94, p =.05.

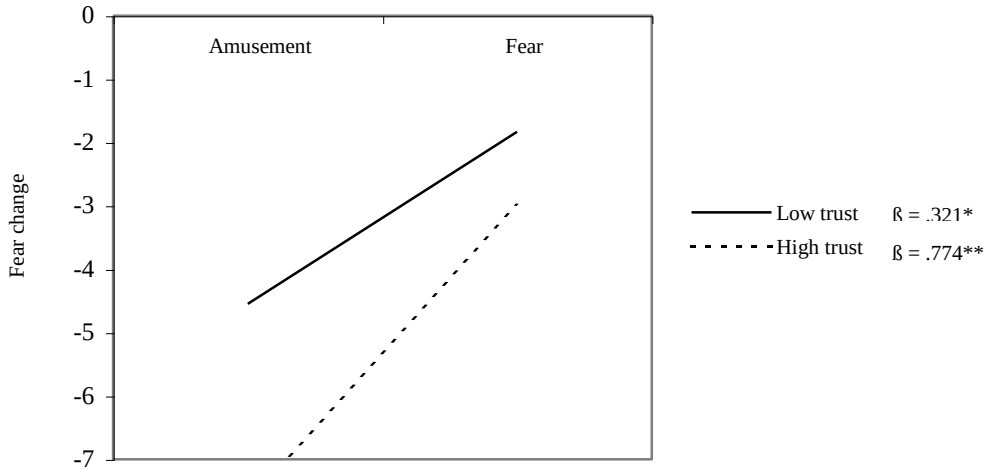

Figure 3.5. Regression slopes for the moderating effects of trust on Path A for fear change, *p<.05,**p<.01.

The regression slopes in Figure 3.5 show that the positive relationship between the friend's emotional response and participant fear was more pronounced under conditions of high compared to low trust, consistent with the findings from Study 2a.

Results for the effects of trust on Path B showed that the total amount of variance in the level of threat reduction explained by friend response was 47.3%, *F* (2, 48) = 21.52, p<.001. The interaction between friend response and trust explained an additional 3.3% of the variance, and this change was marginally significant, F *change* (1,47) = 3.12, p = .08.

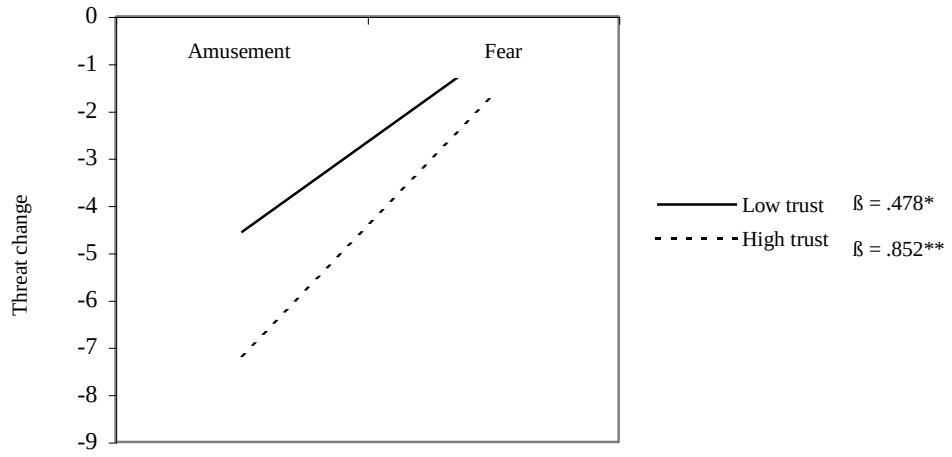

Figure 3.6. Regression slopes for the moderating effects of trust on Path B, *p<.05,**p<.01.

Examination of the regression slopes in Figure 3.6 indicates that when the friend expressed fear, threat decreased very little regardless of level of trust in the friend. When the friend expressed amusement, threat decreased more under conditions of high versus low trust. Overall, this finding combined with that regarding Path A, highlights that trust may be less important when evaluating the high fear response of a friend. When the response exhibited by a friend was amused, the more trusted the friend was the more influence their response exerted on appraisals and ultimately, fear.

Trust did not significantly moderate the relationship between perceived threat and the decrease in fear (Path C). In the first step, the total variance in fear reduction explained by threat reduction and trust was 70.9%, F (2, 48) = 58.47, p<.001. In contrast to the findings from Study 2a, the interaction between threat reduction and trust did not explain significant additional variance in fear reduction (.5%). That is, reduced threat appraisals led to reductions in fear and increases in positive emotions regardless of how trusted the friend's response was. The finding of an effect of trust on Path B (discussed above) may explain the absence of an effect of trust on path C.

That is, if trust has already been accounted for in the threat appraisals, it does not necessarily need to be accounted for in the effects of the appraisal on emotional responses.

Positive emotion as outcome

For Path A, results showed that the total amount of variance in the increase in positive emotions explained by friend response and trust was 57.6%, F (2, 47) = 31.99, p<.001. The interaction between friend response and trust explained an additional 3.4% of the variance, *F change* (1, 46) = 3.98, p =.05.

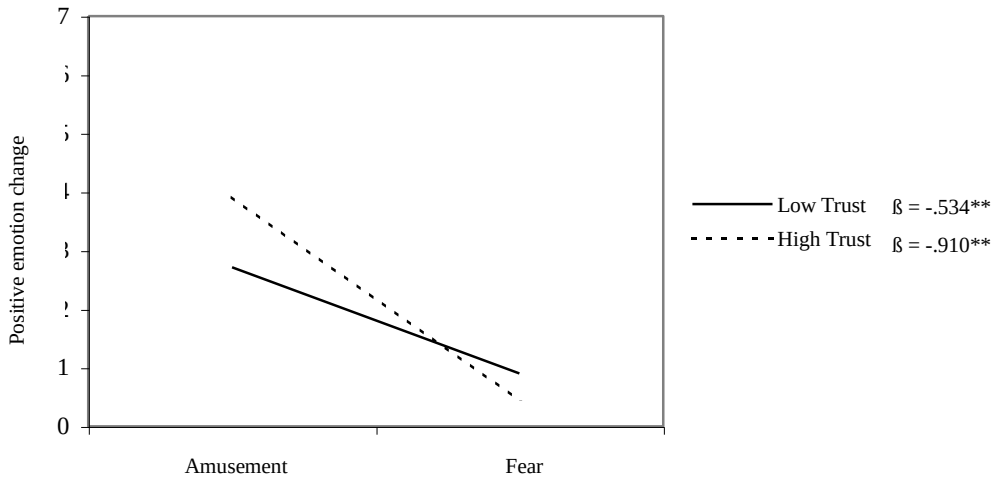

Figure 3.7. Regression slopes for the moderating effects of trust on Path B for positive emotion change, *p<.05,**p<.01.

The regression slopes in Figure 3.7 show that when the friend expressed fear, positive emotions did not change much regardless of level of trust in the friend. However, when the friend expressed amusement, the presence of a more trusted friend was associated with a larger increase in positive emotions than when the friend was less trusted.

Trust did not moderate Path C. In the first step, the total variance explained by threat reduction and trust was 72.1%, with threat reduction but not trust predicting

positive emotion increase, F (2, 47) = 60.78, p<.001. The interaction between threat reduction and trust did not explain significant additional variance in positive emotion increase (1.2%).

As with study 2a, findings again provide support for the occurrence of social appraisal in relation to perceptions of and responses to threat. The emotional response exhibited by the friend differentially influenced participant threat appraisals and emotional responses. As found in study 2a, the process of social emotional influence includes the emotional responses of the friend influencing participant threat appraisals, which in turn determine the intensity of fear and positive emotions. Interestingly, again, only decreases were observed for threat and fear emotions and additionally, there were only increases for positive emotions.

In an ambiguous situation, the type of emotion exhibited by the friend did not affect trust. This is in line with the proposed explanation for the effects of friend response on trust observed in study 2a: that they were evaluated in light of the situational context. Again, social appraisal effects overall were weaker under conditions of low trust (Path A), though the moderating effects of trust acted differently than was observed in study 2a. In the current study trust interacted with friend response on perceived threat (Path B). That is, as trust decreased, so too did the effect of the friend's expressed emotion on participant's threat perceptions. In the case of an ambiguous situation, the extent to which the other was trusted determined whether their emotional response influenced appraisals about how threatening the situation was, which represents the path of social appraisal as explained by Manstead and Fischer (2001).

While the response of the friend did not predict trust in this study, it was independently related to perceived threat and emotion responses. Trust in the response of the friend was negatively related to participant's perceived threat and

fear reduction, and positively related to positive emotion increase, indicating that higher trust was associated with less threat and fear and more positive emotions. This was only the case in the presence of a friend expressing amusement (a similar condition to 'low fear' in Study 2a). Because the trust variable was not manipulated in this study, it is not clear whether increased trust led to the changes in appraisal and emotion or was experienced as a result of them. This issue will be addressed in study 3a.

3.4 General discussion

Together these studies provide sound evidence for a process of social emotional influence occurring in line with the social appraisal perspective (Other emotion > own appraisal > own emotion). Overall, the effect of the response of the friend was limited to reducing levels of threat and fear, and increasing positive emotion. Even in an ambiguous situation, where arguably, there could be more 'room' for increases in threat and fear, this same pattern was observed. However, as threat and fear were already high in studies 2a and 2b, it may be that a high fear response from a friend simply served to confirm the participant's initial response rather than actively increase it, explaining the lack of fear increases observed.

The above observation regarding the direction of effects poses an interesting question: do the outcomes of social appraisals in relation to threat always have the outcome of improving emotional state? Previous research has shown the mere presence of another person in a situation can be enough to reduce negative emotions (e.g., Jakobs et al., 1997; Jakobs et al., 2001), and these findings may reflect this. However, the studies presented so far in this thesis show that people take into account *how* the other person responds, possibly in order to diminish their fear, with

emotion assimilation with a less fearful or amused friend observed in Studies 2a and 2b and emotional contrast from an anxious stranger found in Study 1.

There is evidence that people engage in social comparisons in such a way as to enhance perceptions of the self (Hoorens, 2006). If one of the mechanisms underlying social appraisal involves emotional comparison (e.g., Gump & Kulik, 1997), then it could be expected that these comparisons would be biased to having a beneficial effect for the self (Suls et al., 2002). However, in Studies 2a and 2b, the presence of a fearful friend was associated with no change in fear. If improving emotional state was the goal of comparison, emotion contrast as observed in Study 1 (which would reduce participant fear), should have been observed here. Furthermore, while it may be more pleasant to feel less fearful, it may not be more adaptive (Roseman et al., 1996). In an evaluative threat situation (Study 1), less fear *would* be adaptive, as it could improve performance (Pribyl, Keaten, & Sakamoto, 2001), thus in order to reduce fear, people may go against the emotions of others. In a physical threat situation, the outcome of less fear could actually be more risk (as seen in the anecdote at the beginning of this thesis). Thus going against fear responses from others would be counter-productive in the long term, but could provide more immediate benefits such as calming a person enough to improve coping (Gross, 2002). Taken together, the answer to the question posed above is that social appraisals may not always *improve* emotional state; however there is reasonable support for the argument that they shouldn't *worsen* it.

Studies 2a and 2b also demonstrate the importance of trust in threatening situations. More specifically, trust can affect (Studies 2a and 2b) and be affected by (Study 2a) the process of social appraisal. The trustworthiness of the response may be evaluated in light of the situational context. As seen in study 2a, a high fear response from a friend was perceived as more trustworthy overall than a low fear

response. In an objectively threatening situation, it may have simply 'made more sense', whereas there was no point of reference to make this type of judgment in an ambiguous situation (Study 2b). While one may perceive an ambiguous situation as threatening one cannot truly *know* whether one's interpretation is more or less correct than anyone else's, explaining why trust was not influenced by the response of the other in study 2b.

In terms of the effects of trust, evidence was found that it could impact on each path in the process of social appraisal. Trust could reduce the overall impact of the emotional response of a friend on one's own emotional response to a threatening situation (Studies 2a and 2b). Trust could reduce the extent to which the friend's response informed participant appraisals of threat, with less influence under conditions of low trust (Study 2b). In this case, one's own interpretation of the highly threatening situation overrode the information provided by the amused response of the friend. Finally, it could reduce the extent to which the appraisal of threat actually resulted in associated emotional outcomes (Study 2a). That is, the appraisal of threat was reduced by the low fear response of the friend, but this didn't follow through to a reduction in actual fear. The impact of trust on the direct effect of the friend's response on participant emotions was observed in both studies, suggesting its importance. Trust was then found to also impact on *either* (but not both) of the appraisal paths of influence in the social appraisal model. Taken together this suggests that the emotional outcome of social appraisal involves a direct effect of the friend's emotion *as well as* an effect through appraisals. Trust then exerts its impact on both of these.

Studies 2a and 2b provide evidence that decreases in fear reflect emotion assimilation whereby the presence of a less fearful or amused friend lessens fear or increases positive emotions. These effects are reduced as trust in the response of the

friend decreases. These findings have implications for research in the area of threat and affiliation as well as social emotional influence more generally. While increased fear as a result of affiliation under threat has been demonstrated previously (Gump & Kulik, 1997), more research has either demonstrated or assumed reduced fear and anxiety (e.g., Kulik, Moore, & Mahler, 1993; Li et al., 2008). However, the mechanisms proposed to underlie this have not been adequately specified or tested, and much research still neglects the emotional response exhibited by the affiliate, with the assumption that they would be anxious (e.g., a 'similarly threatened' other). The current findings indicate that the presence of a similarly anxious affiliate may have *no* positive impact on emotions. Furthermore, *who* we wish to affiliate with is more important than just a preference regarding their identity- the extent to which we can trust the responses of the person we are with is critically important, with low trust probably negating the important (and desired) positive effects of their presence – a reduction in fear. Why low trust produces this outcome is a question that will be addressed in Study 3b.

An important limitation of the methodology used in Studies 2a and 2b is the measurement of trust. In these studies it was measured as an outcome variable, therefore its treatment as a potential predictor is somewhat problematic. Furthermore, as discussed in Chapter 2, in Western societies trust tends to be the default position within interactions, with a reason or evidence necessary to elicit low trust or distrust. In the case of these studies, the type of response exhibited by the friend could have provided this evidence- with a less fearful response both inconsistent with the situation and with one's own response. The effects of low trust observed in Study 2a are also tied up with the effect of the friend's response *on* perceptions of trust. That is, the less fearful response was less trusted overall, but it was also this response that had the most influence on participant fear. It is therefore

important to disentangle trust as an outcome versus as a predictor. Because the other was a friend, it is probable that there was a restricted range of trust ratings with no 'true' low trust. It may be that the effects of 'true' low trust are different to the effects of reduced trust observed here. Thus, it will be necessary to obtain additional support for the findings observed here using a manipulation of trust.

In the next chapter, the effects of social appraisal in another physically threatening situation will be examined in two studies. The first of these (Study 3a) will manipulate trust in the emotional response of a friend in order to further test the validity of the findings observed in studies 2a and 2b. The second (Study 3b) explores *how* trust impacts on the process of social appraisal, by investigating participant thoughts regarding the evaluation of the friend and their response.

CHAPTER 4. THE EFFECTS OF TRUST ON SOCIAL APPRAISAL IN A REALISTIC THREAT SITUATION

4.1 Introduction

Studies 2a and 2b provided further support for the social appraisal model of social emotional influence (Manstead & Fischer, 2001), and showed its effects in a physically threatening situation. The emotional response exhibited by a friend differentially affected participants' appraisals of and fear responses to the situation. Emotion assimilation effects were observed, with low fear (or amused) responses from the friend resulting in a reduction in fear for participants. These findings were largely consistent with research examining stress and affiliation (e.g., Gump & Kulik, 1997; Haslam et al., 2004). No corresponding assimilation effect was found when the friend exhibited high levels of fear. High fear was reported by participants at baseline, and there was no assimilation to a highly fearful friend, even when controlling for a possible ceiling effect for fear responses. This suggests that the presence of a highly fearful friend may simply have confirmed the fear participants were already feeling rather than increasing it. These findings were congruent with the interview responses of participants in Study 1: where participants expressed a wish to be with another person when facing threat, the provision of comfort and confirmation of experience were the central reasons.

