

Trust Heals, Commitment Hurts:
Disentangling Predictors of Coping with Interpersonal Betrayal

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Abstract

In the forgiveness literature, trust and commitment have each emerged as important predictors of outcomes following transgressions. However, their effects are usually estimated separately. Given that these variables tend to be highly correlated, and more importantly given the strong theoretical links between trust and commitment, one contribution that can still be made to the forgiveness literature is disentangling their effects. There has also been less investigation concerning the way in which these predictors affect short-term distress—using variables such as rumination and negative emotion as outcomes in their own right. In particular, detrimental associations of commitment with these variables were hypothesised.

Here, I investigate the effects of trust and commitment simultaneously, on both forgiveness and forgiveness-related negative emotions, in the wake of an interpersonal transgression. The research had two primary goals. Firstly, to concurrently examine the effects of trust and commitment on emotional reactions to an interpersonal transgression, examining the effects each had while statistically controlling for the other. A second goal was the investigation of mediating variables, to support or refute several proposed explanations for the effects which emerged.

Study 1 used a hypothetical design, where participants imagined a transgression being committed by their actual partner. Study 2 employed a recall approach, investigating the effects of trust and commitment using actual transgressions. Study 2 also broadened the context to include non-romantic relationships. Study 3 used a prospective design where trust and commitment were measured before the hurtful event occurred, to reduce the possibility of bi-directional associations. Across these three studies I found that, when controlling for commitment, higher trust was associated with less distress. However, when controlling for trust, higher commitment was associated with increased distress. Notably, these opposing effects did not occur when forgiveness was used as the outcome variable. The unique effects of trust on forgiveness were consistently beneficial. However, the unique

effects of commitment on forgiveness were less consistent, including a mix of non-significant and beneficial associations.

Several related explanations for these effects were proposed and tested. The beneficial effects of trust were found to be mediated by exploitation risk and responsibility/blame attributions. For the detrimental effects of commitment on distress, evidence refuted the suggestion that the observed effects were mediated by an increase in the value of the relationship. However, evidence provided partial support for the idea that, after controlling for trust, more committed individuals tended to be in relationships characterised by non-mutual dependence, and that this was able to explain the detrimental effects observed.

The primary limitations of the research are the need for further experimental investigation, and slight power concerns due to a high drop-out rate in Study 3. The research has useful implications for understanding the process and experience of betrayal and forgiveness, and accordingly is primarily of interest to forgiveness researchers and theorists. However, the work may also have some relevance for the broader literatures on conflict, trust, commitment, and adult attachment. Finally, it suggests avenues for better integrating the largely independent work on trust and commitment within the forgiveness literature.

Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

I give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

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Chapter 1: Introduction

One branch of the research on interpersonal conflict has focussed on identification of predictors; factors which make positive outcomes such as forgiveness more or less likely. In the forgiveness literature specifically, trust and commitment have each emerged as important predictors of outcomes following transgressions. However, the effects of predictors like trust and commitment are usually estimated in isolation, despite strong intercorrelations and links between these variables. Might evaluating these inter-related constructs separately be masking their unique effects?

The purpose of the research presented here is to explore this question, evaluating trust and commitment together in order to explore their unique effects on forgiveness and coping within interpersonal relationships. The work ultimately has three primary implications for answering this question. First, it shows that disentangling trust and commitment is advantageous by revealing opposing effects for these important predictors. Second, it shows that commitment can increase distress following transgressions, but the mechanism for these detrimental effects differs from predictions made in the literature. Finally, the work adds to suggestions that although trust and commitment are both beneficial, trust may be the more consistent and important predictor of interpersonal forgiveness.

The focus of the literature review in Chapter 1 is on empirical work which has examined forgiveness, trust and/or commitment within the context of interpersonal relationships; in addition to exploring relevant theories which might explain the associations identified. Studies of trust, commitment or forgiveness in the context of counselling or organisations are not generally within the scope of this document, although some concepts drawn from organisational psychology are included within the review of trust literature. Similarly, important bodies of work have focussed on forgiveness in settings such as counselling and therapy (Akhtar & Barlow, 2018), intergroup contexts (Van Tongeren et al., 2014), and self-forgiveness (Davis et al., 2015), however, these are also largely beyond the scope of the current research and literature review.

1.1 Overview of Forgiveness Research

Although it has traditionally been considered part of the theological and philosophical domains, forgiveness is a topic of growing interest in empirical psychology. Research on forgiveness has been based on a range of different theoretical perspectives; accordingly, a variety of definitions have been advanced for forgiveness. McCullough et al. (1997) define interpersonal forgiveness as:

The set of motivational changes whereby one becomes (a) decreasingly motivated to retaliate against an offending relationship partner, (b) decreasingly motivated to maintain estrangement from the offender, and (c) increasingly motivated by conciliation and goodwill for the offender, despite the offender's hurtful actions. (pp. 321-322).

Therefore, they define forgiveness in terms of underlying motivations toward revenge, avoidance, and benevolence. In a similar vein, Worthington and Wade (1999) define forgiveness in emotional terms, as the removal of negative and introduction of positive emotions toward an offender. Worthington (2005) suggests that forgiveness often entails a conscious decision to control one's behaviour. Enright et al. (1991) describe forgiveness more precisely as decreases in negative and increases in positive affect, cognitions, and behaviours toward an offender even though the offender may not deserve these changes. Baumeister et al. (1998) suggest that forgiveness entails "an effort to bring such feelings [anger and resentment] to an end and replace them with positive thoughts, feelings, and actions" (pp. 79-80). Furthermore, Exline and Baumeister (2000) highlight the interpersonal nature of forgiveness, regarding it as a cancellation of debt by the victim. Forgiveness has also been described as the construction of a 'new narrative' about the transgressor and the transgression (Thoreson, 2001).

Despite this diversity in classical definitions and perspectives on forgiveness, discussions on the topic also include a number of common elements. Forgiveness is seen as involving changes in emotion, cognition, motivation, and possibly behaviour toward an offender (e.g., Enright et al., 1996;

Gordon & Baucom, 1998; McCullough et al., 1997). A common theme in definitions of forgiveness is that it involves more than a reduction of negative feelings, but also involves a pro-social change in attitude (and possibly behaviour) toward the offender (McCullough et al., 2000). Similarly, another common theme is that forgiveness is a pro-social act, in which the offender receives something that may be undeserved (Enright & Fitzgibbons, 2000). Moreover, forgiveness typically (although not necessarily) incorporates both interpersonal and intrapersonal dimensions (Baumeister et al., 1998). Finally, most researchers and theorists agree that forgiveness is distinct from reconciliation (Metts & Cupach, 2007; Worthington, 2005), the continuation and restoration of relationships following a transgression. Accordingly, forgiveness can at times occur in the absence of an ongoing relationship, or vice versa.

The value of applying evolutionary theory to the study of human social behaviour has become increasingly recognised in recent years (Neuberg et al., 2010). As group-living animals, one of the major selection pressures in human history has been the ability to navigate an increasingly complex social world (Brewer & Caporael, 1990). Thus, evolutionary arguments have been used to explore the nature of human prosocial behaviours such as cooperation, altruism, and empathy. Notably, this interest in evolutionary social psychology has also extended to evolutionary perspectives on forgiveness (e.g., McCullough, 2008; McCullough, Kurzban, & Tabak, 2010). These theories tend to view forgiveness as part of an adaptive mechanism for managing relationships, and often emphasise the role of computational decision-making processes in determining whether forgiveness is warranted. Rather than viewing revenge as inherently dysfunctional as per some classical theories of forgiveness, these perspectives argue that forgiveness and revenge each exist because they solved important problems during our evolutionary history (McCullough et al., 2013).

Of particular interest within the field of social psychology is the identification of factors which promote or inhibit forgiveness following transgressions. In short, such research aims to investigate the factors underlying a decision to forgive or a decision not to forgive. A number of factors which are

beneficial for forgiveness have been identified by previous research (for meta-analyses, see Fehr et al., 2010; Riek & Mania, 2012), including personality, relationship, offence-specific, and social-cognitive factors. However, these various predictors have been studied largely in isolation, and empirical investigation into how different components of forgiveness might relate to one another has been limited in comparison. Given this fact, one contribution that can still be made to the forgiveness literature is disentangling the effects of key predictors of interpersonal forgiveness.

1.2 Interpersonal Trust

1.2.1 Overview of trust research

Examining views of trust across a range of authors and disciplines, Rousseau et al. (1998) define trust as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (p. 395). There are three key elements of this definition. Firstly, trust is a psychological state which will vary within a person as situations and relationships change (Schoorman et al., 2007), as opposed to an individual difference variable (e.g., Rotter, 1967); stable individual tendencies toward trust are usually referred to as *trust propensity* (Mayer et al., 1995) or *dispositional trust* (Simpson, 2007). Secondly, trust is most relevant when trustors must accept vulnerability in situations of risk (Deutsch, 1973) and interdependence (Kelley et al., 2003). Thirdly, trust is based upon positive expectations about the trustee’s character, intentions, and behaviour (e.g., Mayer et al., 1995). The origins of trust are thought to be the need for an adaptation to identify beneficial relationships and prevent against exploitation by group members (Tooby & Cosmides, 1992). Trust enables cooperation in relationships and groups by letting people believe that others will not take advantage of them (Balliet & Van Lange, 2013; Murray & Holmes, 2009). Finally, many trust theorists also emphasise that the nature and correlates of trust will change as relationships develop (e.g., Jones & George, 1998; Lewicki & Bunker, 1996; Lewis & Weigert, 1985; McAllister, 1995; Rempel et al., 1985; Shapiro et al., 1992).

Although the research reviewed above is drawn from more general and multidisciplinary research on trust, theories within social psychology have also explored more dyad-centered models. One such perspective comes from Holmes and Rempel (1989), who have explored trust in detail, with a particular focus on the development of trust over time and how pre-existing trust influences communication and attributions in relationships. For example, Rempel et al. (1985) identified predictability, dependability, and faith as key trust-related concerns. Predictability is grounded in the trustee's behavioural consistency, dependability in beliefs about the trustee's character, and faith in emotional security in a relationship. The model also argues that these bases of trust will be differentially relevant as relationships develop (Rempel et al., 1985); although later research does move away from predictability somewhat (Rempel et al., 2001). Trust is conceptualised as growing "in situations that allow for an unambiguous attribution of positive motives to the partner's behaviour" (Miller & Rempel, 2004, p. 696). Correspondingly, the role of attributions in trust judgments has also been a heavy focus of the theory (e.g., Holmes & Rempel, 1989; Miller & Rempel, 2004; Rempel et al., 2001). Finally, Holmes and Rempel's model of trust contains a strong individual-differences component, describing how relationships with high, medium or low levels of pre-existing trust will lead to different patterns of interaction in strain-test situations. For example, whereas high-trust dyads tend to focus on positive aspects of the relationship during difficult discussions, medium-trust dyads are more likely to make negative attributions, and low-trust partners demonstrate reluctance to make themselves vulnerable to the partner and may avoid engaging in difficult discussions (Rempel et al., 2001).

Central theories in interpersonal trust research also include interdependence theory (Kelley et al., 2003) and the mutual cyclical growth model (Wieselquist et al., 1999). Because each of these theories are discussed in detail during theoretical development of the thesis (specifically Chapters 1.5, 3.2, and 3.3), discussion of them here will be limited. Interdependence theory focusses on analysing the structure of a particular relationship rather than individual difference variables; in the context of trust, key structural features are argued to be interdependence between partners, the need for

coordination, and the existence of joint interests (Kelley et al., 2003). As with commitment, key theories of trust frequently have their roots in interdependence theory. This includes the mutual cyclical growth model, which suggests that trust forms as a response to observing pro-relationship transformation of motivation by a relationship partner. As will be discussed in Chapter 1.5, this perspective on trust also heavily implicates the role of commitment in the trust process.

Other perspectives which have contributed to knowledge on interpersonal trust include investigations based on attachment theory (Bowlby, 1969, 1973, 1980). For example, Mikulincer (1998) examined links between the attachment style of adult participants and experiences of trust. In addition to finding that trust levels differed according to attachment style, Mikulincer also found differences in the foundations of trust according to participants' attachment style, reflecting differences in coping strategies among these groups. Specifically, although all attachment groups displayed the trust-related goal of enhancing intimacy, anxious and avoidant individuals displayed the additional goals of feeling secure or feeling in control, respectively.

1.2.2 Links between trust and forgiveness

Links between trust and forgiveness have received a surprisingly limited amount of empirical investigation, although this has increased somewhat over time. Illustrating this point, trust does not appear in two meta-analytic investigations of forgiveness antecedents (Fehr et al., 2010; Riek & Mania, 2012). However, key forgiveness theorists have all implicated trust in the forgiveness process (e.g., Baumeister et al., 1998; Finkel et al., 2002; Gordon & Baucom, 1998; Worthington, 1998), and there are a range of theoretical reasons why trust may be relevant in the context of forgiveness.

Firstly, trust betrayal may be the factor which makes forgiveness relevant in the first place. Theorists have highlighted the importance of broken social norms for understanding betrayal and hurtful relationship events (Finkel et al., 2002; Metts & Cupach, 2007). If broken trust is what necessitates

forgiveness, restoring trust must surely be a key concern for those who seek to forgive. Ironically, trust may be both the trigger and the cure for feelings of hurt and betrayal following transgressions.

Second, as Deutsch (1973) noted, trust is most relevant in situations of vulnerability and risk. Forgiveness is one such risk. There is always a possibility that forgiveness will have undesirable consequences, such as condoning a partner's negative behaviours, displaying weakness, or encouraging repeat offending (Lamb & Murphy, 2002). Forgiving can make the victim feel vulnerable (Baumeister et al., 1998); therefore, trust in a partner should increase willingness to take the risk of offering forgiveness. When victims have concerns about being exploited in the future, forgiveness becomes less likely (Burnette et al., 2012). Adding to this line of argument, it has been shown that believing an offender is deserving of forgiveness (i.e., trusting them) makes forgiveness more likely to be beneficial (Strelan et al., 2016). Together, these findings and arguments highlight that trust is a useful tool for managing situations of risk and vulnerability, such as forgiveness.