The results from participant interviews in Study 1 indicated that trust in the response exhibited by another person with whom one is experiencing a situation could have a bearing on the influence exerted by that other. Participants' desire to have another person present in a threatening situation largely depended on who that person was, and the possible outcome of their presence. Strangers were clearly preferred less than friends, and this reflected the extent to which they could be

trusted, which was less than a friend would be. Importantly, participants believed that their experience could be affected in different ways by the other depending on who they were, through how much they were trusted. The presence of a stranger was expected to affect their experience negatively through distracting them or engaging them in competitive behaviour, whereas the presence of a friend would have a positive effect by providing confirmatory information and/or comfort about what was happening. These different preferences were argued to reflect differences in trust in the other person. The finding of differences between friends and strangers is not novel and there is a large body of research showing that the identity of interaction partners (such as whether they are a friend or stranger) can impact on interaction outcomes (e.g.,Buunk, Collins, Taylor, van Yperen, & Dakof, 1990; Collins, 2000; Hess et al., 1995; Jakobs et al., 2001; Smoski & Bachorowski, 2003; Wagner & Smith, 1991). The general consensus regarding the effect of identity on social emotional influence is that relatively less influence occurs with strangers (e.g., Hess et al., 1995), out-groups (e.g., Platow et al., 2005) and non-experts (e.g., Randall Crosby et al., 2008).

Taken together, it was proposed that previously observed differences resulting from the identity of the other could reflect differences in the extent to which different identities are trusted. The implications of this were that differences in trust could have the same associated outcomes: high trust leading to influence (emotion assimilation), and low trust leading to a reduced effect. Due to the preference to be with friends, it was decided to focus the remainder of this thesis on examining the effects of social emotional influence by friends and how trust in the response exhibited by a friend could impact on its effect.

In studies 2a and 2b this issue of response trust was explored. I found evidence that trust moderated the process of social appraisal, and that this could

occur in a number of different ways. The central finding was that as trust decreased, the effects of the friend's response to the situation on participants' fear were reduced. Trust was shown to have an effect on each of the relationships in the process of social appraisal. Specifically, low trust was shown to reduce the effect of the friend's response on participants' threat appraisals, it was shown to reduce the probability that threat appraisals would predict changes in fear, and low trust reduced the relationship between the friend's response and participants' fear more directly. These findings demonstrated that trust was an important factor in the social appraisal process (and could account for previously observed identity differences, as discussed above), however were limited in 2 key ways. First, trust in the response of the friend was measured as an outcome variable rather than being manipulated. Second, as trust was not manipulated, and the target of the trust was the response of a *friend*, there was a probable restricted range of trust ratings because friends, in the absence of evidence to the contrary, are generally perceived as trustworthy (Clark & Taraban, 1991).

There is indirect evidence that differences in trust could not only affect the strength of social emotional influence but also the direction of its outcome. Schul et al. (2004) argue that information from trusted versus distrusted sources is interpreted differently, with distrust associated with questioning and development of alternative explanations. Therefore, the inference an observer makes about an emotion expressed by someone distrusted could vary from what that emotion would usually convey. For example, a fear response that is trusted signals that the expressor has appraised the situation as threatening. A fear response coming from a less trusted source may instead be interpreted as false (e.g., 'they're trying to frighten me'). While this thesis is not concerned with the effects of 'distrust' as such, low trust may have similar effects (e.g., Jones & George, 1998). Social comparison has also been

shown to result in contrast between the self and other when that other is perceived as dissimilar (Broemer & Diehl, 2004; Epstude & Mussweiler, 2009)- a condition that could be likely in situations of low trust (e.g., Brewer & Brown, 1998). Therefore, the findings from studies 2a and 2b may not tell the 'whole' trust story. Because of this, it was important to create a true low trust condition in the next two studies, allowing the issue of emotion contrast to be investigated.

While it has been argued that the identity category of friend assumes a high level of trust, there is potential for this trust to be reduced. Jones and George (1998) argue that perceptions of trustworthiness in others can be, at least in part, based on past experience- thus, we evaluate the trustworthiness of the other through that lens of experience. As discussed previously, Jones and George differentiate between two forms of trust: conditional and unconditional. If people trust unconditionally (thus perceive holding shared values) they wish to (1) cooperate and (2) aim for shared rather than singular goals (Jones & George, 1998). These 'shared values' can promote other social processes including high confidence in others and help-seeking behaviour. When unconditional trust is present one can predict and be assured of the intentions of others as inferred directly from their emotional responses. However, the unconditional trust one has in a friend can be lessened (to conditional trust or to active distrust). One way of reducing unconditional trust is through evidence from 'past experience'. In the next two studies, the manipulation of trust was centred on this premise, with trust in the response of a friend reduced through the provision of information about their past behaviour.

4.2 Study 3a

The purpose of study 3a was to further evaluate the findings observed in studies 2a and 2b by utilising a controlled manipulation of trust. In this study, an

unambiguous, physically threatening situation was used. Avian influenza was chosen as the threat for a number of reasons. First, it was a disease that represented a realistic threat because it posed a significant, objective, public health threat that was largely uncontrollable. It was not known exactly if and when it could actively threaten lives in Australia, therefore had an element of uncertainty, as well as being anticipatory in nature. Thus, avian influenza represented a realistic threat to wellbeing and existence, albeit one that was anticipated to occur in the near future, so only moderate levels of fear were expected, allowing for observable increases. Finally, avian influenza had been covered extensively in the media over the twelve months during which data were collected, providing an excellent test case to investigate the effects of social appraisal on experiences of fear.

In study 2a, perceived trust was shown to be influenced by the type of response exhibited by the friend. This was reasonable, given that the less trusted response was also the response inconsistent with the available situational information. Trust was uninfluenced by the friend's response in study 2b, where ambiguous situational context information was provided, further supporting this line of argument. It was proposed that emotional responding inconsistent with the situation called into question the credibility of the friend's response, thereby lowering trust perceptions. To investigate this proposal further, in the current study, friends were described as exhibiting emotions consistent or inconsistent with the situation. In addition, trust in the response of the friend was manipulated by provision of information that called into question the credibility of their emotional response. A control condition, where people were alone was also used for comparison purposes.

4.2.1 *Hypotheses*

1a. It was first expected that there would be a two-way interaction between friend response and friend trust on participant threat appraisals. In line with the argument that social emotional influence works via a process of social appraisal, it was expected that the emotional response of the friend would influence threat appraisals in an assimilative manner. If the effects of social emotional influence are impacted by trust, as seen in studies 2a and 2b, this influence should only occur when the response of the friend is also trusted. Thus, under conditions of high trust, the presence of a highly fearful friend would be associated with higher levels of perceived threat than the presence of a less fearful friend. Under conditions of low trust threat appraisals would not differ according to the emotional response exhibited by the friend, because if the friend's response was not perceived as trustworthy it would be disregarded. Alternatively, when trust in a response is low, participants may question what the response reflects (Schul et al., 2004), rather than disregarding it. For example, a highly fearful response that is less trusted may be interpreted as the friend trying to scare them, rather than as an indication that the friend is really threatened. Therefore, low trust may lead to emotion contrast, where an opposite pattern of results (the presence of a less fearful friend is associated with higher threat and a more fearful friend is associated with lower threat) would be expected.

1b. It was further predicted that there would be a two-way interaction between friend response and friend trust on participant's self-reported fear. Consistent with the above hypothesis, it was expected that when the friend was highly trusted participant's self-reported fear would vary according to the response of the friend (high or low fear). Specifically, fear would be higher when the friend expressed high fear than when the friend expressed low fear (emotion assimilation). When the friend was less trusted, self-reported fear either would not be influenced by

the response of the friend, or would move in the opposite direction to the friend's response (emotion contrast).

1c. In line with social appraisal, it was expected that perceived threat would mediate the relationship between friend response and reported fear.

2a. Finally, it was predicted that when the friend was highly trusted, compared to being alone, participants would report lower levels of threat when that friend was less fearful and higher levels of threat when that friend was highly fearful. When the friend was less trusted it was expected again that participants may not be influenced by their response. Compared to being alone, self-reported threat would be comparable regardless of the type of response exhibited by the friend (high or low fear). Alternatively, as outlined in hypothesis 1a, self-reported threat could move in contrast to the response exhibited by the friend, resulting in higher threat compared to control when with a less fearful friend, and less threat compared to control when with a more fearful friend.

2b. Similarly, it was expected that when the friend was highly trusted, compared to being alone, participants would report lower levels of fear when that friend was less fearful and higher levels of fear when that friend was highly fearful. When the friend was less trusted, compared to being alone, self-reported fear either would not differ regardless of the type of response exhibited by the friend (high or low fear), or would move in contrast to the response exhibited by the friend.

4.2.2 *Method*

4.2.2.1 *Participants*

One hundred and forty-four participants (101 female), aged between 18 and 64 years (M = 23.9, SD = 8.6), were recruited from among undergraduate Flinders University student volunteers.

4.2.2.2 *Design*

A 2 (Friend response: high fear, low fear) by 2 (Friend trust: high trust, low trust) by 1 (Control: alone) between-group scenario design was used to test the proposal that social appraisal, in a fear-eliciting situation, would be influenced by the extent to which the friend was trusted. Participants were randomly assigned to either the control or a high or low fear condition, and within each fear condition they were randomly assigned to a high or low trust condition.

4.2.2.3 *Materials*

Threatening article and images. Participants first read a short newspaper article and viewed some images relating to avian influenza (see Appendix C). The article was modified by the inclusion of information regarding the level of threat the disease posed- this was increased. The pictures were also selected on the basis of their reflection of objective threat, and depicted a person in highly protective clothing disposing of a dead bird as well as a human patient in intensive care on life support. This first task exposed participants to real information about the fear object and was intended as a fear induction.

Questionnaire. Following completion of demographic information, and following the fear induction task, participants were asked to read a short scenario, and to imagine themselves in the situation described as vividly as possible (see Appendix C). This scenario was varied between the experimental conditions. All scenarios described a situation in which the participant was watching a moderately fearful news story about avian influenza, either alone (control) or in the presence of a friend (experimental conditions). The trust manipulation consisted of the friend being described as someone who was not very sensible and sometimes overreacted (low trust), or as someone who was generally quite sensible and didn't often

overreact (high trust). The fear manipulation involved the response of the friend who was said to react with either high or low fear to the news story.

After reading the scenario, participants were asked to answer a series of questions whilst still imagining themselves in the situation described (see Appendix C). First were the trust and fear manipulation checks. For the trust manipulation participants were asked how much they thought they could trust their friend's response. For the fear manipulation participants were asked how fearful they thought their friend's response was. For both of these questions participants were asked to mark their response on a 9-point scale ranging from 1 (*not at all*) to 9 (*very much*).

Following the manipulation checks, participants were asked to rate, on the same 9-point scale as for the manipulation checks, how threatened and fearful they felt using appraisal and emotion items embedded among several fillers (see Appendix C)[8]. Cronbach's α was calculated for the fear items (frightened, scared, fearful), and due to their high internal consistency (α = .97) an average 'fear' score was calculated.

4.2.2.4 *Procedure*

Participants came to a tutorial room on the campus of Flinders University, and completed the study in groups. When they arrived, participants were handed a letter of introduction and consent form, which they were asked to read and sign. Participants were then handed the questionnaire. Once completed, as a group, participants were shown a short 2-minute amusing clip from 'The Muppet Show'. This was done in order to reduce or reverse any negative feelings that may have been

[8] In addition to the filler items participants were asked 2 questions assessing their concern for animal welfare and for the environment. It was thought that these might impact on the intensity of emotional responses to avian influenza and the images of dead animals associated with the disease. There were no effects of these variables so they are not discussed further.

elicited by the avian influenza article, images and experimental manipulations. Following this, all participants were given a debrief information sheet.

4.2.3 *Results and discussion*

4.2.3.1 *Manipulation checks*[9]

Two 2 (friend trust: high, low) by 2 (friend fear: high, low) analyses of variance (ANOVAs) were conducted to test the efficacy of the trust and fear manipulations. For the trust manipulation, participants in the high trust condition rated friend responses as more trustworthy (M = 6.38, SD = 1.42) than participants in the low trust condition (M = 3.37, SD = 1.47), F (1, 119) = 126.41, p <.001. For the fear manipulation, participants in the high fear condition rated their friend's fear response as higher (M = 7.24, SD = 1.28) than participants in the low fear condition (M = 2.56, SD = 1.70), F (1, 119) = 292.24, p <.001. There were no significant interactions between trust and fear manipulations on the manipulation check measures for trust, F (1, 119) = .03, ns or for fear, F (1, 119) = .72, ns. Taken together, the manipulations of trust and fear were successful.

4.2.3.2 *Main analyses*

Descriptive statistics for the following analyses are presented below in Table 4.1. To test hypothesis 1a, a 2 (friend fear: high, low) by 2 (friend trust: high, low) ANOVA was performed with perceived threat as the outcome. There was a significant main effect of trust condition on perceived threat F (1,119) = 5.26, p = .02, partial-η^2 = .04, with participants in the high trust condition reporting higher threat overall than those in the low trust condition (M = 5.38 vs M = 4.51). This

[9] The manipulation checks and 'main analyses' are conducted without including the 20 control group participants.

main effect was qualified by a significant interaction between friend response and trust, F (1, 119) = 12.24, p = .001, partial-η^2 = .09 . Simple effects analyses showed that under conditions of high trust, participants perceived the situation as more threatening when in the presence of a friend expressing high fear compared with a friend expressing low fear (M = 6.03 vs M = 4.46), F (1, 119) = 11.01, p = .001, partial-η^2 = .09. Under conditions of low trust, there was a trend towards an opposite pattern of results, with perceived threat somewhat lower when in the presence of a highly fearful compared with less fearful friend (M = 4.16 vs M = 4.85), F (1, 119) = 2.47, p = .10, partial-η^2 = .02.

In relation to hypothesis 1b, there were no main effects but the analysis revealed a significant interaction between fear condition and trust condition on participants' self-reported fear, F (1, 119) = 8.63, p = .004, partial-η^2 = .07. Simple effects analyses showed that when the friend was highly trusted, participant fear was higher when that friend expressed high fear compared to low fear (M = 5.21 vs M = 4.10), F (1, 119) = 4.05, p=.05, partial-η^2 = .03. In line with the above findings regarding threat, rather than no effect of the response of the friend under conditions of low trust, a contrast effect was observed. When the friend was less trusted, participant fear was higher when that friend expressed low fear compared to high fear (M = 4.55 vs M = 3.45), F (1, 119) = 4.62, p=.03, partial-η^2 = .04.

Table 4.1. *Means (and standard deviations) for perceived threat and reported fear as a function of trust condition and friend's response.*

Trust Condition	Friend Response	Perceived Threat	Reported Fear
High Trust	High Fear	6.03 (1.75)	5.21 (2.14)
	Low Fear	4.46 (1.89)	4.10 (2.02)
	Total	5.38 (1.95)	4.66 (2.08)
Low Trust	High Fear	4.16 (1.83)	3.45 (1.74)
	Low Fear	4.85 (1.66)	4.55 (2.47)
	Total	4.51 (1.77)	4.00 (2.11)

Hypotheses 1a and 1b were supported, with evidence of emotion assimilation under conditions of high trust. Under conditions of low trust emotion contrast was observed, indicating that rather than disregarding the less trusted response, participants were still influenced by it. Possible reasons for this contrast effect are discussed later in this study. Taken together, these results suggest that level of trust in the response of a friend can not only impact on the strength of social emotional influence, but also on the direction of its outcome.