Third, trust is an important means of resolving conflict. For example, Waldron and Kelley (2008) highlight the importance of positive communication in the forgiveness process. Trust encourages the use of positive communication strategies such as accommodative and collaborative responses, (Shallcross & Simpson, 2012). Therefore, trust should increase the quality of interactions that occur post-transgression. Additionally, high-trust couples tend to see conflicts of interest as opportunities to develop greater intimacy (Simpson, 2007), and compensate by viewing the partner more favourably after considering negative aspects of the relationship (Shallcross & Simpson, 2012), further increasing willingness to engage in conflict resolution following transgressions. By contrast, low-trust couples tend to experience greater distress during difficult discussions (Campbell et al., 2010), and may be more likely to avoid active conflict resolution. Trust appears to promote forgiveness by allowing relationship partners to communicate positively about a transgression. However, this is most effective when both partners are high in trust (Kim et al., 2015).

Fourth, trust influences the way that victims attempt to understand their partners. Researchers have examined how the victim's view of their partner may change following transgressions (Tabak & McCullough, 2011; Tabak et al., 2012), and the implications this will have for forgiveness. Similarly, the ability to take the offending partner's perspective has been shown to predict forgiveness (Fehr et al., 2010; Riek & Mania, 2012). Trust has a number of implications for the way in which individuals recall (Luchies et al., 2013) and integrate (Holmes & Rempel, 1989; Simpson, 2007) information about relationship partners. Previous research has also shown that high-trust individuals may compensate by viewing the partner more favourably after considering negative aspects of the relationship (Shallcross & Simpson, 2012). Consequently, restoring trust should encourage more positive interpretations of the offender's character and past behaviour.

Finally, forgiveness helps to heal and restore relationships after a transgression (e.g., McCullough, 2008). Given that trust is a key feature of healthy, functioning relationships (e.g., Fehr, 1988; Holmes & Rempel, 1989), restored trust must also be an important consequence of forgiveness, as well as an antecedent (e.g., Gordon et al., 2009; Patrick et al., 2013; Scherer et al., 2012; Wieselquist, 2009).

Trust is also theoretically or empirically related to many well-studied antecedents of forgiveness. Variables such as apology (Tomlinson et al., 2004; Tomlinson & Mayer, 2009), positive and negative emotion (Dunn & Schweitzer, 2005; Lount, 2010; Tomlinson & Mayer, 2009), and agreeableness (McCarthy et al., 2017) are all known to be relevant in the context of trust, as well as being important for forgiveness (Fehr et al., 2010; Riek & Mania, 2012). Therefore, it is possible that trust may mediate the associations between these variables and forgiveness. For example, Strelan et al. (2017) demonstrated that trust mediates the effect of closeness, a well-studied antecedent of forgiveness. McCullough, Kurzban, and Tabak (2010) noted that trust may be a proximate mechanism of forgiveness:

Trust may be a key psychological process by which . . . factors that cue benevolent intentions lower the likelihood of revenge and raise the likelihood of forgiveness People more readily forgive people whom they trust . . . and people who are reputed to be trustworthy . . . despite their recent bad behaviour. (p. 233).

Although links between trust and forgiveness have not been a strong focus in the empirical literature, a reasonable number of studies have reported correlations between trust and forgiveness in the wake of interpersonal transgressions. Such studies tend to show moderate to strong associations between trust in a partner and forgiveness. For example, Gordon et al. (2009) examined forgiveness following marital betrayals. For wives, trust was associated with both positive ($r = .55$) and negative ($r = -.71$) dimensions of forgiveness. Trust was also associated with positive ($r = .42$) and negative ($r = -.49$) dimensions of forgiveness for husbands. Similarly, Scherer et al. (2012) examined trust and forgiveness toward family members who misused alcohol. Trust was correlated with avoidance and revenge motivations ($r = -.62$), emotional forgiveness ($r = .60$), and decisional forgiveness ($r = .36$). In a scenario study involving transgressions committed by a family member, Breslin et al. (2017) found a correlation of $r = .53$ between trust and forgiveness. In a dyadic study of high and low trust partners, Kim et al. (2015) found links between trust and forgiveness. Specifically, Kim et al. found that trust influenced relationship closeness through both forgiveness and reduced contempt. Antonucci et al. (2018) found that trust mediated the effect of social network size on forgiveness among White Americans, but not among African Americans or Arab Americans.

Trust is also known to be relevant for forgiveness of workplace transgressions. Hui et al. (2011) examined trust and forgiveness following hypothetical workplace transgressions. Trust and forgiveness were strongly correlated after an initial transgression and apology ($r = .63$). Trust and forgiveness were even more strongly associated after participants were given feedback about the perpetrator's post-apology behaviour ($r = .89$). Similarly, Elangovan et al. (2007) examined forgiveness in workplace

relationships using a scenario design, measuring trust and forgiveness intentions before and after hypothetical transgressions. Elangovan et al. found strong correlations between forgiveness and post-transgression measures of both trust ($r = .70$) and distrust ($r = -.68$). In a similar vein, trust has emerged as one of the strongest predictors of intergroup forgiveness (Van Tongeren et al., 2014). Given the high correlations between trust and forgiveness in studies of interpersonal forgiveness, and the importance for forgiveness in other contexts, it is perhaps surprising that trust has not been given greater attention in predicting forgiveness within interpersonal relationships.

1.3 Commitment

1.3.1 Overview of commitment research

Commitment is commonly defined as “intent to persist in a relationship, including long-term orientation toward the involvement as well as feelings of psychological attachment” (Rusbult et al., 1998, p. 359). Based on this definition, it can be seen that commitment consists of motivational, cognitive, and affective elements (Arriaga & Agnew, 2001; Rusbult et al., 1998). The motivational component of commitment is intent to persist; individuals with high commitment will have the current goal and motivation to continue the relationship. The cognitive component of commitment is long-term orientation, describing individuals taking the long-term interests of the relationship into account when making decisions, and acting as though they will remain in it in the future. Finally, the affective component of commitment is psychological attachment; those in committed relationships will feel emotionally linked to their partner, and thus their wellbeing and satisfaction will be affected by the partners'. In general, theories of commitment also rest on the premise that commitment level will rely on balancing the rewards and costs associated with a particular relationship (Le & Agnew, 2003).

The most commonly drawn upon measures and model of commitment within forgiveness research come from the investment model of commitment (Rusbult, 1980, 1983). The investment model suggests that commitment level will primarily be based on three factors. First, the amount of *satisfaction*

level derived from the relationship will be an important predictor of feelings of commitment. Individuals will feel satisfied when they experience more positive and less negative affect due to the relationship. The second base of commitment is *quality of alternatives*; the desirability and availability of alternatives which might be able to fulfil needs as well or better than the current relationship. This can include not only alternative relationships of the same or different nature, but also any activity which might be preferable, including having no relationship. Third, the *investment size* and ties inherent to a particular relationship, such as time invested in getting to know the partner or financial entanglement, will be a motivator to remain in the relationship. This third factor helps explain why relationships often persist despite varied satisfaction and alternative available partners. Because one has invested in a particular partner, relationships are not interchangeable, and investment is therefore an important component of interpersonal commitment. Each of these bases have been found to uniquely contribute to predicting overall ratings of interpersonal commitment (Le & Agnew, 2003). Additionally, this meta-analysis of the investment model constructs showed that across a variety of interpersonal relationship types, satisfaction, quality of alternatives and investment size collectively accounted for most of the variance in ratings of subjective commitment. Commitment was also found to predict decisions about whether to stay in a relationship in this investigation; clearly an important benchmark for a theory of commitment.

Other key features of the investment model include a focus on dependence. The investment model was developed by extending tenets of interdependence theory (Kelley, 1979; Kelley & Thibaut, 1978; Thibaut & Kelley, 1959). The specifics of interdependence theory are discussed in more detail in Chapter 3.2, during theoretical development of the unique effects of trust and commitment. The salient feature of interdependence theory is a focus on analysing the structure of a particular relationship rather than individual difference variables. Unsurprisingly, dependence is also a central concept of the theory. Dependence has been defined as “the degree to which an individual relies on a relationship for the fulfillment of important relationship needs” (Rusbult & Van Lange, 1996, p. 569), or the extent to which partners rely upon one another uniquely to satisfy these relationship needs. In other words,

dependence is a structural description of relationships, which measures reliance on a partner for need fulfillment (Le & Agnew, 2001). Extending interdependence theory, the investment model argues that commitment results from increasing dependence on a relationship. In other words, commitment functions as a barometer that assesses one's structural dependence on a relationship, to guide decision-making. Therefore, commitment is the subjective experience and representation of dependence (Agnew et al., 1998; Rusbult et al., 1998).

Another key perspective which has influenced theorising related to commitment comes from accommodation theory (Rusbult et al., 1991). Accommodation theory describes ways individuals might respond when relationship partners behave in a destructive manner, arguing that the default preference is to respond similarly, but that long-term goals and interdependence between individuals can cause people to instead react constructively. Rusbult et al. (1991) demonstrated that the impact of a range of other variables on accommodation is largely mediated through feelings of commitment. Due to the overlap with interdependence theory and forgiveness processes, accommodation theory has also contributed significantly to work on relationship conflict and interpersonal commitment (e.g., Finkel et al., 2002).

1.3.2 Links between commitment and forgiveness

Compared to the trust-forgiveness link, the association between commitment and forgiveness has enjoyed a greater focus in the literature. A substantial number of studies have reported associations between commitment and level of forgiveness within interpersonal relationships (e.g., Finkel et al., 2002; Karremans et al., 2003; Karremans & Van Lange, 2004; McCullough et al., 1998). Unlike trust, the effects of commitment were also included in two meta-analyses of forgiveness predictors. Fehr et al. (2010) reported a main effect of commitment on forgiveness of $r = .20$ (Fehr et al., 2011). In a subsequent meta-analysis, Riek and Mania (2012) reported a somewhat larger value of

$r = .34$. Finkel (2016) reported a similar correlation between commitment and forgiveness to that of Fehr et al. (2010), based on further analysis of replication studies run by Cheung et al. (2016).

Karremans et al. (2011) have shown that the related concept of relationship closeness predicts forgiveness cross-culturally, although some differences in the magnitude of this link were found based on collectivistic orientation. Closeness can be defined as a sense of overlapping selves and perceptions of interconnectedness with another person (Aron et al., 1992), mirroring key features of commitment. Indeed, forgiveness authors often discuss closeness and commitment as synonymous or strongly overlapping constructs (e.g., Karremans et al., 2011; Strelan et al., 2017). Of course, forgiveness is not without its darker sides, and commitment has been shown to predict forgiveness within abusive relationships as well (Gilbert & Gordon, 2017). Like trust, commitment has also been investigated as a consequence of forgiveness (e.g., Tsang et al., 2006; Ysseldyk & Wohl, 2012), mirroring research by Wieselquist (2009) who conceptualised commitment as a slightly more distal consequence of observing a partner's forgiveness.

Taken together then, there is strong evidence that commitment and forgiveness do co-occur in relationships, and compelling arguments for why this link may exist. Various explanations for the commitment-forgiveness link have been proposed. One explanation is that commitment serves as a gauge about future value and benefits in the relationship (e.g., McCullough et al., 2013). Relationships with higher perceived value have indeed been shown to enhance forgiveness (Burnette et al., 2012). On this view, forgiveness may be enacted as a means to protect future gains associated with the relationship, and reflects the long-term focus exhibited by committed individuals (Finkel et al., 2002; McCullough et al., 1998). A second related possibility is that commitment instead motivates forgiveness by highlighting the existing investment in the relationship and activating concerns about what will be lost should the relationship end. Comparing gain and loss focussed motivations for forgiveness, Molden and Finkel (2010) found that commitment was more strongly associated with forgiveness when the decision was based on concerns about loss. Third, commitment is associated with shifts from an "I" orientation to

a “we” orientation, incorporating the partner into the concept of the self (Agnew et al., 1998). Therefore, in committed relationships, sacrifices to benefit the partner become less aversive. In fact, Karremans and Aarts (2007) have shown that in close relationships, forgiving can become an automatic or default response. Finally, Karremans et al. (2003) have argued that the psychological tension associated with maintaining unforgiveness in committed relationships may be a specific mechanism by which the commitment-forgiveness link operates.

Despite the strong evidence and theory behind the association of commitment and forgiveness, one current research gap is a lack of evidence for the causal nature of this link. Finkel et al. (2002) presented initial evidence that priming feelings of commitment increased forgiveness. However, a registered replication report by Cheung et al. (2016) found no effect of the priming manipulation on forgiveness. Notably, the priming manipulation also failed to influence manipulation-check measures of commitment in Cheung and colleagues’ replications. Accordingly, these results do not show that commitment lacks a causal influence on forgiveness; instead, they merely suggest that this link has not been able to be clearly demonstrated by that manipulation. As discussed earlier, there is good evidence from other sources that commitment and forgiveness are correlated. However, given the lack of clear demonstration of the causal effects of commitment, the possibility remains that other variables such as trust may be partly responsible for the association between commitment and forgiveness (e.g., Laifa et al., 2018; Strelan et al., 2017). Taken together, these findings further reinforce the need for considering commitment alongside related variables like interpersonal trust.

1.3.3 Does commitment increase distress?

Although commitment appears to be beneficial for forgiveness, indirect suggestions that the effects of commitment could be more complicated may also be found in the literature. For example, it has been suggested that commitment may make transgressions more hurtful and difficult to cope with (e.g., Cann & Baucom, 2004; Karremans & Van Lange, 2004; Strelan et al., 2017; Weigel et al., 2015).

Seminal papers on commitment such as Finkel et al. (2002) have suggested that trust breaches in more committed relationships could be more distressing initially due to greater investment in the relationship. In other words, commitment may have detrimental short-term effects on distress and negative emotion following transgressions.

Empirical support for this line of argument can be found as well. Simpson (1987) found that the dissolution of marriage was more painful in more committed relationships. McCullough, Luna, et al. (2010) found that commitment and the painfulness of a transgression were correlated at $r = .31$. Molden and Finkel (2010) have shown that priming concerns about loss is associated with increases in the importance of commitment following an interpersonal transgression. The argument that psychological tension is a consequence of high commitment also suggests that commitment may exacerbate unpleasant emotional states in the wake of a transgression (Karremans et al., 2003; Rusbult et al., 1991).

However, one important qualification should be made in advancing these arguments. Although some papers have indeed found zero-order correlations between commitment and hurtfulness as outlined above, there may also be reasons to expect that these will not always emerge without first controlling for trust. Murray and Holmes (2009) point out that people high in trust may not feel worse due to valuing the partner more, because they are also confident that valuing them is safe. Essentially, they argue that because commitment and dependence tend to be accompanied by increased trust, the links between commitment and distress may be muted. This is a reasonable line of argument which helps explain the strong focus in this thesis on controlling for trust when considering the effects of commitment. The distress-focussed outcome variables described in the next section will allow for exploration of any detrimental associations, adding to the literature on the effects of interpersonal commitment.

1.4 Other Outcome Variables

In addition to focussing on forgiveness, this research also examines four other outcome variables; hurtfulness, negative emotion, psychological tension, and rumination. These variables have each been shown to be important in the context of forgiveness; but the majority are more commonly used to predict forgiveness. These variables were chosen as they assess the more immediate negative effects of a betrayal on victims, and the unifying theme of these outcome variables is the existence of unpleasant emotional experiences related to the transgression. Inclusion of these variables allowed for a broader assessment of the unique effects of trust and commitment following an interpersonal transgression, beyond just their impacts on forgiveness specifically. More specifically, these variables were included to assess the possibility that commitment may have detrimental effects on distress and negative emotion as outlined above.

Discussion of these variables has been delayed by necessity until after presenting arguments for the detrimental effects of commitment on distress. However, this is not intended to convey a lesser focus on distress and negative emotion as outcomes. Exploring the unique effects of trust and commitment on distress was a major motivator of the studies presented here; particularly the suggestion that commitment would display detrimental associations with short-term negative emotion. Accordingly, these four outcome variables are at least as important as forgiveness for the overall thesis. Highlighting this point, Study 3 focussed solely on these measures of distress as outcome variables, exploring unanswered questions from Studies 1 and 2 regarding the detrimental effects of commitment.

1.4.1 Hurtfulness

Unsurprisingly, the severity of a transgression has emerged as a useful predictor of forgiveness (Fincham et al., 2005; McCullough et al., 1997, 1998, 2003). Severe transgressions appear to influence forgiveness by having a larger and more disruptive initial impact on the victim. McCullough et al. (2003) found that harm severity was related to initial levels of unforgiveness, but not to the rate of forgiveness

over time. Fincham et al. (2005) examined both objective and subjective markers of severity, finding that each had independent utility in predicting forgiveness. Finally, meta-analytic investigations have also supported the detrimental impact of harm severity on forgiveness (Fehr et al., 2010; Riek & Mania, 2012). Given the importance of severity in the forgiveness literature, a measure of hurtfulness will be included to assess subjective severity, evaluating participants' ratings of the harm and suffering caused by a transgression.

1.4.2 Negative emotion

It is perhaps trivially true that victims will experience negative emotions in the wake of an interpersonal betrayal. However, negative emotions have also been conceptualised as a predictor of forgiveness. Theories of decision making often highlight the important role of emotion in guiding behaviour (e.g., Damasio et al., 1991; Martin et al., 1993), suggesting that emotional experiences are likely to have bi-directional associations with forgiveness and related variables. Unsurprisingly, negative emotions such as anger, bitterness and anxiety have been shown to be closely related to the amount of forgiveness experienced, in both individual studies (McCullough et al., 2003; Takaku, 2001, 2006) and meta-analyses (Fehr et al., 2010; Riek & Mania, 2012). Research has also shown that incidental emotions can influence trust judgements as well as forgiveness (Dunn & Schweitzer, 2005), making the assessment of negative emotions a useful inclusion due to established links with both variables.

1.4.3 Psychological tension

Psychological tension is "a psychological state of discomfort due to conflicting cognitions and feelings" (Karremans et al., 2003, p. 1013). This construct includes similar concepts to cognitive dissonance (Festinger, 1957), but has a stronger focus on the unpleasant affective states associated with inconsistent thoughts and feelings. Karremans et al. (2003) argue that the psychological tension associated with maintaining unforgiveness in committed relationships may be a specific mechanism by

which the link between commitment and forgiveness operates (see also Karremans & Van Lange, 2008). Because of the negative affective states associated with unforgiveness in committed relationships, Lawler-Row et al. (2011) further propose that psychological tension may help explain the detrimental health effects of sustaining unforgiveness. Given the connections to commitment this is a useful variable to include for the thesis, considering the focus here on exploring the effects and mechanisms of commitment. The argument that psychological tension is a consequence of high commitment also suggests that commitment may exacerbate certain unpleasant emotional states in the wake of a transgression. Including psychological tension alongside our other outcome variables will allow assessment of this possibility as well.

1.4.4 Rumination

Rumination has been defined as a “passive and repetitive focus on the negative and damaging features of a stressful transaction” (Skinner et al., 2003, p. 242). In the context of interpersonal transgressions, ruminating involves an obsessive focus on the details of a betrayal, causing victims to relive and hold onto features of the transgression. Rumination has been linked to decreased forgiveness in both cross-sectional (McCullough et al., 1998) and longitudinal research (McCullough et al., 2001, 2007; but see Wenzel et al., 2010). Unsurprisingly, excessive rumination about a transgression has also been linked to poorer psychological health and wellbeing (Berry et al., 2005; Ysseldyk et al., 2007). The reason for the association between rumination and the negative outcomes described above appears to be increased anger (McCullough et al., 2007). Appearing in two meta-analyses of forgiveness predictors (Fehr et al., 2010; Riek & Mania, 2012), rumination has been an important concept in the literature, and is the fourth alternative outcome variable which will be examined in this thesis.

1.5 Why Study Trust and Commitment Together?

Many variables in social psychology might be expected to interact in a complex manner; therefore, it is worth providing an additional explanation of why I have focussed on a simultaneous investigation of trust and commitment specifically. Two arguments have already been outlined above. Firstly, given the current lack of evidence for the causal effects of commitment, it is possible that trust may partially account for its effects, as has been found by recent investigations (Laifa et al., 2018; Strelan et al., 2017). Secondly, it has been suggested that possible detrimental effects of commitment may be muted at the zero-order level by its association with trust (Murray & Holmes, 2009).

A third reason to consider trust and commitment simultaneously is specific suggestions by key authors who have examined these constructs. For example, in an investigation into the role of trust and commitment in forgiveness, Molden and Finkel (2010, p. 265) suggest that “future studies could explore whether different components of trust and commitment motivate forgiveness in different ways”. Similarly, in a seminal review of the trust literature, Simpson (2007) highlights the utility of considering commitment in future research on trust. Other authors who have examined both trust and commitment have made similar recommendations (e.g., Wieselquist et al., 1999).

However, perhaps the most compelling reason to examine trust and commitment in conjunction is the strong links between trust and commitment in theories about relationship dynamics. Several theories of commitment include discussion of the role of trust, and vice-versa. For example, interdependence theory highlights both commitment and mutuality of commitment as important contributors to the health of a relationship (Drigotas et al., 1999). On the basis on both empirical findings and interdependence theory, Drigotas et al. (1999) suggest that relationship partners ought to track their partner’s level of commitment; and that trust appears to be a mechanism for this. In another theoretical model also based in interdependence theory, Wieselquist et al. (1999) outline the mutual cyclical growth model of relationships, which describes how commitment and trust interact to enhance pro-relationship behaviour. Wieselquist (2009) expanded this concept into the context of forgiveness,

stating that “trust serves as an implicit gauge of the partner’s commitment to the relationship” (p. 535). Turning to theories which have a somewhat stronger focus on trust, Murray and Holmes’ (2009) risk regulation model also integrates trust and commitment, stating that trust regulates the motivation to self-protect, whereas commitment regulates the motivation to behave selfishly. Under this theory, trust and commitment form a joint system which functions to regulate dependence across partners.

The specifics of the role of trust and commitment in these theories will be outlined in more detail in Chapter 3, during theoretical development and explanation of the effects identified by Study 1. However, for the purposes of this introduction, the point is that given the shared suggestion and evidence from these authors that trust and commitment form a mechanism for evaluating and regulating dependence in relationships, it makes sense to consider the impact of trust and commitment in conjunction in order to better estimate their unique effects.

Before examining existing research which has considered both trust and commitment, it is worth clarifying one further point. Given strong theoretical links and inter-correlations between them, whether trust and commitment represent distinct constructs might be questioned. Although these constructs do tend to co-occur, they are theoretically distinct and can at times appear separately. Social relationships are a fundamental human need (Baumeister & Leary, 1995). Because of the evolutionary necessity of co-operating with others (Brewer & Caporael, 1990), it is unsurprising that humans would require mechanisms such as trust which closely regulate involvement in relationships. However, given the extreme importance for humans of maintaining close relationships, it is equally unsurprising that people would sometimes enter relationships without this assurance.

Unfortunately, it is not uncommon for individuals to enter and remain in committed relationships characterised by low trust. At the milder end of the spectrum, anxious attachment styles are characterised by commitment to the partner but also intense concerns about the partner’s intentions (Hazan & Shaver, 1987). Of course, in extreme cases, individuals may exhibit high commitment to relationships characterised by abusive or violent behaviour (Edwards et al., 2011).

In a similar vein, relationships may be characterised by trust but not commitment. As commitment tracks long-term orientation toward a relationship, this is perhaps best exemplified by the existence of short-term relationships. For example, casual romantic relationships or short-term work partnerships may be characterised by trust in the partner's benevolence and motivations, but without a corresponding intent to continue the relationship. Although trust and commitment do tend to co-occur, the fact that they can also appear separately attests to the distinct nature of these related constructs.

1.6 Research Examining both Trust and Commitment in the Context of Forgiveness

In this section, I will discuss research which has included both trust and commitment in studies of interpersonal forgiveness. Given the strong theoretical links between trust and commitment discussed previously, and the importance of each in the forgiveness literature, the aim of this section is to review evidence which might hint at what the unique effects of trust and commitment on forgiveness are.

A mere handful of studies have explicitly set out to evaluate aspects of trust and commitment simultaneously in predicting forgiveness. Amongst authors who have specifically focussed on both variables, one key paper is that of Molden and Finkel (2010). Molden and Finkel hypothesised that concerns about trust and commitment would be differentially relevant according to the motivation for granting forgiveness. An initial investigation showed that trust (but not commitment) was related to participants choosing to forgive to maintain future benefits from the relationship (promotion-focus). On the other hand, commitment (but not trust), was related to participants' choice to forgive to avoid losing their existing investment in the relationship (prevention focus). In an experimental study which primed either promotion or prevention motivation among participants, Molden and Finkel found no effect of commitment on forgiveness in the promotion-focussed condition, and no effect of trust on forgiveness in the prevention-focussed condition. Similar results were found in a final study, which measured promotion- versus prevention-focus rather than manipulating it. Simple slopes analysis following various

regression analyses showed that commitment was related to forgiveness only among those with strong prevention motivations. Conversely, trust was generally related to forgiveness only for those with strong promotion motivation; although a reduced association between trust and forgiveness remained in one analysis.

Molden and Finkel (2010) speculate about the theoretical reasons for these effects, and the links to other theories. Although the hypotheses regarding promotion and prevention focus are more specific than the current investigation, for the purposes of the current review, the salient finding of this work is the demonstration that trust and commitment can be disentangled and shown to have different associations with forgiveness. Given this fact, the authors recommend that future research should seek to disentangle these variables. This work also has clear ties to later work on relationship value and exploitation risk (e.g., Burnette et al., 2012), suggesting that these constructs may also be useful in understanding differences in the effects of trust and commitment. These theories and constructs will be explored in more detail in Chapter 3.1.

Luchies et al. (2013) compared commitment and trust as predictors of various outcome variables, as part of an investigation which focussed on trust as a predictor of memory biases in recalling transgressions. Most relevant to this thesis, trust predicted memory biases regarding forgiveness, sadness, and anxiety, whereas commitment was not generally associated with these outcomes in confound analyses. In fact, the only significant correlation found for commitment was in the opposite direction than predicted, suggesting that commitment was associated with negative memory biases regarding forgiveness, although this finding was not consistent across multiple studies. Meta-analysing their own confound analyses, Luchies et al. drew similar conclusions to the individual findings; trust was found to predict memory biases about transgressions, but commitment was not a significant predictor when also included in the model. However, it is important to note that although the outcome variables for these analyses appear to be the same as the present thesis (i.e., forgiveness, sadness and anxiety), the analyses in Luchies et al. controlled for the corresponding initial report when

conducting regression analyses. For example, rather than predicting forgiveness per se, Luchies et al. used trust to predict *changes* in forgiveness. Accordingly, these findings still have some relevance, but the constructs used as outcomes are slightly different than the scope of the current thesis. Most importantly however, this work converges with other studies in showing that when trust and commitment are examined simultaneously, they exhibit divergent effects, with trust seeming to be responsible for the positive effects on forgiveness. Also noteworthy is the fact that the explanation for the effects of trust involved balancing dependence with risk of exploitation, sharing themes with the arguments from Molden and Finkel (2010) outlined previously.

Wieselquist (2009) expanded earlier research on the mutual cyclical growth model of relationships (Wieselquist et al., 1999) to include the concept of forgiveness. Viewing forgiveness as a relationship maintenance behaviour, Wieselquist suggested that observing a partner's forgiving responses would enhance trust, since forgiving implies that the partner is motivated to remain in the relationship. In turn, enhanced trust would increase dependence on the partner, and subsequently one's own commitment level. Structural modelling revealed good support for the key features of the model outlined above. Since this research examined trust and commitment as consequences of forgiveness rather than predictors, it has limited relevance to the current goal of exploring the unique effects of these variables on forgiveness. However, the mutual cyclical growth model from Wieselquist and Wieselquist et al. (1999) includes extensive discussion of the theoretical links between trust and commitment, and hence will be discussed further in Chapter 3.3.