4.2.3.2.1 *Social appraisal model*

In support of hypothesis 1c, evidence for the social appraisal mediation model (other response > threat > fear) was again found in this study. Simple regressions showed that the friend response-trust interaction was a significant predictor of participant fear, β = 1.15, explaining 9.1% of the variance, F (1,119) = 8.29, p=.005, and of perceived threat, β = 1.35 explaining 14.9% of the variance, F (1, 119) = 12.24, p <.001. Both the friend response x trust interaction and perceived

threat were included in the third regression, and together explained 38.8% of the variance in fear, F (2, 83) = 34.74, p<.001, with the effects of the friend response x trust interaction on participant fear reduced to non-significance (β = .35, ns). A bootstrapping test (Preacher & Hayes, 2004) of the indirect effect of the friend response-trust interaction on fear reduction via threat reduction was significant, z = 3.49, p <.001.

4.2.3.2.2 *Control group comparisons*

Only outcome scores (rather than change scores) were used in this study, due to the design including a control group. Thus, to further test the effects of social appraisal, the influence of the response of the friend (and trust in this response) on reported threat and fear were next compared to an 'alone' control group (hypotheses 2a and 2b).

A one-way ANOVA with perceived threat as the outcome was initially performed to test hypothesis 2a. Results showed a significant effect of experimental condition on perceived threat, F (4, 139) = 6.27, p < .001. As illustrated in Figure 4.1, planned comparisons, (using a bonferroni adjustment), showed that when compared with being alone (M = 5.86, SD = 1.96), perceived threat was similar in the presence of a highly trusted, highly fearful friend (M = 6.03, SD = 1.75) and lower in the presence of highly trusted, less fearful friend (M = 4.46, SD = 1.89), p = .01. In contrast, being with a less trusted, highly fearful friend was associated with lower perceived threat (M = 4.16, SD = 1.83) compared to being alone (M = 5.86), p = .01, while the presence of a less trusted, less fearful friend (M = 4.85, SD = 1.66) was not significantly different to being alone.

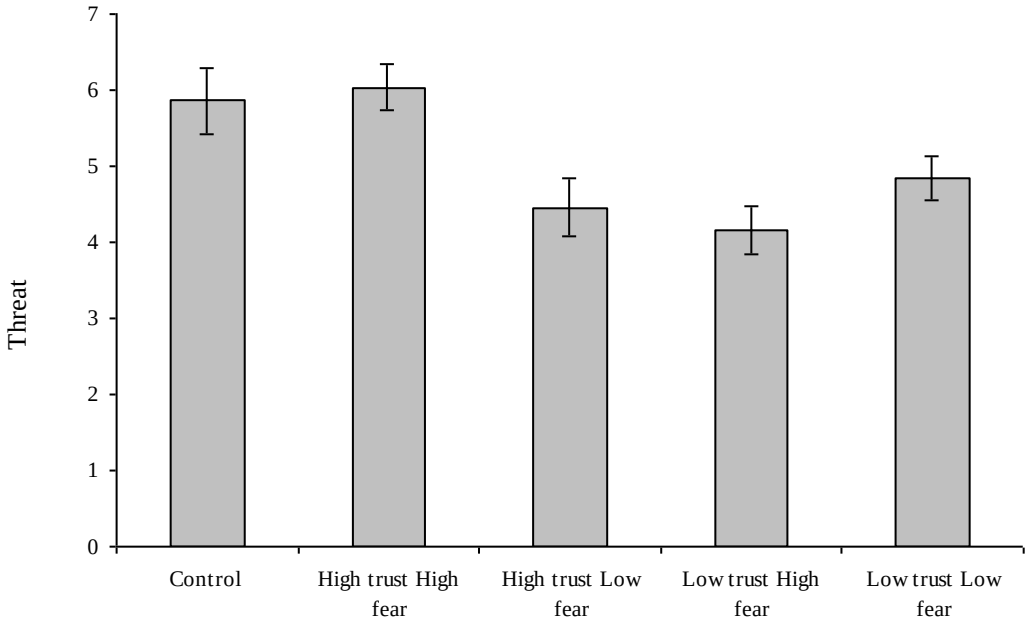

Figure 4.1. Mean perceived threat (with standard errors) for each condition.

Providing support for hypothesis 2b there was a similar main effect of experimental condition on participants' fear response, F (4, 139) = 4.51, p=.002. As can be seen in Figure 9, when compared to the control group (M = 5.51, SD = 1.80), participants exposed to highly trusted fearful friend reported a similar level of fear (M = 5.20, SD = 2.10). Being with a highly trusted, less fearful friend was associated with lower reported fear (M = 4.08, SD = 2.02), p = .02. Again, a partially reversed effect was observed when the friend was less trusted. That is, if the low trusted friend was fearful participants reported significantly lower fear (M = 3.45, SD = 1.74) than control, p = .001, whereas if the less trusted friend was less fearful, participants fear remained similar (M = 4.55, SD = 2.47) to that of the control group.

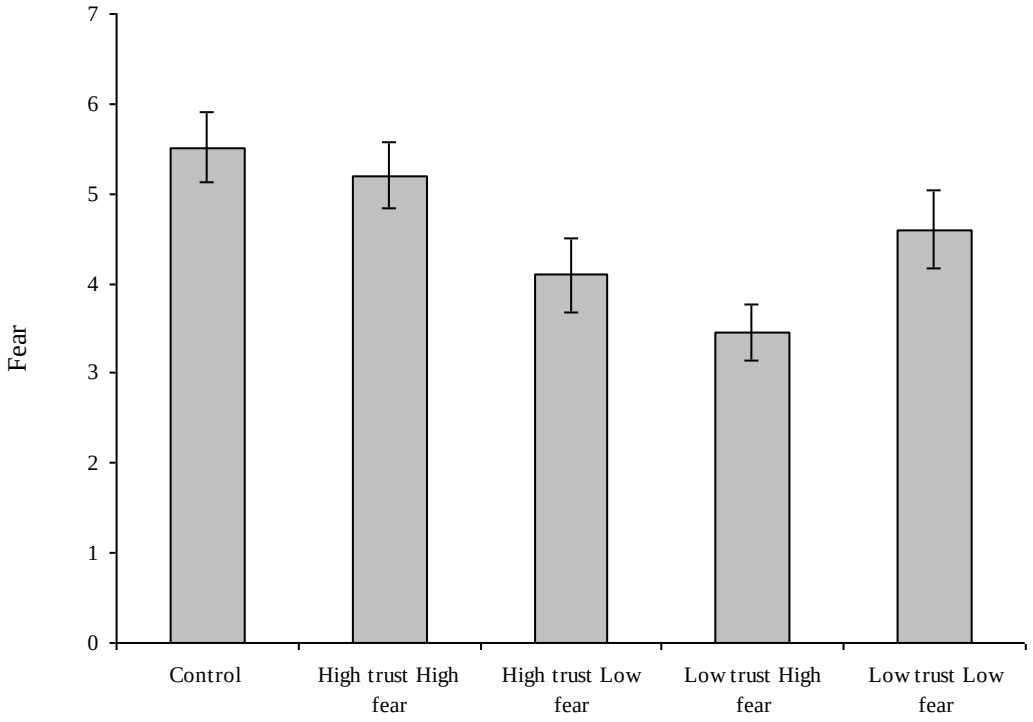

Figure 4.2. Mean fear response (with standard errors) for each condition.

Hypotheses 2a and 2b were partially supported. Under conditions of high trust, the presence of a highly fearful friend was associated with comparable threat and fear to the control group, while the presence of a less fearful friend was associated with lower threat and fear than control (emotion assimilation). These results nicely reflect the qualitative findings from Study 1, regarding expectations about the outcome of the presence of a friend in a stressful situation. In the current study, the finding of no effect of a highly fearful friend probably represents confirmation of experience, while the emotion assimilation effect observed may well represent 'comfort', given its direction (a reduction in fear). Under conditions of low trust, the presence of a highly fearful friend was associated with a contrast effect, where participant's threat and fear were higher than the control condition. However, such a contrast effect did not occur in the presence of a less fearful friend, which was associated with levels of threat and fear comparable to the control group.

Overall, these results show that the presence of a friend in a threatening situation can be associated with lower or similar levels of fear compared to being alone. This depends on the emotional response of the friend and the extent to which that response is trusted. Furthermore, lower fear can reflect emotion assimilation or contrast, dependent on whether the response of the friend is more or less trusted, respectively. The findings of no apparent effect of a highly trusted, highly fearful friend and a less trusted, less fearful friend may also reflect two different outcomes. In the case of a highly trusted, highly fearful friend, their fear provides confirmation of experience rather than leading to an increase in threat and fear. In the case of a less trusted less fearful friend, participant responses were likely to already be in contrast to those exhibited by the friend, thus no influence occurred.

With regard to control group comparisons, the findings from study 3a were partly consistent with those observed in studies 2a and 2b concerning the effects of trust. Again, while an emotion assimilation effect was observed when the friend's response was trusted, this only occurred for low fear responses. High fear responses served to confirm participant's own perceptions of and responses to the situation. However, in this study, under conditions of low trust, rather than less effect as was observed in studies 2a and 2b, there were either no differences (low fear), or the effects were consistent with emotional contrast, where the emotions of participants appeared to be opposite to those of their friend (high fear). Interestingly, this pattern of effects was also observed in Study 1, where the 'other' was a stranger- a person who could also be argued to be trusted 'less'. Thus, the contrast effect observed in study 1, while occurring in an evaluative rather than physical threat situation, *may* have resulted from the emotional response of the stranger being less trusted.

4.2.4 *Emotion contrast (compared to assimilation)*

One line of reasoning to explain emotion contrast, proposes that it could be the result of between group differences in social comparison. Broemer and Diehl (2004) examined the situations in which social comparison could be associated with contrast with the comparison other. They demonstrated that the outcome of social comparison depends on whether similarities or differences between the self and comparison other are salient. In short, when similarity is salient, assimilation is more likely, and when differences are salient, contrast is more likely (see also, Brown et al., 1992; Collins, 2000; Hoorens, 1995; Mussweiler & Strack, 2000). Therefore, it may be that the contrast effect observed in this study reflected lower perceived similarity for the low trust conditions. However, this framework does not explain why neither assimilation nor contrast effects were observed for the high trust, high fear and low trust, low fear conditions respectively.

Trust in sources of information has also been shown to influence the way people perceive and interpret information (Schul et al., 2004), providing another possible explanation for emotion contrast. That is, under conditions of low trust, people may process messages differently, developing 'counter-explanations' for the information they are receiving. On the basis of the findings reported above, I would argue that this can (possibly unintentionally) serve the purpose of improving one's emotional state by reducing negative emotions. While the experience of high trust is associated with the ability to take the response of a friend as a valid indicator of threat, under conditions of low trust the response may be questioned. If the process by which the response of the friend provides information is via inferring their appraisal of the situation from the emotion they express (van Kleef, 2009), a high threat appraisal would be inferred from a friend's high fear response only if they were trusted. If they were less trusted, the same high fear response could be

questioned, and a counter-explanation developed. As a result, the less trusted friend's high fear could be perceived to reflect low threat (e.g., 'they're not scared, they're just trying to scare me') with the outcome of a reduction in one's own fear. Therefore, it could be that the contrast effect observed in this study was a product of questioning, and developing counter-explanations for the emotional response exhibited by the friend. This speculation as to the mechanisms underlying the emotion assimilation and contrast effects observed in Study 3a (and in this thesis so far) will be further explored using quantitative and qualitative data in Study 3b.

4.3 Study 3b

As there was a novel finding regarding the effects of a less trusted friend in study 3a (emotion contrast), it was desirable to find further support for this. In order to investigate participant evaluations of the emotional response of the friend more adequately, a 'think-aloud' protocol was utilised for study 3b. This enabled me to tap into thoughts as they were occurring during the emotional event, rather than afterwards. This is important, as there is some contention that asking people about appraisals after an event actually taps into reappraisals, as people are given the opportunity to reflect on and explain, and even change their appraisals of the situation and their emotional response(s) to it (e.g., Parkinson & Manstead, 1992). Thus, in addition to completing the same task as in study 3a, participants were asked to 'think aloud' during the session, providing an indication of their thought processes.

A significant limitation of previous research in the area of social appraisal is that the process underlying social appraisal, thus how emotions are affected, has not been clearly articulated. Thus a key objective was to obtain qualitative data enabling me to check participant's thoughts and feelings against their quantitative outcomes.

The main aim of the qualitative analysis was to try to elucidate the findings regarding the effects of trust. As previously discussed, there are two explanations for the trust findings that merit further exploration. First, trust may be associated with the types of social comparisons people make, exerting an influence on emotions through this process. That is, high trust may be associated with the other being perceived as similar to the self whereas low trust would be associated with perceived difference. In turn, perceived similarity would lead to assimilative and difference would lead to contrastive emotional comparisons. Second, it may be that trust influences the way in which information is interpreted by the receiver, with high trust associated with the information being judged as valid, while lower trust would be associated with 'questioning' of the validity of the information.

4.3.1 *Hypotheses*[10]

1a. In line with the results from study 3a, it was predicted that there would be an interaction between the response of the friend, and the extent to which that response was trusted, on participant perceptions of threat. Specifically, under conditions of high trust, when in the company of a highly fearful friend, perceived threat would be higher than when in the company of a less fearful friend. A contrast effect was expected under conditions of low trust, with the presence of a highly fearful friend being associated with less threat than the presence of a less fearful one.

1b. Likewise, it was predicted that there would be a two-way interaction between friend response and friend trust on participants' self-reported fear. Again, consistent with the findings from study 3a, it was expected that when the friend was highly trusted participants' self-reported fear would be higher when the friend expressed high fear than when the friend expressed low fear. It was expected that

[10] As I was interested in the processes underlying the influence of the friend, no control group was used in this study

when the friend was less trusted, self-reported fear would be lower when the friend expressed high compared to low fear.

1c. As in Study 3a, it was anticipated that perceived threat would mediate the relationship between friend response and reported fear.

2. In line with the argument that trust may account for the issue of similarity, it was expected that there would be a main effect of trust condition on perceived similarity. Participants would perceive themselves as more similar to friends with highly trusted compared to less trusted responses.

4.3.2 *Method*

4.3.2.1 *Participants*

Participants were 40 students from Flinders University, 29 female, aged between 18 and 49 years (M = 25.90, SD = 7.92). They were recruited by advertisement and paid $10 for their time.

4.3.2.2 *Materials*

The same article, images and questions as in study 3a were used here, with the addition of an item assessing perceived similarity between the participant and their friend (‘to what extent is your friend similar to you’). All elements were presented on a computer screen using the program MediaLab. The fear items (frightened, scared, fearful) had high internal consistency (α = .98) and were therefore averaged.

4.3.2.3 *Procedure*

Participants completed individual testing sessions of 30 minutes duration. On arrival at the laboratory, participants were asked to read a letter of introduction and

complete a consent form if they agreed to participate. The consent form informed participants that the session would be audio taped. Participants were then seated in front a computer and given instructions about the study protocol. They were informed that they would be completing a task on the computer that would require them to answer questions and read information. In addition they were told that they would be asked to think aloud during the task. They were told that we were interested in all the thoughts they were having during the experiment and that thinking aloud was " *like a stream of consciousness- just say everything that comes into your head*". Participants were then informed that they would be completing a practice task (a scrambled word game) that wasn't part of the actual experiment in order to get used to 'thinking aloud'. During this practice period, and the subsequent experimental task, the experimenter used standard prompts where necessary ("*please try to say what you are thinking*"). Following the practice, they were informed that the actual experiment was beginning. At the conclusion of the experiment participants were provided with a debrief information sheet explaining the aims of the research.

4.3.3 *Quantitative Results and Discussion*

4.3.3.1 *Manipulation checks*

Two 2 (friend trust: high, low) by 2 (friend fear: high, low) analyses of variance (ANOVAs) were conducted to test the efficacy of the trust and fear manipulations. For the trust manipulation, participants in the high trust condition rated friend responses as more trustworthy (M = 6.25, SD = 1.92) than participants in the low trust condition (M = 3.05, SD = 1.85), F (1, 36) = 29.59, p <.001. For the fear manipulation, participants in the high fear condition rated their friend's fear response as higher (M = 6.85, SD = 1.73) than participants in the low fear condition

(M = 3.05, SD = 2.24), F (1, 36) = 34.34, p <.001. Again, there were no significant interactions between trust and fear manipulations on the manipulation check measures for trust, F (1, 36) = .03, ns or for fear, F (1, 36) = .02, ns.