A fourth study which has evaluated the effects of trust and commitment on forgiveness simultaneously is work by Laifa et al. (2018). Laifa et al. investigated interpersonal forgiveness in the context of transgressions which occur online. Among other predictors, the structural equation model evaluated included both trust and commitment as predictors of forgiveness. Notably, when both variables were included together, only trust retained a significant direct effect on forgiveness. This research is particularly notable since, unlike the previous studies reviewed, the differential effects of

trust and forgiveness were not dependent on a third contextual factor, and could be observed merely by including both trust and commitment as predictors.

A study by Brann et al. (2007) examined forgiveness of parents by their adult children, exploring whether trust, commitment and satisfaction were higher at different stages on the forgiveness process. Results did support this assertion, with trust and commitment scores generally increasing throughout the forgiveness process. However, Brann et al. did not focus on associations between these variables; correlations between trust and commitment or speculation about links between them do not feature in the research. Accordingly, this paper is of limited relevance in understanding the unique contributions of trust and commitment to forgiveness.

Finally, Study 3 of Strelan et al. (2017) demonstrated that trust partially mediated the association between scores on a measure of commitment and interpersonal forgiveness. Although this analysis does generally corroborate the other studies listed here (e.g., Laifa et al., 2018), the data from Study 3 of Strelan et al. (2017) is the same dataset as Study 2 of this thesis, as outlined in Chapter 4. As such, the findings of Strelan et al. (2017) cannot be viewed as strong additional evidence regarding the unique effects of trust and commitment, over and above the work presented here. Review of this paper is largely included in this section for the sake of comprehensiveness.

In summary, empirical literature which has focussed on both trust and commitment in predicting responses to interpersonal transgressions is scarce. However, reviewing the studies in this section does reveal common themes. Firstly, when both trust and commitment are included simultaneously in predicting forgiveness and relevant outcomes, trust appears to be the superior predictor, with the unique variance attributable to commitment generally being non-significant, and occasionally being negative. Secondly, similar themes emerge in many of the proposed theoretical explanations for these effects. These will be discussed in more detail in Chapter 3.

1.7 Research Goals

As argued above, trust and commitment have each emerged as important predictors of outcomes following transgressions in interpersonal relationships. However, fewer studies have estimated their effects simultaneously. Therefore, the general aim of this thesis was to disentangle trust and commitment, examining the unique effects each has on forgiveness and distress-related outcomes, by statistically controlling for the other variable. Given the reasons for considering them in conjunction outlined in Chapter 1.5, it was hoped that this investigation would prove informative about the mechanisms behind each of their effects in the context of interpersonal conflict and forgiveness.

More specifically, the first research goal was to evaluate the unique effects of trust and commitment on forgiveness. Based on studies showing that trust may account for the effects of commitment (e.g., Laifa et al., 2018; Strelan et al., 2017), it was expected that trust may partially or completely account for the association between commitment and forgiveness of an interpersonal transgression. Of the studies reviewed in Chapter 1.6, only Laifa et al. (2018) estimated the unique effects of both trust and commitment, but this was in the specific context of online transgressions. Therefore, investigating the unique effects of trust and commitment across a broader range of studies and contexts represents a novel contribution of this thesis.

A second research goal was to examine the unique effects of trust and commitment on hurtfulness, negative emotion, psychological tension, and rumination, to gain insight into how trust and commitment each alter the subjective experience of betrayal in the short-term. In particular, as outlined in Chapter 1.3.3, it was expected that commitment may exhibit detrimental unique associations with these measures. By also examining their unique associations with these four outcome variables, I hoped to gain a clearer understanding of how trust and commitment might each contribute to process and experience of forgiveness. Given that previous studies have not examined the unique associations of trust and commitment with measures of short-term distress, this represents a second novel contribution of the current work.

Finally, if any differential effects of trust and commitment were identified, the third research goal was to investigate why these effects occurred. The purpose of this third goal was to move beyond identifying and describing the unique effects of trust and commitment and provide an explanation, investigating potential mechanisms as part of the process of teasing apart these inter-related predictors of coping and interpersonal forgiveness. Previous studies have not attempted to explain why trust and commitment would have divergent effects. Therefore, identifying mechanisms and explanations for these associations represents a third novel contribution of this thesis. Chapter 3 presents further theoretical development of why trust and commitment should have divergent effects. However, these unique effects first needed to be described empirically. In the following chapter, I outline Study 1 of this thesis, presented as an initial investigation and description of the unique effects of trust and commitment.

Chapter 2: Study 1

The goal of Study 1 was to concurrently examine the effects of trust and commitment on forgiveness and emotional reactions to an interpersonal transgression, examining the effects of each while statistically controlling for the other. For my preliminary investigation into these effects, I conducted a hypothetical study, where participants imagined a transgression being committed by their actual partner. One advantage of this approach over a recall study is that it allowed me to measure trust and commitment in the partner before presenting the transgression scenario, ensuring that the transgression was not influencing participants' ratings of trust and commitment. Thus, although this first study did not investigate the effect using actual transgressions, it was a simple way to test the unique effects of trust and commitment with measures administered before an offence was presented to participants. Examining the mechanisms behind any effects identified was outside the scope of this initial study. As a preliminary investigation, the focus was on estimating the unique effects of trust and commitment, to enable further literature review, theory and tests regarding their causes and mechanisms in subsequent studies within the thesis.

2.1 Method

2.1.1 Participants

281 participants from the United States and Canada completed the survey. As the study had a small financial incentive, I made sure participants were actually reading the survey material by asking a simple question about the story they had read (as described in the measures section). 46 participants were excluded from further analysis because they provided an incorrect answer to this question. Therefore, 235 responses were retained for analysis (157 women, 78 men; $M_{age} = 37$, $SD = 11.47$).

Because the literature did not provide clear expectations regarding the magnitude of partial correlations, sample size for this study was based on the smallest bivariate correlations presented in Chapters 1.2.2 and 1.3.2. An a priori power analysis using G*Power 3.1 (Faul et al., 2007) indicated

that a minimum of 153 participants would be needed to detect bivariate correlations of $r = .20$ with power of .80 and an alpha of .05. With 235 participants and an alpha of .05, the actual power achieved to detect bivariate associations of this magnitude was .93, supporting the adequacy of the final sample.

2.1.2 Procedure and measures

In order to examine the effects of trust and commitment on reactions to the hypothetical transgression scenario, I conducted the study via a crowd-sourcing website, CrowdFlower (now called FigureEight). Participants were paid around US\$1 for completing the survey, although this amount varied slightly depending on the website they used to access the task (CrowdFlower displayed tasks across a number of different platforms, each with different additional incentives). To be eligible for the study, participants had to be involved in a current romantic relationship. Ethics approval was obtained from the University of Adelaide's Human Research Ethics Committee prior to commencing the study.

Increased use of crowdsourcing platforms for participant recruitment has led researchers to examine how crowdsourced samples compare to other methods of data collection. The majority of studies have examined the characteristics of Amazon's Mechanical Turk (MTurk), although there is some data available on the characteristics of CrowdFlower participants as well (Peer et al., 2017). In general, although there are some differences between MTurk and other samples (Bartneck et al., 2015; Goodman et al., 2013; Levay et al., 2016), results obtained using crowdsourced samples have been shown to be reliable (Buhrmester et al., 2011; Goodman et al., 2013; Sheehan, 2018) and produce similar findings to traditional samples (Bartneck et al., 2015; Gosling et al., 2004). In many cases, crowdsourced samples can offer distinct advantages. For example, crowdsourced participants are likely to be more ethnically diverse than those recruited using other methods (Buhrmester et al., 2011; Gosling et al., 2004; Sheehan, 2018).

Evaluating the characteristics of CrowdFlower users specifically, Peer et al. (2017) found that CrowdFlower participants were more diverse and less dishonest than participants from MTurk.

However, CrowdFlower participants also failed more attention check questions than MTurk participants, suggesting that they may not pay as close attention to the study materials. For this reason, I included an attention check item in the survey as recommended by Goodman et al. (2013), to screen out any participants who were not reading the survey.

To personalize the survey, participants began by writing their partner's name in a textbox, which would automatically appear thereafter where relevant. They also answered several questions about the relationship with their partner; the nature and duration of the relationship, and the partner's gender. Following this, they responded to a number of measures. These scales are presented below, in the order in which they were seen by participants. Unless otherwise indicated, items used seven-point scales with the labels "strongly disagree", "disagree", "slightly disagree", "neither agree nor disagree", "slightly agree", "agree", and "strongly agree". Additionally, unless otherwise indicated, multi-item scales or subscales were averaged to produce an overall score, with negatively worded items being reverse-scored. Finally, the wording of some published measures was altered slightly to reflect the hypothetical nature of this study (e.g., "I would feel..." instead of "I feel"). This is indicated in the description of these measures.

Dispositional trust: The general tendency to trust others was measured using the Trust Propensity scale from Mayer and Davis (1999). This measure consists of eight items ($\alpha = .72$). Example items include "one should be very careful with strangers" (reverse scored), and "most people can be counted on to do what they say they will do".

The Trust Propensity scale and its validation were originally presented in an unpublished paper (Schoorman et al., 1996). The scale was later published by Mayer and Davis (1999); this paper also included the alpha values from Schoorman et al. (1996). These studies demonstrated that the Trust Propensity scale has generally good reliability, with Mayer and Davis reporting an alpha value of .71 from the Schoorman et al. (1996) paper. Although lower values of .55 and .66 were found for the Mayer and Davis validation itself, these values were investigated and attributed to specific features of that

study (in addition to the relatively short length of the scale). A review of trust measures (McEvily & Tortoriello, 2011) recommends the scale as one of the more well validated and replicated measures available. Additionally, a meta-analysis (Colquitt et al., 2007) found that an individual's general propensity to trust predicted outcomes above and beyond the effects of trust in a specific other, making dispositional trust useful to include as a control variable alongside the primary measures of dyadic trust.

Attachment style: Participants' attachment style was measured using the Experiences in Close Relationships-Relationship Structures questionnaire (ECR-RS; Fraley et al., 2011). This measure consists of two subscales: attachment avoidance (six items; $\alpha = .83$), and attachment anxiety (three items; $\alpha = .88$). Example items include "I prefer not to show others how I feel deep down" (attachment avoidance), and "I'm afraid that other people may abandon me" (attachment anxiety). The ECR-RS was included because of the importance of attachment theory in research on interpersonal trust (Simpson, 2007), making attachment style a useful control variable.

Fraley et al. (2011) reported good alpha values for the ECR-RS; .88 for the avoidance scale in both studies, and .85 and .80 for the anxiety subscale—comparable to longer measures of attachment style (e.g., Fraley & Shaver, 2000). The fact that the ECR-RS is considerably shorter than other measures of attachment while maintaining similar psychometric properties made it ideal for the current study, as survey length was a concern. Fraley et al. also performed factor analysis on the scale and found the two-factor structure present in other attachment measures. Finally, the ECR-RS had correlations with measures of relationship quality and personality that were comparable to longer measures of attachment, supporting its construct validity (Fraley et al., 2011). A secondary advantage of the ECR-RS over many other published measures is that it is not specific to romantic relationships, allowing use of the same attachment measure across multiple studies.

Partner-specific trust: Trust in the current partner was measured using the Dyadic Trust Scale (DTS; Larzelere & Huston, 1980). This measure consists of eight items ($\alpha = .93$). Example items

include “X is truly sincere in his/her promises”, and “X is primarily interested in his/her own welfare” (reverse scored).

The DTS was one of the earliest measures to assess trust within a specific relationship, and was comprehensively validated in its initial publication. Larzelere and Huston (1980) reported an alpha value of .93 in their original validation. The items in the DTS were selected to have no relation to social desirability, using Jackson’s (1971) Differential Reliability Index. Across two studies, the DTS was related to love, self-disclosure, and commitment, but had little overlap with dispositional trust, demonstrating concurrent and discriminant validity. Principal component analysis confirmed that the DTS measures a single underlying construct. Similar results were found by Gabbay et al. (2012), who re-tested the properties of the DTS in a study on same-sex relationships.

Partner-specific trust: Since partner-specific trust was a primary focus of the research, multiple measures were employed, to ensure redundancy in case there was an issue with a particular measure. Therefore, trust in the current partner was also measured using Rempel and colleagues’ (1985) trust scale. This measure consists of three subscales: predictability (five items; $\alpha = .82$), dependability (five items; $\alpha = .85$), and faith (seven items; $\alpha = .94$). The scores from each subscale were averaged to produce an overall trust score for this measure. Example items include “X behaves in a very consistent manner” (predictability), “I can rely on X to keep the promises he/she makes to me” (dependability), and “when I am with X, I feel secure in facing unknown new situations” (faith).

One of the most comprehensive and well-known theoretical formulations of trust comes from Holmes, Rempel, and their colleagues (e.g., Holmes, 1981; Holmes & Rempel, 1989; Rempel et al., 2001). Thus, one of the major advantages of using this scale is its direct and detailed links to the theoretical underpinnings of trust. Rempel et al. (1985) report the development and validation of this scale. The scale exhibited good reliability, with alpha values of .80, .72, and .70 respectively for the faith, dependability and predictability subscales. The structure of the subscales was confirmed with item analyses, as the sample size of the original paper was not large enough for factor analysis. Measures

of love, liking, and happiness correlated with the different subscales in a predictable manner, supporting concurrent validity.

Commitment: Commitment to the relationship was measured using the Commitment Level items of the Investment Model Scale (IMS; Rusbult et al., 1998). Due to perceived redundancy with another item, one item was dropped for this study: “I want our relationship to last forever”. Therefore, the commitment measure used here consisted of six items ($\alpha = .90$). Example items include “I feel very attached to our relationship, very strongly linked to X”, and “I would not feel very upset if our relationship were to end in the near future” (reverse scored).

Rusbult et al. (1998) presented the development and validation of the IMS. Across three studies, alpha values for the Commitment Level items ranged from .91 to .95. Demonstrating concurrent validity, the IMS correlated with a wide range of relevant relationship factors. Additionally, evidence of discriminant validity was established by low correlations with personality and individual difference variables. Notably, the IMS was also related to whether the relationship persisted or not—clearly a useful benchmark for a measure of commitment. The IMS has since been translated into French (Giguère et al., 2006), Dutch (Branje et al., 2007), and Portuguese (Rodrigues & Lopes, 2013), exhibiting similarly good validity and reliability in these contexts.