4.3.3.2 *Main analyses*

Two (friend fear: high, low) by 2 (friend trust: high, low) ANOVAs were used to test parts (a) and (b) of hypothesis 1. Descriptive statistics are presented below, in Table 4.2.

Consistent with hypothesis 1a, there was a significant main effect of trust condition on perceived threat, F (1, 36) = 4.51, p = .04, partial-η^2 = .11, that was qualified by a significant interaction between friend response and trust condition, F (1, 36) = 23.02, p < .001, partial-η^2 = .40. Simple effects analyses showed that under conditions of high trust, the presence of a highly fearful friend was associated with significantly higher perceived threat than the presence of a less fearful friend (M = 6.70 vs M = 2.90), F (1, 36) = 17.86, p < .001, partial-η^2 = .33. A crossover effect was observed, where under conditions of low trust, the presence of a highly fearful friend was associated with significantly lower perceived threat than the presence of a less fearful friend (M = 2.30 vs M = 4.60), F (1, 36) = 6.54, p = .02, partial-η^2 = .15.

There were no significant main effects of fear condition or trust condition on participants' self-reported fear; however again a significant interaction between fear condition and trust condition was observed, F (1, 36) = 22.30, p <.001, partial-η^2 = .38. Simple effects analyses showed that under conditions of high trust, participant fear was higher when the friend expressed high fear compared to low fear (M = 5.80 vs M = 2.25), F (1, 36) = 15.87, p<.001, partial-η^2 = .31. Again, a crossover effect was observed: under conditions of low trust, participant fear was lower when the

friend expressed high fear compared to low fear (M = 2.33 vs M = 4.73), F (1, 36) = 7.26, p=.01, partial-η^2 = .17, providing support for hypothesis 1b.

Table 4.2. *Means (and standard deviations) for perceived threat and reported fear as a function of trust condition and friend's response.*

Trust Condition	Friend Response	Perceived Threat	Reported Fear
High Trust	High Fear	6.70 (1.34)	5.80 (1.62)
	Low Fear	2.90 (1.60)	2.25 (1.20)
	Total	4.80 (2.42)	4.03 (2.30)
Low Trust	High Fear	2.30 (1.06)	2.33 (1.05)
	Low Fear	4.60 (3.27)	4.73 (3.27)
	Total	3.45 (2.65)	3.53 (2.67)

Taken together, the quantitative findings from the current study, while without a control group, were comparable to those observed in Study 3a, with emotion confirmation or assimilation occurring under high trust and a contrast effect occurring under low trust. It should be noted that the level of self-reported fear in the high trust, low fear and the low trust, high fear conditions were substantially lower than those observed in Study 3a. This was unexpected and it cannot be ruled out that the think-aloud paradigm impacted on responding. Importantly, as mentioned above, the pattern of findings was still very similar to that observed in Study 3a. Examination of the standard deviations for the low trust, low fear condition shows that there was higher variability in perceived threat and fear scores for this condition compared with the others. Thus, the presence of a less trusted, less fearful friend was associated with lower fear for some people, and with higher fear for others. If low

trust is associated with emotional contrast, being with a less trusted friend who is less fearful should result in higher participant fear. However, the less fearful response was also inconsistent with the friend's 'usual' behaviour of overreacting. Consequently, as well as being less trusted on the basis of previous experience, the low fear response may have also been perceived as a questionable indicator of the friend's real feelings regarding the situation, resulting in differentiated responding from participants. This issue is discussed further under the qualitative analysis regarding 'questioning' of the friend's response.

Hypothesis 1c was also supported, with results consistent with the social appraisal mediation model. Perceived threat was found to mediate the relationship between the friend response-trust interaction and participant fear. Simple regressions showed that the interaction between friend response and trust was a significant predictor of participant fear, $\beta = 2.66$, explaining 39.8% of the variance, F (1,36) = 22.30, $p < .001$, and of perceived threat, $\beta = 2.60$ explaining 44.5% of the variance, F (1, 36) = 23.02, $p < .001$. Both the interaction between friend response and trust, and perceived threat were included in the third regression, and together explained 89.5% of the variance in fear change, F (2, 35) = 145.59, $p < .001$, with the effects of the friend response-trust interaction on participant fear reduced to non-significance (β = .20, ns). A bootstrapping test (Preacher & Hayes, 2004) of the indirect effect of friend response-trust interaction on fear reduction via threat reduction was significant, $z = 4.79$, $p < .001$.

4.3.3.3 *Perceived similarity*

Next, the issue of perceived similarity between the self and the friend was investigated. To test hypothesis 2, a 2 (trust condition: high, low) by 2 (friend response: high, low) ANOVA was performed with perceived similarity as the

outcome variable. There was a main effect of trust condition on perceived similarity, F (1, 36) = 4.30, p = .05, partial-η^2 = .11, with highly trusted friends perceived as more similar than less trusted friends. This main effect was qualified by a marginally significant interaction between friend response and trust, F (1, 36) = 3.12, p = .08, partial-η^2 = .08. Simple effects analyses showed that under conditions of high trust, there was no significant difference between perceptions of similarity for highly fearful (M = 5.30, SD = 3.27) or less fearful friends (M = 4.50, SD = 3.87). Under conditions of low trust, highly fearful friends were perceived as less similar (M = 1.60, SD = .84) than less fearful friends (M = 4.20, SD = 3.29), F (1, 36) = 3.64, p = .06, partial-η^2 = .09.

While high trust was associated with high similarity, low trust did not equal *low* similarity. Therefore, hypothesis 2 was only partially supported. The only case in which participants perceived their friend as significantly less similar to themselves was when they were less trusted and highly fearful, which is the condition in which an emotion contrast effect was observed. Examination of the standard deviations indicates that while perceived similarity was unequivocally low when the friend was less trusted and highly fearful, in all other conditions there was wide variability in perceptions of similarity. The possible role of (dis)similarity in the process of social appraisal is discussed further in the qualitative analysis below.

4.3.4 *Qualitative Data*

4.3.4.1 *Coding protocol*

In line with the argument that the level of trust in the response of a friend may play a role in determining how information from this friend is perceived and utilised, the qualitative responses from participants ‘thinking aloud’ were used to

examine (1) social comparisons regarding the friend's response, and (2) how the friend's response was evaluated.

First, a section of the narrative was identified and focused on for the purposes of coding information relevant to social comparison. The author read 25% of the narratives and identified 12 points where comparisons were commonly provided. Social comparisons regarding differences (e.g., *I wasn't fearful after reading the story but I felt sorry for him because he was so fearful*; *it doesn't overly concern me at this stage, but for some reason it seemed to strongly effect them*) and similarities (e.g., *I agree it can make me feel the same way, and even more, 'cause we have the same opinion*; *if she was worried about it I probably would have been a bit more worried*) between the self and the friend were focused on. However, as very few participants made similarity comparisons (5 of 40) only differences were coded (see Appendix D for coding protocol and narrative examples). For each of 12 opportunities differentiation utterances could be recorded as present or not. Utterances not reflecting differentiation were coded as zero (e.g., *I was just thinking about what I had to eat this morning…cheese*). Therefore, differentiation comparison scores could range from 0 to 12.

Next the author identified three points in the narrative at which the response of the friend was most commonly focussed on. At these three points, 2 clear categories of utterances reflecting the construct of interest (evaluation of the friend's response) emerged: those regarding acceptance of the response (e.g., *"he just goes with what's actually happening rather than what people say might happen ; "I'd say it's fairly fearful because he's fearing he's going to get flu's and stuff")* and those reflecting questioning of the response (e.g., *"he's not reacting like he normally does"; "Well he didn't react very much- but he probably does have a general fear about it")* (see Appendix D for coding protocol and further narrative examples). At

each of the three points there could be none, either or both types of utterance present. Utterances reflecting things other than questioning and acceptance were coded as zero (e.g., *I think countries of the world should work together to contain possible pandemics such as bird flu- and not only that but probably television should also be a subject that most countries should work together on*). Thus, there was a total opportunity for 3 accepting and 3 questioning utterances for each participant. The number of acceptance utterances was subtracted from the number of questioning utterances to provide a number ranging from + 3 (high questioning) to – 3 (high acceptance).

Narratives for the initial 25% of the 40 participants were then coded by a second rater. Disagreements between raters were resolved through discussion. The remaining 75% of narratives were coded by both raters, meaning every narrative was coded by both raters. Inter-rater reliability was calculated for each coding topic, using intra-class correlations (see Table 4.3). As reliability for each topic was acceptable the scores from both raters were averaged and these were used in analyses.

Table 4.3. *Inter-rater reliability coefficients for narrative coding*

Narrative topic	Intra-class correlation coefficient
Differentiation	.949 (95%CI = .898-.974)
Questioning	.784 (95%CI = .629-.880)
Acceptance	.837 (95%CI = .714-.910)

4.3.4.2 *Hypotheses*

1. Corresponding to previous research regarding social comparison (Broemer & Diehl, 2004), it was expected that there would be a main effect of trust on the

extent to which participants differentiated themselves from their friend. Participants exposed to the highly trusted friend were expected to differentiate themselves less compared to when the friend was less trusted.

2. It was predicted that there would also be a main effect of trust condition on the extent to which participants questioned versus accepted the emotional response exhibited by their friend. Specifically, in line with Schul et al. (2004) the responses of less trusted friends would be questioned more compared with those of highly trusted friends.

4.3.4.3 *Results and Discussion*

A series of 2 (trust condition: high, low) by 2 (fear condition: high, low) ANOVA's were used to examine the effects of trust condition and fear condition on differentiation comparisons between the self and the friend, and questioning and acceptance of the friend's response.

4.3.4.3.1 *Differentiation comparison*

There was no main effect of trust condition or interaction between trust condition and friend response on the number of differentiation comparisons participant's made, therefore hypothesis 1 was not supported. However, there was a main effect of *friend response*. Participants made more differentiation comparisons against highly fearful (M = 4.70, SD = 3.19) compared to less fearful friends (M = 2.70, SD = 2.48), F (1, 36) = 4.84, p = .03, partial-η^2 = .12.

The finding that participants differentiated themselves more from highly fearful compared to less fearful friends was somewhat surprising. The control group data from Study 3a suggest that this was a moderately fearful situation for participants therefore the differentiation probably doesn't reflect perceived difference

in emotional outcomes. One explanation for the observed effect is that participants were motivated to differentiate their emotional response from that exhibited by their highly fearful friend, as a means of justifying or trying to reduce their own moderate fear. However, fear was only lower when the highly fearful friend was also less trusted. When the highly fearful friend's response was trusted, even though high levels of differentiation were observed, emotion confirmation rather than contrast was the outcome. Therefore, contrary to Broemer and Diehl's (2004) and Epstude and Mussweiler's (2009) arguments, in the current study differentiation alone cannot explain the emotion contrast effect. Of interest, where differentiation *was* associated with emotion contrast, it was also accompanied by low perceived similarity (see quantitative findings), which is in line with the similarity/dissimilarity argument. However whether the dissimilarity in the current study is an antecedent of the emotion contrast or an outcome of it, is not clear.

4.3.4.3.2 *Evaluation of friend response*

As expected, there was a main effect of trust condition on the extent to which participants questioned or accepted the response of their friend, F (1, 36) = 85.37, p < .001, partial-η^2 = .70. The responses of less trusted friends were questioned more (M = 1.60, SD = .74) than those of highly trusted friends (M = -.28, SD = .64). There was also a marginally significant main effect of fear condition, F (1, 36) = 3.42, p = .07, partial-η^2 = .09, with low fear responses (M = .85, SD = 1.39) questioned slightly more than high fear responses (M = .48, SD = .90). This result is consistent with the explanation for the effects of friend response on trust perceptions in study 2a. That is, low fear responses were less trusted due to being inconsistent with the situation.

Here, that could also be the case[11]. Furthermore, the less trusted, less fearful response was also inconsistent with that friend's previous behaviour, possibly leading to further questioning of its credibility. Both main effects were qualified by a two-way interaction between trust and fear, F (1, 36) = 4.39, p=.04, partial-η^2 = .11. Simple effects analyses showed that low fear responses were questioned more (M = 2.95, SD = .93) than high (M = 1.75, SD = .86) when coming from a less trusted source, F (1, 36) = 7.77, p = .01, partial-η^2 = .18, while high (M = -.05, SD = .69) and low (M = -.70, SD = 1.09) fear responses were questioned and accepted equally (as indicated by scores close to zero) when the friend was trusted.

The above data show that emotional responses of less trusted friends were questioned more than those of highly trusted friends, providing support for hypothesis 2. The interaction supports the argument that people evaluate information in light of the characteristics (trust and fear response) of its source. However, as mentioned in the coding protocol for this study, a composite score was calculated to take into account the relative levels of questioning and acceptance for each person. While this is informative when the level of one category is obviously higher than the other (as was the case in the low trust conditions), when the composite score is close to zero this could represent high levels of both types of responses or low levels of both. Therefore, frequencies of questioning and acceptance responses for each condition were examined. These are presented in Table 4.4.

[11] In support of this reasoning, levels of fear were moderately high in the control condition (M = 5.5, SD = 1.8) in study 3a, which utilised the same design as this.

Table 4.4. *Frequencies of questioning and acceptance responses for each condition*.

		High trust		Low trust	
		Number of participants			
Average coded responses across 3 occasions of measurement		High fear	Low fear	High fear	Low fear
Number of Questioning	0	1	0	1	0
	.5	1	2	0	0
	1	**4**	**6**	**4**	2
	1.5	2	1	1	0
	2	2	1	3	**3**
	2.5	0	0	1	**3**
	3	0	0	0	2
Total		11.5	10.5	14	21.5
Number of Acceptance	0	1	0	**8**	**8**
	.5	0	0	0	1
	1	**4**	3	2	1
	1.5	**4**	3	0	0
	2	1	**4**	0	0
Total		12	15.5	2	1.5

Note: Highest frequencies for each type of response, for each condition are highlighted in bold.

These data show that participants in *all* conditions questioned the response of their friend, reducing support for hypothesis 2. Importantly, in the case of highly trusted responses, the questioning was accompanied by comparable numbers of acceptance responses. This was not the case when the response was less trusted, where questioning occurred more frequently than acceptance. This suggests that rather than questioning itself driving the differences between high and low trust conditions, as was predicted, it may be the presence or absence of acceptance, respectively. That is, people may be inclined to engage in questioning of all responses. Where this questioning is resolved through acceptance (as seen under conditions of high trust), emotion assimilation or confirmation is the eventual outcome.

When questioning is *unresolved*, it can eventually lead to emotional contrast (less fear) as was seen when the less trusted friend's response was highly fearful. However, whether this contrast occurs via the generation of 'counter' inferences (Schul et al., 2004) is not clear. Interestingly, under conditions of low trust, questioning of the low fear response was higher than that of the high fear response, though neither contrast nor assimilation was observed. As discussed earlier, this may reflect that the low fear response from a less trusted friend was inconsistent with their previous behaviour. Therefore this response may have been questioned *more* in terms of its reliability as an indicator of their interpretation of the situation (Krull & Dill, 1998), and as a consequence it had less impact (Collins, 1996; Gilbert, Giesler, & Morris, 1995). Overall, participants were motivated to reduce their fear even though this was not always the outcome. However, the high levels of differentiation and questioning that occurred suggest that regardless of the result, they were actively engaged in this process.

4.4 General discussion

The scenario studies presented in this chapter investigated how level of trust in the response of a friend affected the process of social appraisal in a realistic threat situation. Study 3a manipulated the emotional response exhibited by the friend, and level of trust in that response through provision of information about past experience with the friend. Study 3b replicated this using a think-aloud paradigm to obtain data regarding the thought processes underlying social appraisal.

Overall, results from studies 3a and 3b provide more robust evidence that the extent to which the response of a friend is trusted determines the direction of its effect on participant fear in a threatening situation. High trust was shown to lead to emotion assimilation or confirmation whereas low trust was associated with contrast or no influence. The important contribution of this chapter was the investigation of the process by which social appraisal may lead to various emotional outcomes. It was proposed that social appraisal in this case involved evaluation (through differentiation and questioning) of the friend's response in light of the situational context and how trusted that response was.

Participants had a tendency to differentiate themselves from the highly fearful response, independent of trust- probably as a mechanism to reduce fear. Importantly, the motivation to reduce fear appears to influence the process and emotional outcome of social appraisal. In all the studies presented in this thesis, there was a trend for fear to reduce but never increase. The question of whether these reductions reflected a general drive to reduce negative affect was posed in the conclusion of chapter 3. On the basis of findings from Studies 2a and 2b there was insufficient evidence of a tendency for fear reduction, but I suggested social appraisal would not *increase* fear. The findings reported here are consistent with a motivation for fear reduction although it does not necessarily *lead* to such an outcome.

Regarding the questioning-acceptance findings, under conditions of high trust, the response of the friend was questioned in light of their previous 'sensible' behaviour, in order to draw inferences about the information it provided. Whether the friend was highly or less fearful, the questioning was accompanied with corresponding levels of acceptance that the response conveyed valid situation information. Thus, the highly fearful response signalled threat, undermining any differentiation, and participant fear was confirmed. The less fearful response signalled less threat, and participants fear reduced accordingly.

Under conditions of low trust, when the highly fearful response was questioned, the friend's history of overreaction meant that the response could not be accepted as a valid indicator of situational threat. Indeed, the qualitative data show that acceptance of the response was almost absent. This process of questioning was complemented by the differentiation comparisons, and ultimately resulted in an emotion contrast effect. When the less fearful response was evaluated, the questioning was not only unresolved but also occurred more frequently. This reflected the inconsistency between the friend's response and their previous (overreacting) behaviour. Due to the less fearful response not being accepted as valid, its effects were minimised.

Taken together, the questioning-acceptance analysis demonstrates that the process underlying the effects of highly trusted compared to less trusted friends is different. That is, when trust is high questioning and acceptance are balanced, resulting in emotion assimilation. When trust is low, acceptance is absent and questioning leads either to contrast (high fear) or neither contrast nor assimilation (low fear). The next chapter will draw together the various findings from the studies presented in this thesis, to propose a model of social emotional influence in threatening situations. This model will be discussed in relation to existing research

regarding the social transmission of emotion and the issue of affiliation under threat. Theoretical and practical implications will be discussed, as well as directions for future research.

CHAPTER 5. GENERAL DISCUSSION

5.1 Summary of research findings

The aim of this thesis was to examine social emotional influence in threatening situations. First, people's desire to affiliate in threatening situations was explored, with a focus on the underlying reasons. This informed the subsequent investigation of the emotional consequences for people, following the emotional response of another person, and the process by which this influence occurred. This thesis looked at anticipatory (Studies 1, 3a and 3b) and reactive fear (Studies 2a and 2b) in response to an evaluative (Study 1) and a series of physical (Studies 2a, 2b, 3a and 3b) threats.

Study 1 investigated social appraisal in a threatening situation, using a real manipulation of evaluative threat, and confederates trained to express anxiety or calmness. It was found that the emotions expressed by a confederate had a differential influence on participants' threat appraisals and emotional responses to the situation, via a process of social appraisal. When in the presence of a confederate expressing anxiety, participants' appraisals of threat and subsequent fear responses to the situation were reduced- an emotion contrast effect. Mediation analyses showed that the confederate's emotional response influenced participants' emotional responses indirectly, through changing their threat appraisals. There was also some residual direct effect of the confederate's emotion on participant fear, indicating that social appraisal doesn't *necessarily* involve the response of another person changing one's appraisal of the situation. Furthermore, the presence of a calm confederate was associated with an increase in participants' perceived threat, but not in self-reported

fear, demonstrating that social appraisal can influence appraisals without necessarily affecting emotional outcomes.

The question of affiliation preference was also addressed in Study 1, through interviews with participants after completing the stressful experimental task. Responses revealed confirmation of the goals of affiliation that have been proposed previously - uncertainty reduction (Schachter, 1959), cognitive clarity (Kulik & Mahler, 2000), and comfort/reassurance (Mawson, 2005; Ryan et al., 2005). Participants preferred to be alone if the other person was a stranger (as was the case in the experimental task). In line with Rofé's (1984) argument that the presence of others could have could have negative outcomes, participants' cited negative consequences of perceived competitiveness and distraction as why they would prefer to be alone when facing an evaluative threat. Where participants did express a preference to affiliate, it was usually with a friend who they believed would provide confirmation of their experience and comfort regarding the threatening situation. Implicit in all these responses was a focus on the level of trust in the other person. People preferred the presence of someone else who they knew, and who they could trust. They preferred to be alone if they didn't know the other person and therefore couldn't necessarily trust them and their response. On the basis of these interview findings, the issue of trust in the response of the 'other' in a threatening situation was focused on for the remainder of the thesis. Due to the preference for the presence of friend's compared to strangers, and the need to examine various levels of trust in the response of the other person, the next four studies investigated the effects of trust in the response of a friend, on the process of social appraisal in threatening situations.

Studies 2a and 2b explored the role of trust in social appraisal, in more or less ambiguous physical threat situations. A scenario methodology was used for both studies. Findings demonstrated that the outcomes of social appraisal varied

according to how trusted the emotional response exhibited by the friend was. Both studies provided further evidence of the process of social appraisal in threatening situations, showing that the emotions exhibited by a friend influenced participants' appraisals of threat and subsequent fear responses. Results from Study 2a showed that the expression by a friend, of an emotional response inconsistent with available situation information, was perceived as less trustworthy. When situation information was *more* ambiguous in Study 2b, this effect was not observed. Importantly, in Studies 2a and 2b, trust had an impact on emotional outcomes, exerting its influence in 2 potential ways: lower trusted was associated with an overall reduction in social emotional influence, and trust also impacted on the appraisal process. In Study 2a, trust moderated the extent to which perceived threat led to associated emotions: under conditions of low trust, a reduction in perceived threat was less likely to lead to a reduction in fear. In Study 2b trust influenced the extent to which the response of the other informed threat perceptions, with lower trust associated with a weaker effect. Taken together, Studies 2a and 2b demonstrated that trust moderates the direct effect of a friend's emotions on participant emotions, as well as the indirect effect, through appraisals. A key limitation of these studies was their exploratory nature regarding trust. Trust was measured but not manipulated therefore conclusions regarding its effects were limited. Thus the primary aim of the next two studies was to test the effects of trust using a manipulation.

Studies 3a and 3b also utilised scenario methodologies to investigate the impact of trust on the process of social appraisal in a realistic threat situation. Together, they showed that under conditions of high trust, emotion assimilation or confirmation could occur. Emotion assimilation occurred towards less fearful friends, and highly fearful friends confirmed but did not change participant fear. Low trust was found to be not only associated with a reduction in social emotional

influence (as seen in Studies 2a and 2b), but also could impact on the *direction* of that influence. Under conditions of low trust, there was a contrast away from highly fearful friends, resulting in reduced fear, whereas neither contrast nor assimilation occurred in relation to less fearful friends.

Study 3b replicated the design of 3a, and used a think-aloud approach to obtain data regarding thought processes underlying social appraisal. A qualitative analysis of the potential mechanisms underlying the influence of the friend's response showed that the social appraisal involved parallel processes of differentiation comparison and questioning of the validity of the friend's response. Overall, there was a tendency for participants to differentiate their response away from highly fearful friends compared to less fearful friends, independent of trust. It was proposed that this reflected a general motivation to reduce fear. At the same time, the response of the friend was questioned in terms of its validity as an indicator of situational threat, on the basis of evidence regarding the friend's previous behaviour. When the friend's history of behaviour was generally sensible, trust in the response was high. Therefore, the questioning was resolved, and the response accepted as a valid indication of high or low situational threat. The outcome of this was confirmation (high fear) or assimilation (low fear). When the friend had a history of overreacting, reflecting low trust, their response could not be accepted, and questioning was unresolved. If the response was highly fearful, it provided evidence of overreaction on the basis of its consistency with previous behaviour. Thus, the processes of differentiation and questioning had a mutual influence, resulting in emotion contrast. When the less trusted friend expressed low fear, their response was inconsistent with their history of overreaction. This was associated with increased questioning of the response and in this situation neither contrast nor assimilation was observed.

In all studies presented in this thesis, where emotions were influenced (as opposed to unchanged), all changes were reductions in fear. This was either through emotion contrast (Studies 1, 3a, and 3b) or assimilation (Studies 2a, 2b, 3a, and 3b). In summary, results from the studies in this thesis provide compelling support for the occurrence of social appraisal in threatening situations. The process and outcomes of social appraisal were influenced by the extent to which the response of the other person in the situation was trusted. The presence of a trusted affiliate resulted in emotion assimilation when low fear was expressed, or confirmation when high fear was expressed. In both cases the response was trusted as a valid representation of threat. When the response was less trusted, its validity was questioned and reduced influence or emotion contrast was the result. Overall, there was a general tendency for fear to be reduced but not increased by the presence of another person in a threatening situation, whether their company was desired or not. This tendency was reflected in the fact that rather than simply being 'affected' by the response of others (e.g., as with contagion), people creatively utilised the responses of others to reduce their fear where possible.

The usage of the emotional responses of others to reduce fear (or at least ensure fear wasn't increased) was shown to occur in various types of threatening situations, with both strangers and friends. I have argued that the process underlying fear reduction varied according to the extent to which the response of the other person was trusted. On the basis of this argument, and in light of the findings summarised at the beginning of this chapter, a model of the process of social appraisal under threat, which accounts for the impact of trust, was developed. The unique contribution of his model is to elucidate some of the actual thought processes underlying social appraisal. The model is outlined below.

5.2 Social appraisal under threat

The following model of social appraisal in threatening situations accounts for different levels of trust in high or low fear responses of a friend. Below, the steps in this process are discussed.

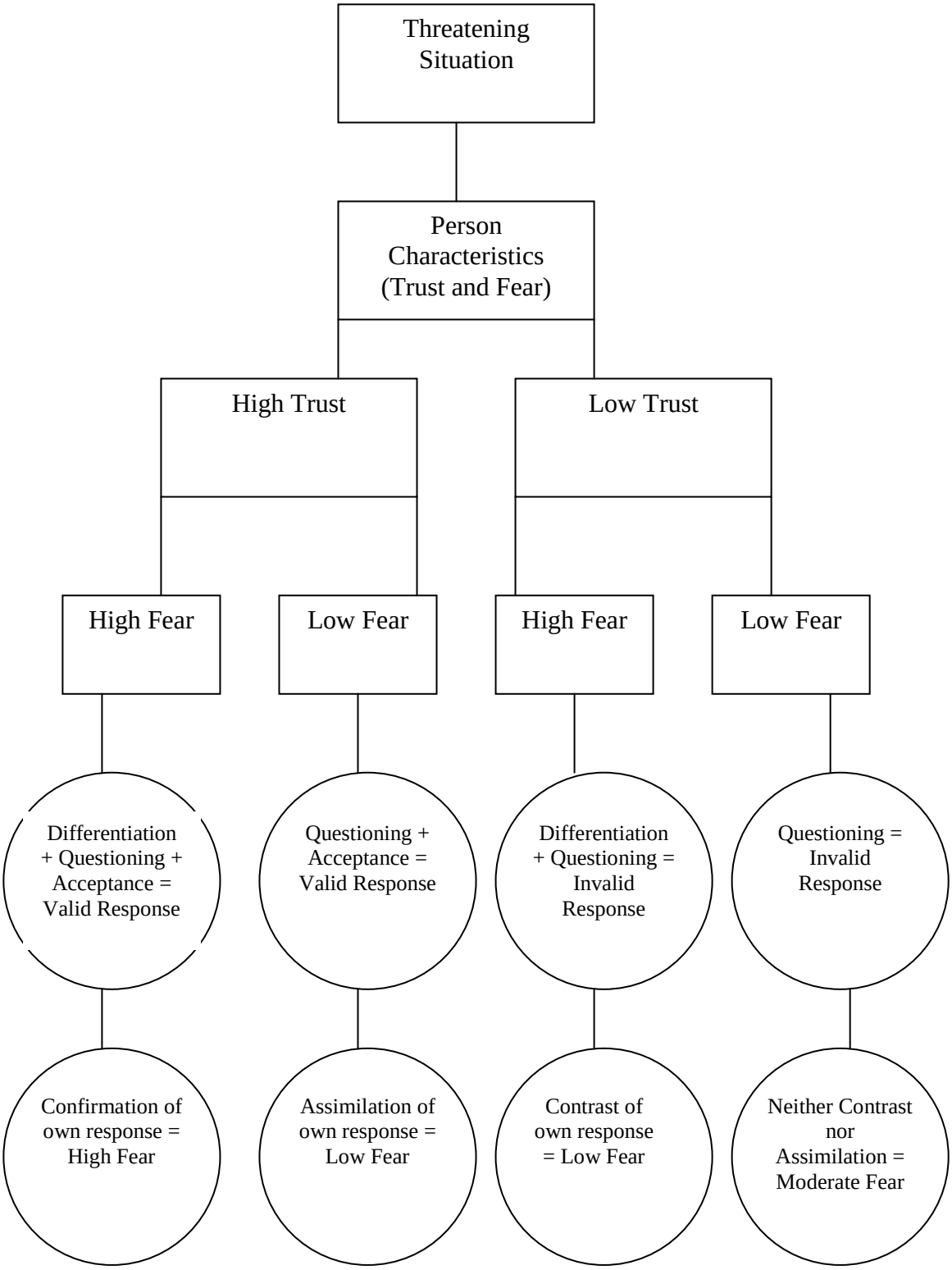

Figure 5.1. Model of the process of social appraisal in a threatening situation for less trusted and highly trusted friends.

Step 1: First, consistent with the definition of social appraisal, the situation is appraised. Due to the high threat, people are motivated to reduce their fear. The characteristics of the other are attended to in light of this motivation.

Step 2: If the response is highly fearful, there is a tendency to differentiate the friend's response from one's own response. If it is less fearful, differentiation is not necessary, as the response itself reflects the desired less fearful state. At the same time, the emotional response of the friend is questioned in relation to their previous behaviour, to determine whether it reflects a valid representation of the situation.

Step 3- High trust: When trust is high the questioning concludes with an acceptance of the person's response as an accurate reflection of the situation, undermining any process of differentiation. This appraisal then informs the person's overall perception of threat, and subsequently their emotional response to the situation. Emotion confirmation or assimilation result in high or low fear, respectively.

Step 3- Low trust: When trust is low, the questioning is associated with the response of the other *not* being accepted as a valid indicator of threat. Where low trust stems from a history of overreaction, the highly fearful response is consistent with the low levels of trust in the person. The questioning, supported by the differentiation comparisons, then results in emotion contrast. When the response is less fearful, it is inconsistent with the expectation of overreaction; thus it is more difficult to make sense of the response. As a consequence, increased questioning occurs, and neither assimilation nor contrast results.

This model shows that first, appraisals can involve quite complex evaluations of information, and that these evaluations can be influenced by a number of competing factors. The motivation to 'feel better' may override other information, to

the extent that we are unlikely to feel worse as a result of the presence of another person; indeed we may even use information from others quite creatively in order to support this. However, at the same time, characteristics of the other are evaluated, and inform how we judge the information they provide. Simply having less trust in someone (or being from a different social group, or not knowing them) does not necessarily mean a response from that person will be ignored or disregarded. Instead, the information it provides will be interpreted in light of the person's characteristics. However, it appears that there is a critical point at which the responses of less trusted others cease to have an impact- in the case of Study 3b it seems that this was the unique situation where the distrust in the response of the other was accompanied by disconfirming evidence, which created a high level of uncertainty about what that response conveyed. In this situation, the response no longer has useful informational value.