At this point in the survey, participants were shown the *transgression scenario*. This scenario was personalised with their partner’s name, and contained the following instructions (italicised text indicates random assignment for an unused severity manipulation¹):

¹ This manipulation was originally included to test a hypothesis that transgression severity might moderate the associations between our predictors and outcomes. Accordingly, the two scenarios presented here represent transgressions of high and low severity. As this hypothesis did not remain a focus of the research and hence does not form part of the final thesis, the effects of severity condition are not extensively analysed. However, accounting for severity condition does not substantively alter the pattern of results.

“Try to imagine, as vividly as you can, being in the following situation (even if you don't think it's likely). Read it through a couple of times if you like, to help it stick in your mind.

One night, X goes out to a party. The next day, X tells you that he/she drank a bit too much and *slept with someone after the party/flirted with someone at the party, but that nothing more than that happened*. A friend who was at the party also messages you, *wanting you to know that X cheated on you/mentioning that X seemed to be flirting with someone but things didn't go any further than that*.

Before continuing, please take a minute to think about how finding out about X's actions would make you feel. Specifically, we would like you to imagine how you would feel on the day you found out about X *sleeping/flirting* with someone else. Take a minute to imagine, as vividly as you can, the feelings and reactions you might have for the rest of that day. Then, click next to continue with the survey.”

Participants then completed a number of measures asking how they would react to this transgression. For the following measures, participants were specifically asked to imagine how they would feel on the day they found out about the transgression. These scales are presented below, in the order in which they were seen by participants:

Forgiveness: Forgiveness was measured using Rye and colleagues' (2001) forgiveness scale. Two items were dropped for this study: “I pray for X”, and “I think that many of the emotional wounds related to X's wrongful actions have healed”. The first was dropped due to being confounded with religiosity. The second was dropped because the item did not make sense within the study's hypothetical context. This measure consists of two subscales: presence of positive (four items; $\alpha = .87$) and absence of negative (nine items; $\alpha = .90$). The subscale scores were averaged to produce an overall forgiveness score for this measure. The wording of the items was altered slightly to reflect the hypothetical nature of the study. Example items include “I'd wish for good things to happen to X” (presence of positive), and “I'd feel hatred whenever I thought about X” (absence of negative; reverse scored).

This scale exhibited good psychometric properties in its initial validation by Rye et al. (2001). Internal consistency reliability was .86 for the presence of positive subscale, and .85 for the absence of negative subscale. The two-factor structure was supported by factor analysis. Convergent validity was established by correlations with other extant forgiveness measures, and concurrent validity was supported by correlations with theoretically related variables such as anger and hope. A systematic review of forgiveness measures gave Rye and colleagues' scale a score of 9 out of 10 for the comprehensiveness of its validation process (Fernández-Capo et al., 2017).

Forgiveness: Forgiveness was also measured using the Transgression-Related Interpersonal Motivations inventory—18-item version (TRIM-18; McCullough et al., 2006). Since trust was a primary focus of the research, the item; “I trust X” was dropped from this measure to avoid conceptual overlap. This measure consisted of three subscales: revenge (five items; $\alpha = .93$), avoidance (six items; $\alpha = .93$), and benevolence (six items; $\alpha = .94$). The subscale scores were averaged to produce an overall forgiveness score for this measure; revenge and avoidance were reverse scored such that higher scores represent more forgiveness. The wording of the items was altered slightly to reflect the hypothetical nature of the study. Example items include “I would get even” (revenge), “I would avoid X” (avoidance), and “I’d want us to bury the hatchet and move forward with our relationship” (benevolence).

Development and refinement of the TRIM scale took place over several years. The revenge and avoidance scales were initially reported and validated by McCullough et al. (1998). Convergent validity was established by strong correlations with a single-item measure of forgiveness. Concurrent validity was established through correlations with a number of related variables including rumination, commitment, and apology. Evidence of discriminant validity was obtained via low correlations with social desirability, as well as positive and negative affect (McCullough et al., 1998). A six-item benevolence subscale was later added by McCullough et al. (2006). Although the factor analysis conducted in that work suggested that the newly formed TRIM-18 was best represented by two

underlying factors, more recent work (McCullough, Luna, et al., 2010; Tabak et al., 2012) suggests that the TRIM-18 subscales actually represent a single factor. For this reason, the subscale scores were averaged into a single forgiveness score as described above.

A recent meta-analysis of forgiveness measures reports an average internal consistency reliability of .93 for the TRIM scale (Card, 2018). Based on its good psychometric properties, a systematic review of forgiveness measures recommends the TRIM as one of the preferred measures for the assessment of state forgiveness (Fernández-Capo et al., 2017). A Spanish version of the TRIM-18 has also been validated and was shown to have good reliability and construct validity (Fernández-Capo et al., 2018).

Hurtfulness: How hurtful the offence would be was measured with the following three items ($\alpha = .83$); “What X did would be hurtful”, “What X did would be very painful for me”, and “Compared to other hurtful events in my life, this would be the most hurtful”.

Distress: To measure how distressing the offence would be, participants indicated whether they would feel a range of negative emotions (weak, guilty, angry, annoyed, needy, frustrated, irritated, disappointed, upset, resentful, anxious, ashamed, sad, hostile, nervous, alone). These items were taken from a number of similar measures used in previous research within our lab (e.g., Gabriels & Strelan, 2018).

To refine the scale and investigate the factor structure of the 16 items, exploratory factor analysis was performed. The main purpose of this was to assess whether the items were measuring multiple related concepts, as well as to simplify the scale. Although this was done primarily for the purposes of dimension reduction, we also wanted to be able to interpret the resulting scales in theoretical terms. Therefore, factor analysis rather than principal component analysis was performed; although the two do tend to yield similar results (Schönemann, 1990; Steiger, 1990; Velicer & Jackson, 1990). Suitability of the distress items for exploratory factor analysis was assessed via several indices. The Kaiser-Meyer-Olkin measure of sampling adequacy was .88, well above the recommended value of

.6. MSA values for the individual items were also excellent; all were above .8 (excluding the one removed item). Bartlett's test of sphericity was significant ($\chi^2(120) = 2338.9, p < .001$), further supporting the suitability of the items for factor analysis. However, one item ("guilty") had a communality below .3, and was removed. Given these indices, the remaining 15 items were deemed suitable for exploratory factor analysis.

The choice of how many factors to retain when conducting factor analysis is often based on outdated criteria (Henson & Roberts, 2006). Specifically, graphical examination of the scree plot as recommended by Cattell (1966), and Kaiser's (1960) criterion of retaining factors with eigenvalues greater than 1 (the K1 rule), continue to be used in the majority of papers within psychology (Henson & Roberts, 2006). These methods have been shown to be unreliable (Courtney, 2013), particularly when compared to modern methods of determining how many factors to extract, and have been recommended against for decades (e.g., Zwick & Velicer, 1986). The K1 rule in particular has a tendency to frequently overestimate the number of factors (Costello & Osborne, 2005; Lance et al., 2006; Zwick & Velicer, 1986); but is the default option in a number of statistical software packages. Therefore, following the advice of Courtney (2013), the decision of how many factors to retain was instead based on five modern methods with empirical support and recommendations for their use.

The first two, the Optimal Coordinate and Acceleration Factor methods (Raïche et al., 2013), are essentially non-graphical implementations of Cattell's (1966) scree test, attempting to interpret the scree plot mathematically rather than visually. The third method is Velicer's (1976) Minimum Average Partial (MAP) test, which retains components where variance in the correlation matrix is systematic rather than residual variance. The results of both Velicer's (1976) original MAP^{r2} procedure and revised MAP^{r4} procedure (Velicer et al., 2000) will be examined. The fourth is Horn's (1965) Parallel Analysis, which compares eigenvalues to those obtained from random data rather than to a set value as per the K1 rule. The final method is the Comparative Data technique (Ruscio & Roche, 2012), which extends parallel analysis by analysing multiple datasets with known properties to determine which best matches

the features of the actual dataset. The interested reader can see Courtney (2013) for discussion and comparison of the strengths, weaknesses, and validation for these various techniques.

The results of these five procedures were used to provide triangulation regarding the best number of factors to retain. In the case of ambiguity, more weight was to be given to those with a stronger empirical history in simulation studies, namely Comparison Data and Parallel Analysis. Since SPSS is unable to implement these analyses natively, these five procedures, as well as the factor analysis itself, were carried out using the SPSS R-Menu v2.4 (Basto & Pereira, 2012). These procedures were set up in line with the specifications provided by Courtney (2013). However, the Parallel Analysis was instead based on a factors model and on the 95th percentile.

Overall, the results suggested retaining either two or four factors. Specifically, the Acceleration Factor method suggested retaining one factor. The Optimal Coordinates method, as well as both versions of the MAP procedure, suggested retaining two factors. Finally, the Parallel Analysis and Comparison Data procedures both suggested retaining four factors. However, I noted that the difference between two and three factors for the CD procedure was barely significant, meaning that small changes in the data would have led to the CD procedure also suggesting that two factors should be retained. Based on the results of these analyses, I concluded that either two or four factors should be retained. Therefore, factor analytic solutions were examined for both two and four factors.

Following the recommendations of Fabrigar et al. (1999), I used principal axis factoring as the factor extraction method. Because it was expected that the factors would be correlated, oblique rotation was used. Costello and Osborne (2005) suggest that the choice of which oblique rotation to use is not particularly important, and the default values are acceptable in either case. Therefore, direct quartimin (direct oblimin with delta set to zero) was performed. Finally, because communalities for the items varied considerably, Kaiser normalisation was not applied for this analysis.

After examining the factor analytic solutions for both two and four factors, the decision was made to retain two factors. As outlined in greater detail below, the two-factor solution produced a

straightforward, conceptually meaningful factor solution with few cross-loading items. On the other hand, the four-factor solution had many issues: a number of items which loaded onto more than one factor; a factor with only two items; and the fact that removal of problematic items (those with cross-loadings or low communalities) only deteriorated the quality of the rotated solution. One further item (“hostile”) was eliminated at this stage due to substantial cross-loadings. This item had a primary factor loading of .42 on the first factor, plus a similar loading of .33 on the second. Therefore, the item was removed from further analyses.

Table 1

Factor Loadings and Communalities based on EFA of 14 Distress Items

| | Anger | Weakness | Communalities |
|--------------|-------|----------|---------------|
| Upset | .90 | | .76 |
| Disappointed | .90 | | .71 |
| Angry | .88 | | .77 |
| Irritated | .78 | | .70 |
| Annoyed | .69 | | .48 |
| Sad | .62 | .25 | .58 |
| Frustrated | .56 | .37 | .64 |
| Resentful | .54 | .26 | .48 |
| Needy | -.21 | .73 | .44 |
| Weak | | .65 | .45 |
| Nervous | | .64 | .47 |
| Alone | .23 | .62 | .57 |
| Anxious | .23 | .60 | .53 |
| Ashamed | | .57 | .28 |

Note. Factor loadings below .20 suppressed.

The final stage of the analysis was examination of the two-factor solution for the remaining 14 items. Factor loadings and communalities for the 14 items are shown in Table 1. The first factor contained eight items, appeared to consist of emotions indicating negative feelings about the other person, and was labelled “anger”. The second factor contained six items, appeared to consist of items indicating negative feelings about the self, and was labelled “weakness”. These two factors were

correlated at $r = .45$, and together explained 56.2% of the variance in the 14 items. Composite scores were created for each factor, based on the mean of the items with their primary loading on that factor. Cronbach's alpha was .92 for the anger subscale, and .82 for the weakness subscale.

Psychological tension: Psychological tension was measured using nine items from Karremans et al. (2003). Three extra items were also added for the current study: "It would be easy to decide what to do next", "I would feel unsure and indecisive", and "I wouldn't know what I wanted to do about it". These items were included to assess more directly whether the tension experienced was due to motivational ambivalence and uncertainty. One item ("I've experienced feelings of guilt") was removed due to a low item-total correlation. Therefore, the measure of psychological tension used here consisted of 11 items ($\alpha = .90$). The wording of the items was altered slightly to reflect the hypothetical nature of the study. Example items include "I would feel restless", and "I would experience conflicting feelings".

This scale was developed by Karremans et al. (2003), who also reported reliability and validity evidence. The scale demonstrated good internal consistency reliability, with alpha values of .88 and .92 across two studies. Concurrent and discriminant validity were supported by the fact that scores on the scale correlated with negative affect, but were not consistently related to positive affect.

Based on recommendations by Sharpe et al. (2013) as well as Varga et al. (2011), I also included measures assessing views on infidelity and experience with infidelity, to use as control variables. Taken together, those papers demonstrated that participants' judgments about hypothetical cheating scenarios are influenced by actual experiences either cheating or being cheated on. Therefore, I asked participants the following questions relevant to cheating and infidelity:

Cheating sensitivity: "Which of the following behaviours would you view as 'cheating'? In the story, I would have considered it cheating if... (please tick all that apply):" Response options were "X talked to someone at the party", "X kissed someone at the party", "X danced with someone at the party", "X had sex with someone at the party", and "X flirted with someone at the party". Because

participants had very high levels of agreement regarding the relative seriousness of the response options, I operationalised this variable as the total number of items endorsed. Since this was based partly on analysis of participant responses, this decision is discussed in more detail in the results section.

Experience with infidelity: “Have you ever had any experiences in which someone you were romantically involved with “cheated” on you?” Response options were “yes” or “no”. This item was taken from Harris (2002).

Experience with cheating: “Have you ever had any experiences in which you “cheated” on someone you were romantically involved with?” Response options were “yes” or “no”. This item was based on the above experience with infidelity item from Harris (2002).

Finally, participants completed a comprehension check item:

Comprehension check: To ensure that participants had been paying sufficient attention to the survey, they were asked to recall a basic detail in the scenario they had read: “In the scenario I read, I imagined that X...” Response options were “kissed someone else at a party”, “flirted with someone else at a party”, “slept with someone else at a party”, or “I can’t remember what happened in the story!”