While the above model was developed on the basis of a friend interaction, my argument regarding trust is that it subsumes identity differences. Thus the process of appraisal of a less trusted friend should be applicable for a stranger or an out-group member. Similarly, the appraisal of a highly trusted friend should be similar for an expert or an in-group member. The possible theoretical implications of these findings, and applications of this model are discussed below.

5.3 Theoretical implications

The introduction to this thesis outlined several theoretical models of social emotional influence. I have argued that the social appraisal perspective provided the most comprehensive framework, and was able to account for various elements of the contagion (Hatfield et al., 1994), social referencing (Klinnert et al., 1983), conformity influence (Turner et al., 1987) and social comparison (Broemer & Diehl,

2004; Suls et al., 2002) explanations. The research presented in this thesis, while providing evidence *compatible* with these other explanations, shows that the process of influence is most consistent with the social appraisal model. Importantly, the qualitative findings from Study 3b provided evidence of the appraisal of the response of another person, in addition to the appraisal of the situation itself (Manstead & Fischer, 2001). Participants were engaged in effortful evaluation of the other person and their response, whether the outcome was emotion assimilation, contrast, or minimal influence. Studies 1, 2a and 2b explicitly tested the social appraisal model, by examining emotional responses to a threatening situation alone, as well as in the presence of another person, providing clear evidence to support it. While some perspectives (e.g., social referencing, conformity influence) argue that the presence of another person is most informative when uncertainty and ambiguity are high, my findings suggest that social appraisal, and influence, could occur regardless of these factors. Although uncertainty and ambiguity may be associated with greater levels of influence (as seen in the findings of Study 2b compared with 2a), this may not necessarily reflect greater information value.

Rather than social emotional influence simply involving a contagion (or counter-contagion) effect of the emotions exhibited by another person (e.g., Wild et al., 2001), the mediation models in all studies in this thesis provide support for the notion of a 'dual path' model of social appraisal, in line with van Kleef (2009). While the indirect effect of the other person's response on participant emotions, through perceived threat, was significant for all studies (information processing pathway), there was still some residual direct effect of the friend's response on participant emotions (affective pathway). This raises the question of whether previously observed mimicry effects (e.g., Lishner et al., 2008; Sonnby-Borgström et al., 2008**;** Wild et al., 2001) occurred alongside more inferential processes. As

proposed in the introduction to this thesis, the fact that the process of mimicry can be influenced by the identity of the other (Bourgeois & Hess, 2008) suggests that it involves an element of appraisal anyway.

Regarding this issue, I argued that previously observed effects attributed to the identity of the other (e.g., social identity: Haslam et al., 2004; relationship with the other: Jakobs et al., 2001; Masanori et al., 2008; expertise: Randall Crosby et al., 2008) were likely to reflect differences in the extent to which the response of the other person could be trusted. Given that interpersonal relationships are at the centre of social appraisal, and trust is central in interpersonal relationships (Cottrell et al., 2007; Rempel, Ross, & Holmes, 2001), the examination of how trust might impact on the process of social appraisal was not only logical, but also necessary. I found evidence that high trust was associated with assimilation or confirmation, whilst low trust could lead to emotion contrast or no impact. The findings of assimilation under high trust, and not under low trust were largely consistent with previous findings regarding the differential effects of expertise (e.g., Randall Crosby et al., 2008), relationship status (e.g., Masanori et al., 2008) and social identity (e.g., Haslam et al., 2004), supporting my argument that these identity factors could represent differential conditions of trust.

Epstude and Mussweiler (2009) proposed that differences in *similarity* could account for previously observed identity differences in emotional influence. However, I argued that similarity effects could also be explained by differences in trust, with emotion contrast associated with low trust and assimilation with high trust. I found mixed evidence regarding the issue of (dis)similarity. While I found that spontaneous differentiation comparisons were associated with emotion contrast (in line with Broemer & Diehl, 2004; Epstude & Mussweiler, 2009), this only occurred under conditions of low trust. When these differentiations were made under

conditions of high trust, no contrast was observed. Furthermore, I found no evidence of similarity comparisons, even where assimilation effects were found under high trust conditions. Taken together, these findings provide limited support for the 'similarity/dissimilarity' explanation, only showing that dissimilarity *can*, but doesn't always predict the occurrence of emotional contrast.

Threatening situations, by their very nature, elicit fear responses. However, the experience of fear is unpleasant (Kreibig et al., 2007), thus people are motivated to reduce it. It has been argued that people wish to be with others in threatening situations for a variety of reasons. Rofé (1984) argued that the presence of an anxious affiliate could increase fear via emotion contagion. Therefore, he argued that affiliation should only be desired when the outcome of the presence of another person would be beneficial and not increase fear. Findings from Study 1 regarding preferences for affiliation provided support for this argument, with participants preferring to be alone if they perceived that the presence of a stranger could have negative consequences. However, the *actual* outcome of having an undesired person present in an evaluative threat situation was not necessarily negative, with fear either remaining stable or decreasing. Indeed, the presence of an anxious confederate was associated with a reduction in participant's fear, going directly against the emotion contagion Rofé proposed.

While this thesis did not set out to test Rofé's (1984) utility theory regarding affiliation under threat, the findings have important implications for the area of stress-affiliation research more generally. First, consistent with the argument that the purpose of affiliation under threat is to reduce uncertainty, I found that people evaluated the emotional responses of their friends as more or less valid in relation to the situation. Furthermore, I demonstrated that the presence of another person (stranger or friend) could be associated with reductions but not increases in fear.

This latter finding goes against the argument of Rofé (1984) regarding the potential costs of affiliation and suggests that in reality, 'utility' is shaped by the use of the other person's response in a creative manner in order to reduce possible costs, or produce benefits such as fear reduction.

5.3 Practical applications

As outlined in the beginning of this thesis, there is evidence of people being influenced by the responses of others in threatening situations that have the potential to result in serious physical harm or even death. Thus it is important to identify some of the factors that may facilitate or inhibit this influence.

Returning to the anecdote from the introduction to this thesis, can the above model say anything about this particular situation? I have spent the greater part of this thesis arguing for the centrality of trust in the process of social appraisal, and a key foundation of this argument was the distinction between friends (people we know) versus strangers (people we obviously don't). In the anecdote, the people whose responses resulted in a change of situation appraisal for the woman were unknown to her- strangers- and still it appears she took their reactions as valid evidence of low situational threat, questioning her own appraisal of the situation. There are two factors I believe may explain what occurred, in relation to my model. First, the other people were less fearful, thus assimilation with them would support any motivation to reduce fear. Second, while I have argued that trust would be higher for friends than for strangers, in this situation, rather than just one other person there were a number of them, all reacting in the same way; thus, in line with a conformity model of social influence, the person's situation appraisal may have changed to reflect that of the majority. I would argue that the presence of a clear majority response constitutes a condition that would increase trust in that response,

increasing the likelihood it would be perceived as valid. Thus, even if the response was inconsistent with what the woman perceived was happening, and what the situation cues told her, the low fear of other people made her feel better, and they couldn't *all* be wrong, right?

The tendency to want to reduce fear in the face of threat has the obvious potential to be dangerous. This raises the question of what the possible benefits of fear reduction might be. The emotional state of fear is unpleasant (Kreibig et al., 2007; Pauls & Stemmler, 2003), so a drive to reduce this is unsurprising. However, a reduction in fear could have other associated positive outcomes. While fear can be adaptive in directing action, the avoidance it may lead to (Kreibig et al., 2007) could hinder coping in some situations (e.g., social anxiety). Therefore, by reducing fear, coping could be improved (Aspinwall & Taylor, 1997).

More generally these findings have implications for the management of social anxiety, as alluded to above. People with social anxiety usually prefer to avoid contact with others in an evaluative threat situation (e.g., Alden & Taylor, 2004; George, & Stopa, 2008; Muhlberger, Wieser, & Pauli, 2008). If a trusted person was present, exhibiting calm emotion, then this could positively influence their experience by reducing threat appraisals. Alternatively, as was seen in Study 1, even though most people would have preferred to be alone in this type of situation, the presence of a stranger who was outwardly anxious actually improved participant's feelings by reducing their fear. Thus, group treatment in management of social anxiety, where all members of the group appear anxious, has the potential to reduce anxiety via comparison. Though, whether the fear reduction tendency would hold for clinical 'fear' is not known.

5.4 Methodological limitations

There were a number of limitations to the studies reported in this thesis. First, researching threat is necessarily problematic from an ethical perspective. Manipulating threat in the laboratory effectively is difficult, often not ethical and arguably does not often translate to the real world. While the use of a 'real' threat was attempted in Study 1 of this thesis, the results of this manipulation were equivocal. Self-reported threat and fear in response to the situation were low, but in the interviews with participants afterwards, they reported feeling fearful. This also highlights a fundamental problem of the use of self-reports in emotion research. Even though there is strong support for the validity of self-report in emotion research (see Robinson & Clore, 2002), it does not allow for knowing or controlling the accuracy of participant responding. Regardless of this, while the manipulation of threat in Study 1 appeared to be weak, the manipulation of the response of the confederate was successful, and this was arguably the more important focus. Furthermore, the use of an evaluative threat (public speaking) as was done here carries high face validity and real world applications.

A key limitation of experimental research in the area of social interaction is the unrealistic constraints placed on the interaction that occurs. For example, while Study 1 did use a real manipulation of threat, and created a 'real' interpersonal situation, confederates rather than other participants were used for this purpose. The purpose of using confederates allowed for the emotional response exhibited by the other to be controlled; however, this also reduced the range of processes and effects that could be observed. In a real interaction, the process of social emotional influence is dynamic (e.g., Liu, 2009), with each actor involved being influenced by and exerting influence on the other.

Study 1 in this thesis involved qualitative interviews. The material from these was used to determine the direction of the remainder of the thesis. That these responses were obtained on the basis of an evaluative threat, while the subsequent four studies addressed physical threats could be problematic, in that concerns raised by participants regarding the presence of the other could be different in the case of a physical threat. Importantly the issue of trust turned out to be one relevant to both types of threat, though in future, it would be useful to test the findings regarding trust, in an evaluative threat situation.

The use of scenario methodologies in the series of four studies focusing on the issue of trust in relation to social emotional influence (2a, 2b, 3a, 3b) raises the question of whether the findings would be replicated in a real world situation. This concern is somewhat allayed by the generally consistent findings regarding the effects of social appraisal, when a real manipulation was used in Study 1. However, the question remains regarding the key issue of trust. While I have found effects for this variable in four scenario studies, it is not clear whether the outcomes would comparable in a real situation. In defence of this, Robinson and Clore (2001) have demonstrated that there is a high correspondence between how people respond to scenarios, and in real world situations. Regarding Studies 2a and 2b, the ability to draw causal conclusions regarding the effects of trust was also limited by trust being measured rather than manipulated; however this issue was addressed in Studies 3a and 3b.

The use of the explicit manipulation of trust in Studies 3a and 3b raises the possibility of demand effects, with the description of the less trusted friend as someone who ‘overreacted’ signalling to participants that a high fear response was invalid. Furthermore, under conditions of low trust, the less fearful response was obviously *inconsistent* with the friend’s previous behaviour, resulting in possible

confusion (as evidenced by high levels of questioning) and no clear effect. By using a more subtle manipulation of trust (e.g., describing the friend as someone who is not always sensible rather than someone who often overreacts), these problems could be minimised.

Finally, while the qualitative data collected in Study 3b was used to examine possible processes underlying social appraisal, the causal relationships between the variables are all hypothesised rather than known. Therefore, it will be necessary to experimentally test the proposed pathways further.

5.5 Future directions

This thesis has provided clear evidence for the different fear outcomes of social appraisal in threatening situations, on the basis of how trusted the response of a friend is. Regarding the process underlying these differences, preliminary evidence in the form of a model of social appraisal has been presented. This model requires systematic testing to determine the causal relationships of observed effects. For example, the proposal that emotion assimilation or confirmation results when questioning is accompanied by acceptance could be tested by manipulating the extent to which acceptance occurs.

By focusing on friend interactions, this thesis looked at trust in the response of a more or less trusted friend. It would be interesting to see how well the model works when trust in the response of someone less well known such as a stranger is examined. The manipulation of trust in the case of a friend was done in light of their previous behaviour. To gain an insight into the effects of trust independent of behavioural evidence, an implicit manipulation (via priming, for example) would be useful.

While there is no doubt that people have different desires and needs to be with others in threatening situations, there are times when we are forced to be with others when we would not choose to (as was the case for a number of participants in Study 1). As noted earlier, while interviews with participants revealed most would prefer to be alone in an evaluative threat situation, for many, the actual outcome of having another person with them was a reduction in fear. Thus, desire to affiliate does not necessarily reflect the direction of the outcomes of that affiliation. Therefore, while this thesis focused on social appraisal in relation to a person who would usually be a desired affiliate (a friend), it is also important to look at how social appraisal works in relation to an 'undesired' affiliate.

Finally, as discussed under methodological limitations, the process of social appraisal is reflexive, and dynamic. Experiments such as those reported here should be supported with naturalistic observations of these processes. There are at least two ways this could be done. First, a dyadic interaction situation could be created, and observed. Alternatively, naturally occurring threatening situations where the process of social appraisal is likely to occur could be identified and observed. Examples include student presentations, job interviews (evaluative threats), skydiving, and hospital interactions (realistic threats).

5.6 Conclusion

This thesis has shown that in different types of threatening situations, the presence and response of another person, whether desired or not, can influence a person's fear response to that situation. Findings from the first study demonstrated that people's preference to be with others when facing threat was largely determined by the identity of the other person, which probably reflected the extent to which they could be trusted. Somewhat unexpectedly, most people when asked, expressed a

desire to be alone in a stressful situation. Where the presence of another person was desired, people unsurprisingly preferred to be with friends. Furthermore, people explicitly *did not* want to be with strangers. Paradoxically, despite this I found evidence that the presence of a stranger (Study 1) could actually have the outcome of improving one's emotional state by reducing fear. Importantly, in all studies there was a tendency for fear to reduce with the presence of another person, or at least remain stable. There would be obvious exceptions to this in the real world (e.g., realistic threat situations such as natural disasters) where mass panic rather than fear reduction is the most likely (and probably most adaptive) outcome. Importantly though, mass panic may not reflect increased fear, but rather a mass *confirmation* of fear, where the features of the situation combine with the observable responses of other people, to confirm each person's fear response. Therefore, the observable presence of fear on a large scale does not necessarily provide evidence that social influence *increases* fear. Overall, it appears that there may be a general motivation to reduce fear in threatening situations, and people will engage in thought processes that support this drive where possible.

Investigation of how social emotional influence occurred provided convincing support for the social appraisal model of influence, with the emotional response of the other person having a direct effect on participant fear, and more indirectly influencing appraisals of threat and subsequent fear responses. Of central importance to this thesis was the finding that the level and direction of emotional influence were impacted on by the extent to which the response of the other person was trusted. On the basis of my findings I proposed a model of social appraisal in threatening situations, accounting for the issue of trust, which can predict under what conditions emotion assimilation versus emotion contrast outcomes could be expected. The process underlying social appraisal appears to work differently under

different levels of trust. When trust is high, the emotions of the other are accepted as valid and utilised more directly as information, leading to emotion confirmation (high fear) or assimilation (low fear). When trust is low, the emotions of the other are evaluated, through questioning, as counter- or non-informative. Emotional contrast (high fear) or no influence (low fear) is the outcome. These findings demonstrate that effortful appraisals underlie emotion assimilation and contrast, as well as 'non-influence'. This model of social appraisal is however limited by the constraints of this thesis, in that it was developed on the basis of friend interactions, and in relation to a realistic physical threat (though it could be applied to an evaluative threat situation).

Overall, this thesis provides compelling evidence that trust can influence social appraisal, and may explain previously observed differences in social emotional influence attributed to identity. Theoretically, I have demonstrated how the social appraisal perspective can account for various other explanations of social emotional influence including emotion contagion, social referencing, conformity influence and social comparison. Importantly, this thesis makes a valuable contribution to the social appraisal perspective by providing preliminary evidence of the mechanisms by which it can influence emotion- an area that has not been comprehensively addressed previously.