2.2 Results

2.2.1 Descriptive statistics

For female participants, 147 (93.6%) thought of a male partner and 10 (6.4%) thought of a female partner. For male participants, 75 (96.2%) thought of a female partner and three (3.8%) thought of a male partner. 113 (48.1%) participants were married to the individual they thought of, 71 (30.2%) were in an established or long-term relationship, 27 (11.5%) were dating or in an early relationship, 12 (5.1%) were engaged, eight (3.4%) were in a casual relationship, and four (1.7%) placed themselves in the ‘other’ category. The median length of time that participants had been with their partner was 6.1 years ($SD = 9.92$). 127 participants (54.0%) had experienced being cheated on at some point in their

life, whereas 108 (46.0%) had not. 73 (31.1%) participants had experienced cheating on someone, whereas 162 (68.9%) had not. Overall, participants disagreed that their partner was likely to commit the hypothetical transgression ($M = 2.9$, $SD = 2.07$). However, participants generally agreed that they would feel hurt if their partner did perform the hypothetical transgression ($M = 6.02$, $SD = 1.31$).

The responses showed that there was broad agreement regarding the relative seriousness of the 5 cheating sensitivity items. Two participants (0.9%) viewed talking to someone at the party a form of cheating, 18 (7.7%) viewed dancing as a form of cheating, 52 (22.1%) viewed flirting as a form of cheating, 174 (74.0%) viewed kissing as a form of cheating, and 227 (96.6%) viewed sleeping with someone as a form of cheating. To determine whether these proportions were significantly different from one another, Cochran's Q Test was conducted. Results indicated that there were statistically significant differences in the levels of endorsement between categories, $\chi^2(4) = 644.55$, $p < .001$. Post-hoc pairwise analyses using McNemar's tests with the Bonferroni correction showed that all categories differed from one another (p 's $< .001$).

In addition, endorsing lower categories almost guaranteed endorsement of higher categories, suggesting broad agreement regarding the rank order of variables. Specifically, both participants who indicated that they viewed talking to someone as cheating also endorsed all other categories as cheating. Of the 18 who viewed dancing as cheating, 17 (94.4%) also viewed kissing as cheating and 16 (88.9%) viewed sleeping with someone as cheating. The greatest disagreement in rank order appeared to be between dancing and flirting, with only 12 of the 18 people (66.7%) who viewed dancing as cheating also viewing flirting as cheating. Of the 52 people who viewed flirting as cheating, 49 (94.2%) also viewed kissing as cheating and 51 (98.1%) viewed sleeping with someone as cheating. Finally, of 174 people who viewed kissing as cheating, 171 (98.3%) viewed sleeping with someone as cheating. As outlined in the measures section, this variable was operationalised as the total number of categories endorsed. Because there was almost universal agreement regarding the rank order of

categories, this operationalisation is virtually identical to operationalising cheating sensitivity as the most serious category of behaviour endorsed.

2.2.2 Bivariate correlations

Table 2 displays Pearson's correlations for the associations between key Study 1 variables. Most notably, commitment had significant positive associations with most of the outcome variables (specifically, with the TRIM scale, hurtfulness, anger, and tension), but was not significantly associated with weakness or the Rye forgiveness scale. However, despite commitment and trust having a strong positive association, the trust measures did not appear to exhibit the same association with the outcome variables, with a majority of the correlations being non-significant. The exception to this appears to be for the correlations between the trust and forgiveness measures, which were consistently significant and positive.

Also of note was a moderate² positive correlation between both trust measures and attachment anxiety, suggesting that the influence of attachment anxiety may be of particular interest to investigate as a potential confounding variable.

2.2.3 Partial correlations

To further investigate the divergent pattern of correlations exhibited by the trust and commitment measures, I computed partial correlations for the associations between these predictor variables and the study's outcome variables; in each case, statistically controlling for the other predictor to estimate the unique influence of trust and commitment. Table 3 displays these partial correlations.

² Using effect size guidelines from Cohen (1988).

Table 2

Zero-order Correlations between Study 1 Variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--------------------------|---------|---------|--------|---------|---------|--------|--------|--------|-------|---------|-------|-----|
| 1. Trust (DTS) | | | | | | | | | | | | |
| 2. Trust (RHZ) | .91*** | | | | | | | | | | | |
| 3. Commitment | .62*** | .64*** | | | | | | | | | | |
| 4. Forgiveness (Rye) | .28*** | .24*** | .03 | | | | | | | | | |
| 5. Forgiveness (TRIM) | .40*** | .35*** | .24*** | .84*** | | | | | | | | |
| 6. Hurtfulness | .00 | .05 | .21*** | -.67*** | -.54*** | | | | | | | |
| 7. Distress (Anger) | -.00 | .05 | .30*** | -.57*** | -.38*** | .65*** | | | | | | |
| 8. Distress (Weakness) | -.13* | -.10 | .11 | -.45*** | -.34*** | .46*** | .54*** | | | | | |
| 9. Psychological tension | -.01 | .03 | .26*** | -.54*** | -.32*** | .67*** | .82*** | .63*** | | | | |
| 10. Dispositional trust | -.01 | .01 | -.12 | .06 | -.00 | .00 | -.11 | -.05 | -.06 | | | |
| 11. Attachment avoidance | -.06 | -.12 | -.04 | -.03 | -.07 | -.03 | -.10 | -.05 | -.07 | -.31*** | | |
| 12. Attachment anxiety | -.32*** | -.31*** | -.13 | -.09 | -.11 | .03 | .08 | .30*** | .10 | -.17** | .20** | |
| 13. Cheating sensitivity | -.04 | -.04 | .11 | -.25*** | -.16* | .20** | .26*** | .18** | .18** | -.15* | .05 | .13 |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 3

Partial Correlations between Study 1 Predictor and Outcome Variables

| Controlling for: | Commitment | | Trust (DTS) | Trust (RHZ) |
|---------------------|-------------|-------------|-------------|-------------|
| | Trust (DTS) | Trust (RHZ) | Commitment | |
| Forgiveness (Rye) | .33*** | .29*** | -.18** | -.16* |
| Forgiveness (TRIM) | .33*** | .27*** | -.01 | .01 |
| Hurtfulness | -.17* | -.11 | .26*** | .23*** |
| Distress (Anger) | -.25*** | -.20** | .39*** | .36*** |
| Distress (Weakness) | -.25*** | -.22** | .24*** | .22** |
| Tension | -.22** | -.18** | .33*** | .31*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

For five of the six outcome variables, the unique influence of trust and commitment on the outcome variable in question was opposite in sign. Specifically, both trust measures were significantly positively related to the Rye forgiveness scale, whereas commitment was significantly negatively related to this measure. With one exception (the non-significant correlation between RHZ trust and hurtfulness), both trust measures were negatively associated with hurtfulness, anger, weakness, and tension. In all cases, commitment was significantly positively related to these variables.

The exception to this pattern of trust and commitment displaying opposite effects on the outcome variables was for scores on the TRIM scale. Although the unique influence of both trust measures on the TRIM scale was significant and positive, commitment was not associated with the TRIM scale once trust was controlled for.

2.2.4 Control analyses

The final stage of the Study 1 analyses was investigation of possible confounds or limitations to the pattern of correlations presented above. Specifically, I examined 10 additional variables to determine whether they affected the pattern of associations represented by the partial correlations.

Four of these variables were dichotomous; experience cheating on a romantic partner, experience being cheated on by a romantic partner, gender, and severity of offence presented.

Because variables in partial correlation analyses are assumed to be continuous, splitting the analysis was considered preferable for these dichotomous controls rather than including them as covariates. Therefore, partial correlations were calculated for each group to determine if the same conclusions could be drawn irrespective of group membership. However, note that this approach does not enable statistical comparison of the partial correlation coefficient between groups. The focus of the analysis is simply whether the same substantive conclusions can be drawn in each group, to test the breadth of the effect and possible confounds. In other words, testing whether the pattern of results is contradicted in any particular subgroup is the main goal of these analyses, rather than comparing subgroups.

Table 4

Partial Correlations between Study 1 Predictor and Outcome Variables, Sorted by Experience Cheating on a Romantic Partner

| | Controlling for: | Commitment | | Trust (DTS) | Trust (RHZ) |
|-------------------------------------|---------------------|-------------|-------------|-------------|-------------|
| | | Trust (DTS) | Trust (RHZ) | Commitment | |
| No experience cheating (n = 162) | Forgiveness (Rye) | .30*** | .25** | -.22** | -.19* |
| | Forgiveness (TRIM) | .32*** | .24** | -.04 | -.00 |
| | Hurtfulness | -.16* | -.08 | .27*** | .23** |
| | Distress (Anger) | -.23** | -.19* | .34*** | .31*** |
| | Distress (Weakness) | -.28*** | -.23** | .16* | .14 |
| | Tension | -.23** | -.19* | .28*** | .26** |
| Experience cheating (n = 73) | Forgiveness (Rye) | .36** | .34** | -.14 | -.13 |
| | Forgiveness (TRIM) | .34** | .33* | .03 | .04 |
| | Hurtfulness | -.18 | -.16 | .25* | .24** |
| | Distress (Anger) | -.30* | -.24* | .51*** | .47*** |
| | Distress (Weakness) | -.23 | -.25* | .39** | .40** |
| | Tension | -.19 | -.20 | .44*** | .45*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 4 displays the results of this analysis for experience cheating on a romantic partner. In general, the support for the hypotheses is similar in both groups, and point estimates were similar for most correlations. However, one caveat is that several of the estimates are non-significant for

participants with experience cheating on a romantic partner, presumably due to the smaller sample size in the group. It is also notable that the partial correlations for commitment with anger, weakness, and tension appear to be of a larger magnitude for those with experience cheating on a romantic partner, although whether these differences would be statistically significant has not been assessed.

Table 5

Partial Correlations between Study 1 Predictor and Outcome Variables, Sorted by Experience Being Cheated on by a Romantic Partner

| | Controlling for: | Commitment | | Trust (DTS) | Trust (RHZ) |
|--|---------------------|-------------|-------------|-------------|-------------|
| | | Trust (DTS) | Trust (RHZ) | Commitment | |
| No experience being cheated on (n = 108) | Forgiveness (Rye) | .23* | .16 | -.17 | -.14 |
| | Forgiveness (TRIM) | .25** | .17 | .03 | .06 |
| | Hurtfulness | -.15 | -.02 | .30** | .22* |
| | Distress (Anger) | -.17 | -.07 | .34*** | .28** |
| | Distress (Weakness) | -.33*** | -.24* | .16 | .13 |
| | Tension | -.21* | -.08 | .26** | .18 |
| Experience being cheated on (n = 127) | Forgiveness (Rye) | .34*** | .33*** | -.18* | -.16 |
| | Forgiveness (TRIM) | .38*** | .33*** | -.07 | -.02 |
| | Hurtfulness | -.17 | -.16 | .24** | .23* |
| | Distress (Anger) | -.27** | -.24** | .40*** | .38*** |
| | Distress (Weakness) | -.26** | -.26** | .34*** | .33*** |
| | Tension | -.21* | -.24** | .38*** | .40*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 5 displays the results of the control analysis for participants who had experience being cheated on by a romantic partner versus those who had not. Although the correlations are of similar direction in both groups, there did appear to be significant attenuation of the magnitude (and in many cases significance) of the correlations for participants without experience being cheated on. It is possible that this is related to the fact that I used a hypothetical scenario, where participants who had experienced the presented transgression were better able to imagine how the offence would make them feel, leading to correlations of greater magnitude.

Table 6

Partial Correlations between Study 1 Predictor and Outcome Variables, Sorted by Participant Gender

| Controlling for: | | Commitment | | Trust (DTS) | Trust (RHZ) |
|---------------------|---------------------|-------------|-------------|-------------|-------------|
| | | Trust (DTS) | Trust (RHZ) | Commitment | |
| Female (n = 157) | Forgiveness (Rye) | .28*** | .24** | -.14 | -.12 |
| | Forgiveness (TRIM) | .31*** | .23** | .02 | .07 |
| | Hurtfulness | -.14 | -.07 | .23** | .18* |
| | Distress (Anger) | -.26** | -.22** | .44*** | .41*** |
| | Distress (Weakness) | -.25** | -.21** | .27** | .25** |
| | Tension | -.23** | -.20* | .38*** | .36*** |
| Male (n = 78) | Forgiveness (Rye) | .32** | .34** | -.21 | -.23* |
| | Forgiveness (TRIM) | .33** | .36** | -.10 | -.13 |
| | Hurtfulness | -.14 | -.16 | .28* | .29* |
| | Distress (Anger) | -.12 | -.08 | .23* | .19 |
| | Distress (Weakness) | -.30** | -.27* | .20 | .19 |
| | Tension | -.11 | -.09 | .17 | .16 |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 6 displays the results of the control analysis for female versus male participants. Similar to the previous analysis, there appears to be some attenuation of both the magnitude of point estimates and the significance of the correlations for male participants. Specifically, although all 12 of the partial correlations involving anger, weakness, and tension are significant for female participants, only five are significant for male participants. Although this could be partly due to the fact that there are fewer males, 10 of the 12 point estimates were also lower for male participants. Interestingly, the opposite effect is evident for the 12 partial correlations involving the Rye forgiveness scale, the TRIM scale, and hurtfulness. Although only one partial correlation changes from non-significant to significant when comparing females to males, all 12 point estimates are larger for males. Without inferential comparisons it is of course not appropriate to interpret these comparisons extensively, but the pattern of results is at least consistent and compelling.

Table 7

Partial Correlations between Study 1 Predictor and Outcome Variables, Sorted by Severity of Offence

| Controlling for: | | Commitment | | Trust (DTS) | Trust (RHZ) |
|-------------------------------------|---------------------|-------------|-------------|-------------|-------------|
| | | Trust (DTS) | Trust (RHZ) | Commitment | |
| Low severity betrayal (n = 111) | Forgiveness (Rye) | .39*** | .43*** | -.13 | -.17 |
| | Forgiveness (TRIM) | .37*** | .41*** | .16 | .13 |
| | Hurtfulness | -.17 | -.18 | .21* | .21* |
| | Distress (Anger) | -.24* | -.28** | .35*** | .37*** |
| | Distress (Weakness) | -.36*** | -.37*** | .17 | .19* |
| | Tension | -.30** | -.33*** | .30** | .32** |
| High severity betrayal (n = 124) | Forgiveness (Rye) | .32*** | .31** | -.24** | -.24** |
| | Forgiveness (TRIM) | .34*** | .28** | -.11 | -.08 |
| | Hurtfulness | -.17 | -.14 | .40*** | .37*** |
| | Distress (Anger) | -.25** | -.15 | .46*** | .39*** |
| | Distress (Weakness) | -.16 | -.12 | .26** | .23** |
| | Tension | -.11 | -.06 | .37*** | .34*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 7 displays the results of the control analysis for low versus high severity betrayals. In both conditions, there was still some support for the hypotheses in that trust and commitment had strongly divergent effects. However, for the trust measures, the point estimates and significance appeared to be attenuated in the high severity condition. The opposite pattern of results was suggested for commitment, as some of the point estimates and significance appeared to be attenuated in the low severity condition.

The remaining six control variables were continuous. Specifically, I investigated dispositional trust, attachment avoidance and anxiety, cheating sensitivity, age, and length of the relationship. The influence of these variables was assessed by also controlling for their influence when estimating the partial correlations, to determine whether the inclusion of these variables would alter the substantive conclusions that can be drawn from the data. Table 8 displays the results of the control analysis for the six continuous variables. The partial correlations were relatively unaffected by the inclusion of these variables, and substantive conclusions that can be drawn are largely unchanged. The main exception

to this is that the detrimental associations of commitment with the Rye forgiveness scale did not reach significance after inclusion of the control variables.

Table 8

Partial Correlations between Study 1 Predictor and Outcome Variables, Additionally Controlling for Dispositional Trust, Attachment Avoidance, Attachment Anxiety, Cheating Sensitivity, Age, and Relationship Length

| Controlling for: | Commitment | | Trust (DTS) | Trust (RHZ) |
|---------------------|-------------|-------------|-------------|-------------|
| | Trust (DTS) | Trust (RHZ) | Commitment | |
| Forgiveness (Rye) | .29*** | .25*** | -.11 | -.09 |
| Forgiveness (TRIM) | .30*** | .23*** | .04 | .07 |
| Hurtfulness | -.13 | -.08 | .21** | .18** |
| Distress (Anger) | -.20** | -.15* | .32*** | .29*** |
| Distress (Weakness) | -.15* | -.13* | .18** | .17* |
| Tension | -.17* | -.14* | .28*** | .27*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

2.3 Study 1 Discussion

Study 1 was an initial examination of the unique effects of trust and commitment in the context of an interpersonal transgression. Participants imagined a hypothetical transgression being committed by their current romantic partner, and completed measures assessing their anticipated reactions. Results supported the proposition that trust and commitment would have divergent unique effects on reported feelings of distress and forgiveness.

At the bivariate level, commitment was related to most of our key outcome variables. Specifically, high commitment was associated with forgiveness (as measured by the TRIM), hurtfulness, anger, and tension. However, commitment was not associated with feelings of weakness or the Rye forgiveness scale. These findings are largely in line with the research reviewed in Chapter 1. As discussed earlier, commitment is generally associated with forgiveness (Fehr et al., 2010; Finkel, 2016). Given this, findings for the TRIM are expected, although findings for the Rye forgiveness scale

were somewhat more surprising. These findings were also consistent with the proposition that commitment might increase feelings of distress. At the bivariate level, trust was generally not associated with emotional reactions, but was positively related to both forgiveness measures. The link between trust and forgiveness was anticipated based on the literature; the lack of association with distress measures is perhaps more surprising given that trust should signal safety, but these associations were likely being muted by the positive correlations of these variables with commitment.

To disentangle these associations, the unique effects of trust and commitment were estimated. These analyses revealed more consistent effects of trust and commitment on the outcome variables. After controlling for commitment, trust exhibited beneficial associations with each outcome, with one exception (the non-significant correlation for one trust scale with hurtfulness). In other words, trust was related to decreased feelings of distress and increased forgiveness. On the other hand, commitment appeared to be detrimental for nearly all outcome variables examined. Specifically, after controlling for trust, commitment was related to increases in anticipated distress and lower scores on the Rye forgiveness scale—but was unrelated to forgiveness as measured by the TRIM. For five of the six outcome variables examined, the unique influence of trust and commitment on the outcome variable in question was opposite in sign, supporting the general goal of this thesis in disentangling their effects.

The exception to this pattern of trust and commitment displaying opposite effects on the outcome variables was for scores on the TRIM scale. Although the unique influence of both trust measures on the TRIM scale was significant and positive, commitment was not associated with the TRIM scale once trust was controlled for. Commitment being uncorrelated with forgiveness in the presence of trust is in line with other studies which have examined these variables together (Laifa et al., 2018; Strelan et al., 2017). Correlations with the Rye forgiveness scale exhibited patterns more in line with the four outcome measures assessing distress. This discrepancy is perhaps unsurprising given that the two forgiveness scales have a slightly different focus; the Rye scale assesses the presence of positive and negative thoughts and emotion (Rye et al., 2001), similar to our emotion-focussed outcome

variables. The TRIM scale, on the other hand, assesses behavioural intentions toward the offender (McCullough et al., 1998). Taken together, these results suggest that commitment may have negative effects on distress and more emotion-focussed forgiveness measures, but not on behavioural indicators of forgiveness and reconciliation.

Control analyses were also conducted to determine whether the interpretations drawn were affected by the inclusions of other variables. Although the substantive conclusions drawn were largely unchanged in these analyses, some possible influences were identified. Firstly, for participants who had previously experienced cheating on a partner, there was some suggestion that commitment had stronger associations with anger, weakness and psychological tension. Secondly, there was a possible attenuation of the magnitude of correlations for participants who had not experienced being cheated on. It is possible that participants without this experience were less accurate in forecasting their responses to this kind of transgression. Several correlations became non-significant in this group despite reasonably equal sample sizes. This was the main analysis where substantive conclusions were somewhat altered within a sub-group, although point estimates were still in line with the overall findings. Third, some differences in the relative importance of trust and commitment was observed based on gender. It is possible that these could be specific to the context of infidelity, as gender differences in predictors of distress are known to exist for this kind of transgression (Buss, 2011; Buss & Haselton, 2005; Sagarin, 2005). The substantive interpretations were not supported for males, this is likely due to the smaller sample size within the subgroup as point estimates were similar to females. Finally, the type of betrayal imagined also altered the relative importance of trust and commitment to some degree.

Because differences in point estimates between subgroups were not assessed statistically, I have avoided offering interpretations for these differences; the primary goal was to determine whether the pattern of results was contradicted in any subgroup. Although particular correlations changed from significant to non-significant in certain subgroups, this was usually related to lower sample size for that group rather than large shifts in point estimates. No subgroups were found where results specifically

contradicted the pattern of results in the overall sample, supporting the generalisability of the pattern of results presented here.

These findings are interesting, but naturally come with several limitations. Firstly, due to the unused severity manipulation the transgression experienced was not consistent across participants. However, this is not a critical problem with the study design. As highlighted earlier, control analyses involving severity suggested similar substantive conclusions in each group. Inclusion of both serious and less serious transgressions may have inflated the variance in the outcome measures, but this too is unlikely to be problematic. Because trust and commitment were assessed prior to the experimental manipulation, the effects of trust and commitment cannot be confounded with the transgression presented, which may otherwise have been a methodological concern.

A second limitation is related to the assessment of experience with infidelity. This item was included based on recommendations by Varga et al. (2011), and did make useful contributions to the control analyses. However, given that the research had participants imagine a hypothetical infidelity by their current partner, it may have also been useful to assess whether participants had experienced infidelity in that relationship specifically. It seems likely that this may have had implications for the effects of trust and commitment beyond general experience with cheating or infidelity. Studies 2 and 3 in this thesis do not focus on romantic relationships or infidelity specifically, therefore this possibility was not able to be explored, but this addition may be a useful consideration for future work.

A third limitation is the hypothetical nature of the offence presented. Although this was useful in an initial investigation to allow assessment of trust and commitment before presenting a transgression, extending these findings to the context of actual transgressions will bolster the findings presented. Meta-analysis of the effects of scenario vs. recall designs in forgiveness research has identified shifts in the importance of different predictors based on choice of methodology (Fehr et al., 2010). Studies 2 and 3 aimed to account for this possibility by assessing actual transgressions.

Finally, the study was conducted in the context of both romantic relationships and transgressions involving infidelity. Given that infidelity is only a concern in romantic relationships, and coping can have predictors unique to this context as highlighted above, it is plausible that the effects identified would not generalise to other transgression types. Similarly, romantic relationships have specific and unique features; these findings may not generalise to other relationship types. Accordingly, examining a broader range of transgressions and relationship types was an important goal of the subsequent studies within this thesis.

In summary, Study 1 identified opposing unique effects of trust and commitment, which were relatively robust across potential confounding variables. These opposing effects lend support to the value of this thesis in disentangling trust and commitment. Another key contribution was the finding that the partial correlations differed in interpretation compared to the zero-order associations, further supporting the utility of disentangling these predictors. Finally, in line with predictions, commitment was associated with increased distress; although not necessarily with less forgiveness. The next steps³ include examining this effect within other transgression types, within non-romantic relationships, and in the context of real transgressions. Additionally, further replications of the unique effects of trust and commitment will add to the robustness of these findings. Finally, it is not clear why these associations exist—providing theoretical explanations for them was an important goal for Studies 2 and 3. I address

³ Clearly, a further limitation which has not been discussed here is that these associations are not shown to be causal. Because this is a limitation of the thesis in general, this point is addressed in the general discussion. However, in addition to the work presented here, I conducted two further studies that attempted investigation of these associations experimentally. The first attempted to manipulate trust by altering the relationships participants brought to mind in a scenario study. A second study also presented hypothetical transgression scenarios, but instead attempted to manipulate trust by varying images of the hypothetical transgressor. These images were taken from the Oslo Face Database (Chelnokova et al., 2014), and were selected in order to vary widely in ratings of trustworthiness but be closely matched on other metrics such as attractiveness and dominance. Commitment was also manipulated in this study via alterations to the scenario presented. Despite promising pilot research, these two studies generally failed to manipulate the target variables in full-scale work. Given the constraints of a PhD project the decision was made to focus efforts elsewhere, adducing suggestive rather than conclusive evidence for the unique effects of trust and commitment. However, the findings presented here would certainly be bolstered by future research examining these effects experimentally.

this last point in Chapter 3, considering theories and models which may suggest potential explanations for this effect.

Chapter 3: Theoretical Development

In Chapter 3, I outline four theoretical perspectives that will be drawn upon to investigate potential explanations for the unique effects of trust and commitment identified in Study 1. These perspectives are the valuable relationships hypothesis, interdependence theory, the mutual cyclical growth model, and the risk regulation model. More specifically, each perspective is drawn upon to some degree for the proposed explanation evaluated in Study 2. Interdependence theory, the mutual cyclical growth model, and the risk regulation model are most relevant for the proposed explanation tested in Study 3. These four theories have been included because each heavily implicates (directly or indirectly) both trust and commitment in the context of forgiveness or relationship dynamics. First, general information about each of these theories will be provided, with emphasis on the roles played by trust and commitment within these theories. Identifying common elements between these theories and models is also a focus of this chapter. Subsequently, I draw upon key aspects of these theories to outline the proposed explanations and hypotheses to be evaluated in Study 2.

3.1 The Valuable Relationships Hypothesis

As outlined in Chapter 1, recent theorising on forgiveness has made growing use of evolutionary arguments and research (McCullough, 2008; McCullough, Kurzban, & Tabak, 2010). Such perspectives use the putative evolutionary functions of conflict and reconciliation among our human and non-human ancestors to predict the features of forgiveness systems. A core underlying premise of evolutionary psychology is that just like the physical features of organisms, the psychological adaptations which produce behaviour are also the result of selection pressures (Confer et al., 2010). Human behaviour and cognition rely on the brain, and the architecture of the brain is subject to mutation and selection as are other features of organisms (Neuberg et al., 2010). Evolutionary perspectives argue that social behaviours—such as revenge, forgiveness and reconciliation—exist because they increased the fitness of ancestral humans and other social animals (de Waal & Pokorny,

2005; McCullough, 2008). Therefore, understanding the challenges that these adaptations evolved to address can help predict and explain the antecedents of forgiveness.

One specific prediction about forgiveness comes from the valuable relationships hypothesis. The valuable relationships hypothesis is a concept originally drawn from evolutionary biology (de Waal, 2000), and was later incorporated into forgiveness research and theory (McCullough, 2008; McCullough, Kurzban, & Tabak, 2010). The original formulation of the valuable relationships hypothesis predicted that peacemaking and reconciliation efforts would be most commonly directed towards partners who provide important benefits. In other words, reconciliation among non-human animals functions to preserve important relationships, and thus is more likely to occur within these relationships. For example, reconciliation following conflict becomes more likely when macaques must cooperate to obtain food (Cords & Thurnheer, 1993). A range of other evidence has also supported the utility of the valuable relationships hypothesis in understanding non-human interactions; the interested reader can see de Waal (2000) and van Schaik and Aureli (2000) for more extensive reviews.

Extending these concepts into the realm of conflict and forgiveness, McCullough (2008) suggested that the valuable relationships hypothesis should also be useful to understanding forgiveness among humans. Some support for the importance of relationship value in predicting forgiveness comes from studies on commitment and closeness. As reviewed in Chapter 1.3.2, commitment is well-established as a predictor of forgiveness. Given that commitment includes concepts such as satisfaction, material investment and the availability of alternatives, it can be considered a reasonable proxy for assessing the value of a relationship. However, other studies have evaluated the importance of relationship value more directly. McCullough, Luna, et al. (2010) measured self-reported perceptions of relationship value, finding that they predicted rates of forgiveness in a longitudinal investigation even after controlling for related concepts such as commitment (see also Burnette et al., 2012). In addition to relationship value predicting victim responses in the aftermath of a transgression, it has also been shown to predict transgressor behaviours. Ohtsubo and Yagi (2015) found that, even

after controlling for related variables such as closeness, transgressors who assigned more value to the relationship were more likely to offer costly apologies and more likely to reconcile. Finally, relationship value has even been shown to predict individual tendencies toward cooperative behaviour when the target is a country; manipulating information regarding the value of the country as a trading partner influenced willingness to cooperate on a contentious issue (Ohtsubo, 2019).