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APPENDIX A

Materials – Study 1

Study 1: Letter of introduction

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Mariette Berndsen, PhD

This letter is to introduce Ellie Lawrence-Wood who is a postgraduate student in the School of Psychology at Flinders University. She will produce her student card, which carries a photograph, as proof of identity.

She is undertaking research leading to the production of publications on the subject of thoughts and emotions. She is particularly interested in the psychological responses and processes people go through while preparing for and completing various tasks. She is also interested in how people's preparation affects their subsequent performance on a task.

She would be most grateful if you would assist in this project. No more than 30 minutes per occasion would be required. Because she is interested in the processes people go through, and the way in which experiences might change over the course of preparing for and completing tasks, you will be asked to answer questionnaires and be interviewed during this session. We would also like to audio record the interview.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting publications. You are, of course, entirely free to discontinue the participation at any time or to decline to answer particular questions.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on (82012334), fax (82013877) or e-mail (mariette.berndsen@flinders.edu.au)

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee. The Secretary of this Committee can be contacted on on 8201-5962, fax 8201-2035, e-mail sandy.huxtable@flinders.edu.au.

Thank you for your attention and assistance.

Yours sincerely,

Dr.Mariette Berndsen,

Lecturer Social Psychology,

School of Psychology, Flinders University

Study 1: Participant consent form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

(by interview and experiment)

I ….....

being over the age of 18 years hereby consent to participate as requested for the research project on psychological processes during task performance

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to my information and participation being recorded
4. **I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.**
5. I understand that:
   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - Whether I participate or not, or withdraw after participating, will have no effect on any treatment or service that is being provided to me.
   - Whether I participate or not, or withdraw after participating, will have no effect on my progress in my course of study, or results gained.
   - I may ask that the recording be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.
6. I agree to the tape being made available to other researchers who are not members of this research team, but who are judged by the research team to be doing related research, on condition that my identity is not revealed.

Participant's signature……Date……...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name……Ellie Lawrence-Wood…….

Researcher's signature……..Date…….

Study 1: Baseline questionnaire

In today's session you will be asked to complete **two tasks** and answer questionnaires about your thoughts and feelings. You will also be verbally interviewed after you have completed your **first** task.

For your first task, you will be given five minutes to write a speech about a topic that will be assigned to you shortly. When writing this speech we want you to really think about the content and how this will be received by our observers.

For the second task, we will bring in our research team and you will present to them the speech you have written. They will be assessing the content of your talk for intelligence and clarity, and they will be assessing the quality of your performance. You will be provided with feedback about your performance following the presentation.

The experimenter will return shortly to give you the information you will need to write your paper. Before this, we would like you to answer some questions about how you are feeling and what you are thinking AT THIS MOMENT.

PLEASE TURN THE PAGE

First of all, we are interested in what you are thinking and how you are feeling RIGHT NOW. Remember, we are interested in your response at this moment. Work at a steady pace- it is not necessary to ponder over your answers; the first answer you decide on for a given item is probably the most valid.

For each of the following statements, please rate on the scale of 1 (*not at all*) to 7 (*very much*) the extent to which you agree with it AT THIS MOMENT.

I am thinking about what I will have to do next

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I am interested in what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I am concerned about what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I am mentally rehearsing what I have to do next

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel excited about what is going to happen next

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I think this situation is amusing

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel anticipation about what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel threatened

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel confident in my ability to do the tasks

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel certain about what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

This situation is threatening

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Now we would like you to rate, using the same scale as before - 1(*not at all*) to 7 (*very much*) - the extent to which you feel each of the following AT THIS MOMENT.

Comfortable

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Cheerful

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Alert

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Calm

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Concerned

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Sure of yourself

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Challenged

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Frightened

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Afraid

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Uncertain

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Fearful

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Hostile

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Anxious

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Sad

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Nervous

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Positive

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Scared

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Powerless

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Study 1: Writing/speech task (threat manipulation)

For this task you will be given **five minutes** to write a speech on **GLOBAL WARMING.**

You will be presenting this speech to our research team later on. Remember, they will be assessing the content of your talk for intelligence and clarity, as well as assessing the quality of your performance.

Once you have written this speech we would like you to answer some more questions about what you are thinking and how you are feeling.

It is important that you do not speak to any of the other participants during this task.

You now have five minutes to prepare your speech for our research team. Your speech is to be about GLOBAL WARMING. **When the timer sounds, please stop writing** and open the folder labelled 'QUESTIONNAIRE 2'.

When the timer sounds, please stop writing and open the folder labelled ‘QUESTIONNAIRE 2’.

Study 1: Questionnaire 2

Before we move onto the next part of today's session, we would again like you to answer some questions about your thoughts and feelings RIGHT NOW. As before, try to work at a steady pace- it is not necessary to ponder over your answers; the first answer you decide on for a given item is probably the most valid.

For each of the following statements, please rate on the scale of 1 (not at all) to 7 (very much) the extent to which you agree with it at this moment.

I am thinking about what I will have to do next

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I am interested in what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I am concerned about what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I am mentally rehearsing what I have to do next

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel excited about what is going to happen next

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I think this situation is amusing

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel anticipation about what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel threatened

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel confident in my ability to do the tasks

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I feel certain about what is going to happen

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

This situation is threatening

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

We want you to think about the task you just did. Please rate, on the scale of 1 (not at all) to 7 (very much) the extent to which you did or thought each of the following things whilst writing your speech.

I am mentally rehearsing what I am going to say in my presentation

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I just wrote everything that came into my head

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I felt that I could not perform as well as I usually would be able to

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I thought about what I wanted to say before I wrote it down

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I was preoccupied with other things

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I was very focussed on what I was doing

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

My mind was racing

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

My mind just went blank

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I was thinking about presenting the speech in front of others

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

I have the words of my talk going around and around in my head

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Now we would like you to rate, using the same scale as before - 1(not at all) to 7 (very much) - the extent to which you feel each of the following

Comfortable

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Cheerful

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Alert

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Calm

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Concerned

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Sure of yourself

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Challenged

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Frightened

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Afraid

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Uncertain

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Fearful

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Hostile

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Anxious

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Sad

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Nervous

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Positive

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Scared

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Powerless

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7***(Very much)*

Please wait quietly for the experimenter to return and collect your questionnaire.

Study 1: Instructions for confederates

Do not make any eye contact with the participants when you enter the testing room. Once you are seated I will explain the experimental procedure to you and the participant. Begin to follow your protocol when the 'session' starts.

Below is what to write for the writing task, with behavioural prompts. Please learn this protocol so that you don't have to refer to this sheet during the test session. We are aiming for uniformity so please try to be consistent each time. Watch the video example of me, and try to model yourself on this as best you can.

If the participant attempts to make conversation, first do not respond. If they persist, point to the instruction on the questionnaire specifying participants not speak to each other. If they still persist, quietly remind them that speaking is not allowed. Try not to engage in eye contact, conversation or smiling behaviour with the participant.

Anxious protocol:

Behaviours

Fidget
Sigh
Clench Jaw
Tap legs and hands
Frown
Anxious expression (see video)
Look around the room

[look towards the timer] Global warming is a serious issue facing the world today. **[look around the room and chew pen]** It is caused by the greenhouse effect where greenhouse gasses are produced from pollution. **[scribble out previous sentence and sigh]** This pollution (e.g., from cars and factories) goes up into the atmosphere and creates a **[frown with jaw clenched and look around the room]** barrier which lets infra-red light from the sun come into the earths atmosphere but prevents it from leaving when it rebounds off the earths surface. **[fidget with pen and look at timer]** The consequence of this is a rise in the earth's surface temperature. However, there is controversy about whether this is actually occurring**.[Jiggle legs and look anxiously around- see video for 'anxious' expression]** Some schools of thought argue that there is no evidence of an increase in the Earth's temperature and still others argue that the earth might actually be cooling. Regardless of this, the issue remains that if global warming is occurring, this could have eventual catastrophic consequences**.[read over your paper intently until the experimenter returns]**

Calm protocol:

Behaviours

Relaxed jaw

Slight smile
Very little body movement

Global warming is a serious issue facing the world today. It is caused by the greenhouse effect where greenhouse gasses are produced from pollution. This pollution (e.g., from cars and factories) goes up into the atmosphere and creates a barrier which lets infra-red light from the sun come into the earths atmosphere but prevenets it from leaving when it rebounds off the earths surface. The consequence of this is a rise in the earth's surface temperature. However, there is controversy about whtehr this is actually occurring**.** Some schools of thought argue that there is no evidence of an incerase in the Earth's temperature and still others argue that the earth might actually be cooling. Regardless of this, the issue remains that if global warming is occurring, this could have eventual catastrophic coonsequences.

Study 1: Interview questions

Semi-Stuctured Interview Proforma

Participant code:
Confederate:
Tell me in your own words about your experience in the session so far: tell me about what you've been doing, what you've been thinking and how you've been feeling.
We ask all of our participants whether they prefer to have company when doing tasks such as these, as there is evidence to suggest that this can impact on task performance- if you had a preference to be in this session with another participants or alone, what would your preference be, and why?
Because you are participating in this study at the same time as another participant I have to ask you some questions related to them. Research suggests that having other people around can impact on our ability to do tasks and how we perform them. These next questions are designed to assess your perceptions of the other participant and how detailed your attention to them was. There are no right or wrong answers here and if you can't answer something, just tell me so. First of all, how aware were you of the other participant?
Can you recall anything about the other participant's behaviour during the task?
What do you think they were thinking about during the session?
How do you think they have been feeling during the session?
The final question related to being in the room with another participant is about trust- so I'm interested in the intuitive trust we have in other people- the snap judgement we make when we see or meet another person. With that in mind, if you had to rate the extent to which you trust the other participant, on a scale of 1 to 7, where would you rate them?
Now I have some more general questions about your experiences in the session so far- we like to ask all our participants part way through the session whether there has been anything about the session or the tasks they have been doing that they have thought is confusing or unusual- is there anything so far that you have found confusing or unusual
With the tasks and questionnaires that you have been working on, does it feel like they are related to each-other, and if it does, in what ways?
Finally, we ask all of our participants what they think we are expecting to find in our study- if you had to guess, what would you say?

APPENDIX B

Materials – Studies 2a and 2b

Studies 2a and 2b: Letter of introduction

FLINDERS UNIVERSITY
ADELAIDE • AUSTRALIA

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School of Psychology
Faculty of Social Sciences
Mariette Berndsen, PhD

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This letter is to introduce Ellie Lawrence-Wood who is a postgraduate student in the School of Psychology at Flinders University. She will produce her student card, which carries a photograph, as proof of identity.

She is undertaking research leading to the production of publications on the subject of emotions. She is particularly interested in topics such as under what conditions do people experience emotions, and how intense are these experiences.

She would be most grateful if you would assist in this project, by use of a questionnaire. No more than 30 minutes per occasion would be required.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting publications. You are, of course, entirely free to discontinue the participation at any time or to decline to answer particular questions.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on (82012334), fax (82013877) or e-mail (mariette.berndsen@flinders.edu.au)

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee. The Secretary of this Committee can be contacted on on 8201-5962, fax 8201-2035, e-mail sandy.huxtable@flinders.edu.au.

Thank you for your attention and assistance.

Yours sincerely,

Dr.Mariette Berndsen,

Lecturer Social Psychology,

School of Psychology,

Flinders University

Studies 2a and 2b: Consent form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

(by experiment)

I ….....

being over the age of 18 years hereby consent to participate as requested in the experiment for the research project on 'situations and emotions'

4. I have read the information provided.
5. Details of procedures and any risks have been explained to my satisfaction.

3. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.

4. I understand that:
   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - Whether I participate or not, or withdraw after participating, will have no effect on my progress in my course of study, or results gained.

Participant's signature……Date……...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name Ellie Lawrence-Wood

Researcher's signature……..Date……

Study 2a and 2b: Questionnaire (withal scenario variations: objective and ambiguous threat; fearful, neutral and amused responses.)

In the following study you will be asked to read a scenario in sections. Between each section you will be asked to answer a series of questions as if the situation described was actually happening to you. You will be asked to answer some of the same questions at a number of different points during this study. We are interested in how you respond at each of these points, so please try to answer the questions with 'fresh eyes' each time. All of your responses are completely anonymous.

Now we would like you to read the first part of the scenario. We would like you to imagine yourself as vividly as possible in the situation described. Really try to 'put yourself into' the situation and imagine yourself experiencing the things described, and reacting to them. We want you to really imagine the situation as if you were experiencing it.

Study 2a – objective threat

You are walking home from dinner. It is evening, and the sun has just started to go down. The streets near your home are really quiet and there is very little traffic on the roads. Out of a side street appears a person. This person approaches, and as you try to walk past him, he puts his arm out in front of you, blocking your way. He is wearing a dark hat and coat and it is difficult to see his face in the dim light. He seems agitated and demands your money in a very aggressive manner.

You can see that he is holding a jagged piece of broken bottle in his hand. He holds up the bottle for you to see, and again demands money.

Study 2b: ambiguous threat

You are walking home from dinner. It is evening, and the sun has just started to go down. The streets near your home are really quiet and there is very little traffic on the roads. Out of a side street appears a person. This person approaches as you continue down the street.

Still imagining yourself in this situation as vividly as possible, we would like you to answer some questions. Answering the questions as if you are actually experiencing the situation above, we are interested in the extent to which you are feeling each of the following responses. Please rate on the scale of 1 *(not at all)* to 7 *(very much)* the extent to which you agree with each of the following statements.

I feel afraid.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I feel disgusted.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I feel surprised.								
(not at all)	1	2	3	4	5	6	7	*(very much)*

I feel tense. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel uncertain. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel angry. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel distressed. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel powerful. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel happy. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel upset. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel frightened. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel sad. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

I feel comfortable. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel joyful. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel nervous. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

I feel anxious. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel hostile. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel fearful. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel shaky. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel alert. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel afraid. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel enraged. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel scared. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I think the situation is funny. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

I feel all alone in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I have the inclination to stay and deal with this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I am confident that I can manage what is happening in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel threatened by this situation.

(not at all)	1	2	3	4	5	6	7	*(very much)*
I feel that I am able to cope with this situation.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I have the inclination to run away from this situation.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I feel that I need some help to deal with this situation.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I think that this situation is dangerous.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I am certain about what is happening in this situation.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
This situation is not very threatening.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I feel that I have some control in this situation.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I am unsafe in this situation.								
(not at all)	1	2	3	4	5	6	7	*(very much)*

Now we would like you to read the second part of the scenario. Once again, really try to 'put yourself into' the situation and imagine yourself experiencing the things described, and reacting to them. We want you to really imagine the situation as if you were experiencing it.

Study 2a and 2b - fearful

Your friend, who is walking home with you, begins to tremble. Her eyes are wide and she looks pale. She is looking down, avoiding eye contact with the person. Your friend can't stop shaking.

Study 2a - neutral

Your friend, who is walking home with you, is looking around serenely. She looks towards the person, but does not say or do anything. Your friend's face appears neutral.

Study 2b - amused

Your friend, who is walking home with you, begins to giggle. Her eyes are crinkled, and you see that she's smiling. She is holding her hand over her mouth. She can't even look at the man without laughing. Your friend just can't stop giggling.

Again, we are interested in your experiences after reading about this part of the situation. Imagining yourself actually experiencing what has been described, we are interested in the extent to which you are feeling each of the following responses. Please rate on the scale of 1 *(not at all)* to 7 *(very much)* the extent to which you agree with each of the following statements.

I feel happy.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I feel joyful.								
(not at all)	1	2	3	4	5	6	7	*(very much)*

I feel powerful. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel scared. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel enraged. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel afraid. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel alert. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel shaky. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel surprised. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel uncertain. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel angry. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel afraid. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel tense. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

I feel disgusted. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel comfortable.

(not at all) 1 2 3 4 5 6 7 *(very much)*
I feel fearful. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel distressed. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel hostile. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel anxious. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel sad. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel nervous. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel upset. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel frightened. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel threatened by this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I am unsafe in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

I feel all alone in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I have the inclination to stay and deal with this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

I feel that I need some help to deal with this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel that I am able to cope with this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I have the inclination to run away from this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I am certain about what is happening in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I think the situation is funny. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I am confident that I can manage what is happening in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I feel that I have some control in this situation. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
This situation is not very threatening. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
I think that this situation is dangerous. *(not at all)* 1 2 3 4 5 6 7 *(very much)*

Now we would like to ask you some questions about your friend. We would like to know your thoughts about and feelings towards your friend. Once again, please rate on the scale of 1 *(not at all)* to 7 *(very much)* the extent to which you agree with each of the following statements.

I think that my friend's response is trustworthy. *(not at all)* 1 2 3 4 5 6 7 *(very much)*
How fearful is your friend's response in this situation?

(not at all)	1	2	3	4	5	6	7	*(very much)*
How serious is your friend in this situation?								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I think that my friend's response is sensible.								
(not at all)	1	2	3	4	5	6	7	*(very much)*
To what extent do you pay attention to your friend in this situation?								
(not at all)	1	2	3	4	5	6	7	*(very much)*
I think that my friend's response is reasonable.								
(not at all)	1	2	3	4	5	6	7	*(very much)*

Finally, we just need some demographic information from you.

Age in years: _____

Gender: *Please circle one.* Male Female

Language spoken at home: _____

Major subject of study: _____

APPENDIX C

Materials – Studies 3a and 3b

Studies 3a and 3b: Letter of introduction

FLINDERS UNIVERSITY
ADELAIDE • AUSTRALIA

This letter is to introduce Ellie Lawrence-Wood who is a postgraduate student in the School of Psychology at Flinders University. She will produce her student card, which carries a photograph, as proof of identity.

She is undertaking research leading to the production of publications on the subject of emotions. She is particularly interested in topics such as under what conditions do people experience emotions, and how intense are these experiences.

She would be most grateful if you would assist in this project, by use of a questionnaire. No more than 30 minutes per occasion would be required.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting publications. You are, of course, entirely free to discontinue the participation at any time or to decline to answer particular questions.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on (82012334), fax (82013877) or e-mail (mariette.berndsen@flinders.edu.au)

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee. The Secretary of this Committee can be contacted on on 8201-5962, fax 8201-2035, e-mail sandy.huxtable@flinders.edu.au.

Thank you for your attention and assistance.

Yours sincerely,

Dr.Mariette Berndsen,

Lecturer Social Psychology,

School of Psychology,

Flinders University

Studies 3a and 3b: Consent form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

(by experiment)

I ….....

being over the age of 18 years hereby consent to participate as requested in the experiment for the research project on 'situations and emotions'

6. I have read the information provided.

7. Details of procedures and any risks have been explained to my satisfaction.

3. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.

4. I understand that:
   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - Whether I participate or not, or withdraw after participating, will have no effect on my progress in my course of study, or results gained.

Participant's signature……Date……...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name Ellie Lawrence-Wood

Researcher's signature……..Date…….

Studies 3a and 3b: Questionnaire- high trust, high fear version [low trust, low fear variations in brackets]

AVIAN INFLUENZA STUDY

The following questionnaire is about avian influenza. We are interested in your thoughts and opinions about this issue and how it makes you feel.

Please be assured that all your responses will remain completely confidential and anonymous.

Before you begin the task we would like to know some information about you. Be assured that all information you provide here will remain completely confidential, and your identity will remain anonymous.

Please answer the following questions. There are no right or wrong answers.

Do you eat any animal products such as meat and eggs?

(*please circle one*) **Yes** **No**

Age in years _____

Gender (*please circle one*) **Male** **Female**

Nationality _____

Language spoken at home _____

We are interested in your opinions about, and responses to, avian influenza. The article and images on the following page have been sourced from print and web-based news services.

We would like you to read the following article and look at the following images carefully. Please turn the page to see the article and images.

Flu birds here, says expert

JADE BILOWOL
BRISBANE

DEADLY avian flu is "highly likely" to have already reached Australia, a top scientist says.

Queensland-based medicinal chemist Professor Mark von Itzstein, who has played a key role in efforts to develop a vaccine for the deadly H5N1 strain, yesterday said birds migrating from Indonesia could have brought the virus to northern Australia.

"The fact is Indonesia has now reported cases of bird flu . . . and this is about the time of year the birds start to migrate," Professor von Itzstein, the director of the Institute for Glycomics at Griffith University's Gold Coast campus said.

Just because there had been no reported cases of the flu in Australia didn't mean it wasn't present, he said.

"There is no magic curtain between Indonesia and Australia and given the expanse of our land, it would not be surprising if it was here," Professor von Itzstein said.

"In my view, it is highly likely." However, he said the potential impact was unclear because migratory birds could "die, disappear or move on" and avoid detection once they had reached Australia.

> **"We should expect a major human pandemic**

"Given the fact it's marching across Europe now, it's obviously mobile and there is no reason it should not be mobile from our neighbour to our country."

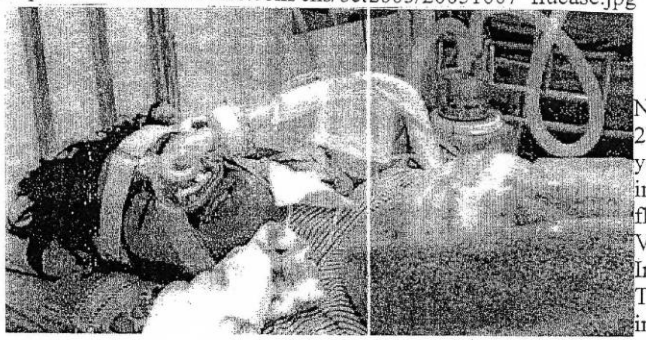
He said he believed it was only a matter of time before the strain mutated and spread to humans.

"Based on history, we should expect a major human pandemic to occur at some stage," he said.

The Advertiser, Thursday February 23, 2006, p.6

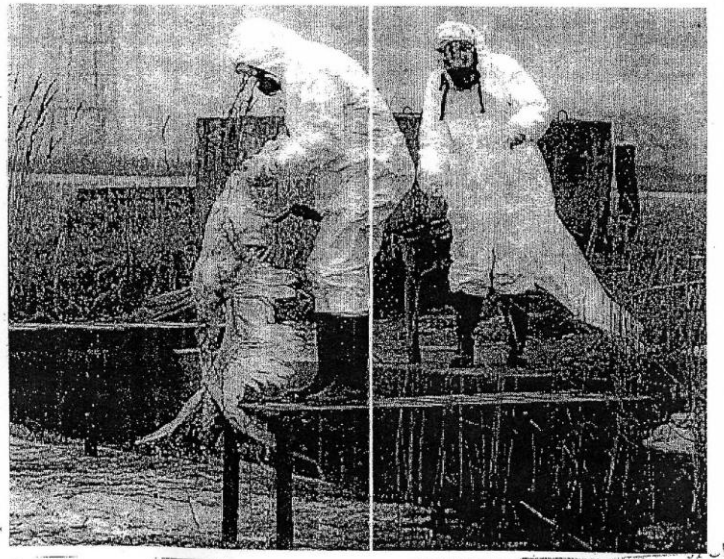
Man hospitalized with virus as officials warn of possible pandemic

http://www.ens-newswire.com/ens/oct2005/20051007_flucase.jpg



Nguyen Sy Tuan, 21, and possibly his younger sister are infected with bird flu, officials at Vietnam's National Institute for Tropical Diseases in Hanoi said.

http://smh.com.au/fximage/2006/02/15/swansbag_wideweb



Swan song … German vets in protective clothes put dead swans in a plastic bag on the Baltic Island of Ruegen.

Having read the article provided, we would now like you to imagine yourself as vividly as possible, in the following situation.

You are with a friend and you are watching the news on television. Your friend is optimistic, and is usually very sensible. He doesn't often overreact [Your friend is pessimistic and is not very sensible. He also sometimes overreacts]. The headline news story is about the threat of a major human flu pandemic reaching Australia. There is an interview with an influenza expert, and he argues that it is likely that avian influenza is already in Australia among wild bird populations. He believes that a human pandemic could occur by July 2006, and that if this is the case, it could kill millions worldwide, and put millions more in hospital. Your friend appears to be shocked and scared after watching this news story. You can see that he is concerned, and that he finds the whole situation to be very frightening [Your friend does not appear to be very shocked or scared after watching this news story. You can see that he is not concerned, and that he does not find the situation frightening].

Still imagining yourself in the situation described, we would like you to answer the following questions.

First, we would like you to answer some questions about your friend. There are no right or wrong answers. Please circle the number on the scale from 1 (not at all) to 9 (very much) that corresponds with your opinion.

To what extent do you think you can *trust* the reactions of your friend?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

To what extent is your friend *similar* to you? *[note: only included in Study 3b]*

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

After watching the news story:

How *fearful* is the reaction of your friend?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

Now we would like you to answer some questions about yourself. Again, please circle the number on the scale 1 (not at all) to 9 (very much) that corresponds with your opinion.

After watching the news story:

How *positive* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *threatened* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *comfortable* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *disgusted* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *fearful* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *surprised* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *frightened* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *tense* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *happy* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

How *scared* do you feel?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

NO LONGER imagining yourself in the previous situation, we would like to know about *your own* opinions on some issues.

Once again, please circle the number on the scale 1 (not at all) to 9 (very much) that corresponds with your opinion.

Are you concerned with animal welfare issues?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

Are you concerned with environmental issues in Australia?

(Not at all) **1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9** *(Very much)*

Thankyou for your participation

Study 3a: Control group scenario

Having read the article provided, we would now like you to imagine yourself as vividly as possible, in the following situation.

You are watching the news on television. The headline news story is about the threat of a major human flu pandemic reaching Australia. There is an interview with an influenza expert, and he argues that it is likely that avian influenza is already in Australia among wild bird populations. He believes that a human pandemic could occur by July 2006, and that if this is the case, it could kill millions worldwide, and put millions more in hospital.

APPENDIX D

Narrative coding protocol and response examples – Study 3b

Study 3b: Narrative coding protocol

For each of the 12 narrative points highlighted, determine the presence of :

Differentiation= 1

A response that explicitly contrasts the self from the friend. This can be focussed on responses (e.g., *'when watching the story I felt really scared about it, and then he didn't really react'*); on other attributes (e.g., *'he always overreacts and then I have to make him feel better afterwards'*); or can be a more general observation (e.g., *'I think we have very different ideas'*).

Other = 2
Any response that does not fit into the above category.

==========

For each of the 3 narrative points highlighted, determine the presence of :

Questioning = 1

Any response that questions the validity of the friend's response. This can reflect a questioning of their motivations (e.g., *'because he doesn't usually overreact and for him to overreact he might be joking and trying to scare me'*); a questioning of how they have interpreted the situation (e.g., '*I would be focussing on him, and why he's acting like this- I'd be wondering whether he's been effected by this, like through his family or something.'*); or a questioning of them as a person more generally (e.g., *'I think my friend's probably over-reacting –but I also think that he panics way too much, and he's not very reliable in that sense'*)

Acceptance = 2

A response that expresses that the friend's response provides a valid reflection of the situation. This can also be agreement with the response (e.g., *'I know him very well- he doesn't panic about anything, so he was calm through this situation as well, and I don't see it as a fearful situation either'*) a 'resolved' query (e.g., *'there was someone who was hearing the same news story and didn't get scared- so maybe I was overreacting'*); or a more general acceptance that their response could be relied upon (e.g., *'I would be able to infer things from their reactions, as to whether or not they were acting like themselves or not acting like themselves- because of past experiences that I've had with them'*)

Other = 3

Any response that does not fit into either of the above categories.

Study 3b: Coded response examples

High trust, High fear

Questioning

'I think it would be a bit a weird that he's acting so concerned because he's not generally an overreacting person- it must be a pretty serious issue for him I guess- he might've known someone overseas that could have been infected with the disease and now he's really scared'

'not so much fearful- more just concerning, so I'd say in the mid-range because I do sort of wonder why the reacted so strongly when they usually don't'

'I find it a little strange that a sensible person can get very concerned- I just wonder what sort of field this persons in and if they know anything about this – or um…if they have any history of people dying of illnesses or anything'

Acceptance

'given that they're not really someone who panics or is paranoid about things, then you would think that they wouldn't get worried unless it was something that they should actually get worried about'

'Um very much he's you know just very reliable – he doesn't ever overreact- he tends to think things through- he's kind of like an army guy – you know he just goes with what's actually happening rather than what people say might happen'

'I know him very well- he doesn't panic about anything, so he was calm through this situation as well, and I don't see it as a fearful situation either'

Differentiation

'he reacted a bit more strongly than I'd react to that news story'

'I do think he reacted a little bit too strongly to it'

'I don't feel as threatened as my friend did'

<u>High trust Low fear</u>

Questioning

'Because if I knew my friend and if I knew they were the kind of person who didn't show very much emotional response to anything- I would um, you know- infer how fearful I thought they were from what I knew their fears to be, not necessarily how they were reacting right at that moment. And I'm gonna say that if this person is my friend they've got- um, you know – a fairly good social conscience, and that they're gonna be, you know- slightly worried about this sort of thing, but not to the point where it's gonna stop them from living the rest of their lives so it's gonna be stored away in there somewhere'

'Well he's not showing any visual reaction so- but he's not someone who would panic- but then he could be - underneath it all- he could be quite fearful of it I guess- but then it did tell me that he didn't panic that much- I guess I'm gonna give

him a seven- I guess sometimes we feel more than we display- so there's only so much you can trust'

'but also I think it really depends on how much they know about things like that, and what experience they've had with science and all diseases and things, so it might just be that like the media is really – has really twisted it to make it seem scarier than it would be'

Acceptance

'there was someone who was hearing the same news story and didn't get scared- so maybe I was overreacting'

'well I guess as described they've got a history of being very stable and not overreacting so I guess I can trust their reactions to be predictable'

'comforted that I'm friends with someone that's not going to freak out over something that is not directly influencing our lives right at this very moment'

Differentiation

'he's not scared at all, and I think it's a, a subject that should, um, that should attract his attention'

'I'd perhaps begin to think that he was ignorant about it'

'I think I had a different response to that story than he exhibited so not at all actually- I think we were really quite different in that respect'

Low trust, High fear

Questioning

'I think my friend's probably over-reacting –but I also think that he panics way too much, and he's not very reliable in that sense'

'He's a real nutcase- he's got this real paranoia complex I tell you. from what I have heard he is just panicking, so there's no point in getting too- overly concerned about the whole situation'

'if he's going to overreact over every little thing- like terrorism or any other thing- this guys like going to be hiding under the bed- I mean this guys going to be reacting like that over a theoretical situation'

Differentiation

'it's sensible to them but not to me'

'their reaction was so strong- and my reaction wasn't big at all'

'initial reaction would be different- but I might've reacted more like him – oh – no – I don't think it was similar, I wasn't really very afraid'

Low trust, low fear

Questioning

'I don't think he was overreacting- he could have potentially been under reacting…quite surprised he's not concerned- I'd be a little concerned, but once again, because there doesn't seem to be anything much really happening around here so maybe it's from ignorance or having not known very much about this- or maybe even it sounds too much like science fiction- like one of those movies where they have those outbreaks – and maybe having watched too many of those movies he thinks it is unlikely'

'he's not fearful on the outside- but maybe very much on the inside'

'Well he didn't react very much- but he probably does have a general fear about it- I'm surprised that he's not that panicked, but maybe he's read stuff about this before so he's got his panic out of his system- maybe he's just in shock'

Differentiation

'when watching the story I felt really scared about it, and then he didn't really react'

'I did have a little- sort of a deeper feeling about what was going on globally, whereas they had no feelings towards that at all'

'I would be a little scared and fearful of the situation, while he is completely unconcern'