However, decisions regarding forgiveness should depend on more than considerations regarding the value of a particular relationship. A later addition to the importance of relationship value in evolutionary arguments regarding forgiveness was the concept of exploitation risk. As Burnette et al. (2012) point out, a well-designed decision-making system should consider costs which may be imposed by a relationship partner in future as well as potential benefits from the relationship (see also McCullough et al., 2013). In other words, forgiveness decisions should include evaluation of the likelihood that a transgressor may exploit the victim again in future. Including exploitation risk alongside relationship value suggests that even valued relationships may not enhance forgiveness if the risk of repeat offending is too high. Burnette et al. investigated relationship value and exploitation risk as predictors of forgiveness in human relationships, finding that these constructs interacted to influence decisions about forgiveness.

Accordingly, cost-benefit analyses which involve balancing relationship value against exploitation risk are key features in evolutionary accounts of forgiveness (McCullough et al., 2013). Naturally, calculations of relationship value and exploitation risk may have more proximate mechanisms represented by familiar constructs from social psychology. Unsurprisingly, trust and commitment have been discussed as potential mechanisms for evaluating this information (e.g., McCullough, Kurzban, & Tabak, 2010, 2013). These arguments regarding the role of trust and commitment in providing information about relationship value and exploitation risk will be further expanded upon later in the chapter during development of the thesis' theoretical arguments.

3.2 Interdependence Theory

Among the most influential theories within social psychology, interdependence theory (Kelley, 1979; Kelley & Thibaut, 1978; Thibaut & Kelley, 1959) argues that aspects of the situation, as well as the needs and motives of both partners, should be incorporated to more fully describe interaction in situations where actors influence each other's outcomes (i.e., interdependence dilemmas). As discussed in Chapter 1, interdependence theory focusses on analysing the structural features of relationships or interactions to explain and predict behaviour. These features are often represented formally using matrices and transition lists (Van Lange & Rusbult, 2012). Models based on interdependence theory (such as those reviewed subsequently) tend to have a strong dyadic focus, specifying how each partner's thoughts and goals will interact to determine how a situation is navigated. Properties of interdependent situations can also be described in more detail, by considering factors such as how divergent partners' interests are or how much influence they may have over the other's outcomes (Kelley et al., 2003). The principles of interdependence theory have been applied to a broad range of phenomena within social psychology (Van Lange & Rusbult, 2012); including trust, commitment, and forgiveness. Often, the principles of interdependence theory are incorporated into more specific models within individual fields. Thus, although interdependence theory has had a large impact on theories of trust and commitment, these contributions are somewhat more indirect than direct. Accordingly, here I review primarily the aspects of interdependence theory most relevant to understanding the other perspectives within this chapter which have their roots in interdependence theory. However, more detailed reviews of the extensive principles and contributions of interdependence theory can be found in works by a wide range of authors (e.g., Kelley et al., 2003; Reis, 2008; Van Lange & Rusbult, 2012).

One key feature of interdependence theory is detailed description of the features of different styles of interdependence dilemmas (Kelley et al., 2003). Two structural considerations in particular have heavily influenced theories of commitment—and perhaps to a lesser extent, trust. Unsurprisingly,

degree of dependence is a concept drawn from interdependence theory. Dependence is “the degree to which an individual relies on a relationship for the fulfillment of important relationship needs” (Rusbult & Van Lange, 1996, p. 569), or the extent to which an individual’s outcomes are influenced by the partner’s choices and behaviour. Situations can vary in the degree to which outcomes are contingent on the partner. As outlined in Chapter 1.3.1, commitment can be thought of as the subjective representation of the structural feature of dependence. Interdependence theory also incorporates a focus on mutuality of dependence as a key structural feature of interdependence dilemmas. Interaction partners may be relatively equal in the ability to affect each other’s outcomes; alternatively, power imbalances and unilateral control of outcomes are also possible. Mutuality has important ramifications as power imbalances can lead to increased vulnerability, making relationships characterised by mutual dependence less unstable and distressing (e.g., Drigotas et al., 1999).

Finally, interdependence theory also includes a focus on cost-benefit analysis (Thibaut & Kelley, 1959). The classical formulation of an interdependence dilemma is that it involves non-correspondent outcomes—situations where the interests of the self and the relationship are at odds. Accordingly, the processes outlined by interdependence theory involves individuals balancing the benefits of relationship-enhancing behaviours against the costs of forgoing self-interest in a conflict or dilemma (Rusbult et al., 2004). Unsurprisingly, this balancing of risk and reward involved in a relationship is a key feature of evolutionary and functional accounts of conflict and forgiveness as well, mirroring arguments from the valuable relationships hypothesis outlined in the previous section.

3.3 The Mutual Cyclical Growth Model

The mutual cyclical growth model (Wieselquist et al., 1999) extends both interdependence theory and the investment model of commitment (Rusbult, 1980, 1983) to include trust processes. This model attempts to explain behaviour when conflicts between pursuing self-interest and pro-relationship behaviour inevitably arise in relationships. Specifically, the model attempts to explain the processes by

which motivations are transformed towards pro-relationship responses, as well as the coordination of these processes across partners. Given the influence of interdependence theory, the mutual cyclical growth model has a strong dyadic focus, describing the way each partner's trust and commitment interact with and influence the other partner. The model suggests that when individuals rely upon a relationship for important outcomes, this dependence leads to both the subjective experience of commitment, as well as the enactment of pro-relationship behaviours. Partners who observe these behaviours will have their trust increased; in this theory, trust functions as a barometer of the partner's commitment. Given that trust involves willingness to be vulnerable to a partner (Rousseau et al., 1998), this will then enhance the partner's willingness to rely on the relationship, increasing their dependence. Naturally, dependence starts the process from the beginning in this second partner. The cyclical and dyadic nature of this model is argued to be responsible for how mutual dependence is maintained and coordinated relatively automatically across partners.

Another key proposition is that enacting this kind of coordination requires partners to monitor both their own and their partner's level of dependence on the relationship. As in the investment model of commitment, one's own level of dependence on the relationship is represented by feelings of commitment. On the other hand, trust has been shown to develop in response to observing a partner's pro-relationship behaviours. Thus, the proposed link between trust and commitment under this model is that trust functions to monitor and represent a partner's commitment to and dependence on the relationship, to enable this coordination of dependence across partners:

To the extent that achieving and sustaining equal dependence, mutual commitment, and reciprocity of pro-relationship acts rest on knowledge of a partner's commitment, an implicit gauge of the partner's commitment would seem to have considerable functional value. We suggest that relationship-specific trust is such a gauge. (Wieselquist et al., 1999, p. 944).

A final important feature of the model from the point of view of this thesis is a focus on mutuality between partners drawn from interdependence theory. Part of the explanatory power of the mechanisms outlined above is related to the importance of mutual involvement in relationships, as power imbalances in a relationship can enhance vulnerability (e.g., Drigotas et al., 1999). Due to this, well-being in relationships has been linked not only to level of commitment, but also to the ability to maintain mutual commitment. The 'feedback loops' between partners in this model allow relationships to gradually and mutually shift away from self-interest and protection, towards a state where partners can prioritise the relationship while believing the other will as well. Accordingly, maintaining mutual dependence is proposed to be an important function of the mechanisms for coordinating trust and commitment outlined above.

As discussed in Chapter 1, the mutual cyclical growth model has been used to investigate forgiveness of interpersonal transgressions. Specifically, Wieselquist (2009) suggested that forgiveness may function as a pro-relationship behaviour which could be observed by the offending partner and initiate the process model outlined above. Wieselquist found good support for this assertion, and other key tenets of the mutual cyclical growth model in the context of forgiveness. However, this investigation considered trust and commitment as outcomes of a transgressor observing forgiveness behaviours; tenets of the mutual cyclical growth model have not yet been incorporated into investigations which aim to predict victim forgiveness.

3.4 The Risk Regulation Model

This excerpt from Murray and colleagues' (2006) formulation of the risk regulation model neatly showcases the central dilemma that this model, and each perspective presented here in Chapter 3, addresses:

Given the potential pain of romantic rejection, people should be motivated to think and behave in ways that minimize dependence on a partner and, consequently, minimize the likelihood of

being hurt However, people need to risk substantial dependence . . . to establish the kind of satisfying relationship that can fulfill basic needs for belonging or connectedness. (p. 641).

Like the theories and models presented above, the risk regulation model describes how relationship partners navigate tensions between self-protection and connection motivations. This model contains similar themes and propositions to the mutual cyclical growth model. This is partly due to links in the development of these models; many of the key concepts from each model are drawn from interdependence theory. Additionally, the risk regulation model cites work by Wieselquist et al. (1999), who in turn drew upon earlier work on trust by Holmes and Rempel (1989). Accordingly, the models contain several common elements, but the risk regulation model has a stronger focus on the appraisal of risk in relationships, as well as extensive treatment of the role of individual differences in the operation of these appraisal systems. The processes described by the risk regulation model have also been subject to a larger number of validation studies, although the mutual cyclical growth model has stronger links to the forgiveness literature.

The risk regulation model contains a set of if-then rules linking specific appraisals to goals and motivations for managing the relationship. One example is that perceptions of being accepted or rejected by the partner will trigger attempts to regulate dependence. Work on this model includes detailed description of the rules and cues that will activate different relationship goals and behaviours (Murray et al., 2006), as well as individual differences in their operation (Murray et al., 2008). As with interdependence theory, detailed review of specific rules and predictions of the risk regulation model is beyond the scope of this thesis. However, the model contains many similar themes to the other perspectives reviewed in Chapter 3, which are relevant to understanding trust and commitment.

Firstly, the risk regulation model implicates both constructs in the process of regulating dependence, stating that trust regulates the motivation to self-protect, whereas commitment regulates the motivation to behave selfishly (Murray & Holmes, 2009). Secondly, trust is considered a gauge of

the partner's pro-relationship motivation and commitment. Third, like the mutual cyclical growth model, the risk regulation model states that trust will lead to increasing dependence on the partner (Derrick et al., 2012). Fourth, balancing the potential for gain against the risk of loss is a major tenet of the model. Finally, the model highlights the importance of mutual dependence for satisfying interactions (Murray & Holmes, 2008, 2015). Non-mutuality in commitment is considered a barrier to coordination, as this introduces power differentials in partners' motivations toward self-interest or relationship-promotion. However, one difference to the other perspectives here is that the risk regulation model is intended to apply specifically to romantic dyads (Murray et al., 2006; Murray & Holmes, 2009).

3.5 Proposed Theoretical Explanation for Study 1 Findings

Review of the four theories presented above reveals common themes about the functions of trust and commitment in interpersonal relationships. These commonalities suggest a potential explanation for the effects identified in Study 1. In each theory, trust and commitment can be considered closely related mechanisms, which operate in tandem to regulate involvement and dependence in a relationship. The theories each have a focus on weighing risks against benefits, with trust being a proximate mechanism representing risk or need to self-protect, and commitment being a proximate mechanism for representing benefits, value or dependence. Another commonality is the assertion that trust is enhanced by viewing a partner's pro-relationship motivations. More specifically, the perspectives rooted in interdependence theory explicitly conceptualise trust as a barometer that tracks the partner's commitment level, to maintain mutual dependence between partners.

For the purposes of attempting to understand the findings from Study 1, I focus on the second assertion—that trust and commitment function in tandem to assess risks and benefits. These lines of argument can be observed in specific descriptions of each theory. For example, McCullough et al. (2013, p. 2) state that “mechanisms for revenge are designed to deter harms, and that forgiveness mechanisms are designed to solve problems related to the preservation of valuable relationships”. As outlined earlier, trust and commitment have been proposed as proximate mechanisms for tracking

these concerns about risk and dependence. This mirrors the role of trust and commitment in the risk regulation model, where trust “regulates the motivation to self-protect against the possibility of exploitation” (Murray & Holmes, 2009, p. 909), and commitment regulates “each partner’s dependence on the other for need fulfillment and the value each partner attaches to the relationship” (Murray & Holmes, 2009, p. 911). Finally, the mutual cyclical growth model includes similar arguments, as outlined in more detail already in Chapter 3.3. Unifying these concepts, I propose the following summary to explain the findings of Study 1 and suggest mechanisms to test in Study 2.

We rely on our relationships to fulfil needs (Baumeister & Leary, 1995). This means relationships inherently involve some degree of dependence on another person. Both trust and commitment have been shown to be involved in this process of regulating our dependence on others, and function to navigate the risks and benefits inherent in interpersonal relationships. Trust in these theories functions to assess the risk of exploitation, asking: ‘how dependent should I be on this relationship?’ Trust is highly concerned with tracking how responsive a partner is to our needs—how safe it is to be dependent on a particular person. For example, elements of trust include a partner’s dependability and predictability (Rempel et al., 1985), constructs which assess how consistent they will be in responding to our needs. In short, more trusting people are more confident that the partner is committed and intrinsically motivated to care for them. Trust makes rejection seem less likely, as well as less threatening (Murray et al., 2003). Trust also entails more positive views of the partner’s expected behaviours (Campbell et al., 2010), allowing individuals to feel safe being dependent on the partner (Wieselquist et al. 1999; Derrick et al., 2012). Similar arguments for the role of trust have been advanced by Luchies et al. (2013).

The implications that this has for the associations between trust, forgiveness, and distress are fairly straightforward. As outlined in Chapter 1.3.2, trust has been shown to be beneficial for forgiveness. In the case of trust, there is little reason to expect that associations with measures of short-term distress will diverge from this pattern. If trust signals safety, it should be beneficial for both

forgiveness and short-term distress. It seems reasonable to suggest that the more you trust a partner (the less chance you think there is of the partner repeatedly pursuing self-interest at your expense), the less distress you will experience when a transgression makes you evaluate whether the partner will fulfill your needs in the future.

Commitment, on the other hand, asks: 'how dependent am I on this relationship?' (Rusbult & Van Lange, 1996). Dependence is the extent to which partners rely upon one another to satisfy relationship needs. Commitment is, in many ways, a barometer which measures the benefits and value of a relationship. For example, facets of commitment include investment and quality of alternatives, constructs which assess the resources we have placed in the relationship and whether they might be met elsewhere. In short, more committed people are more reliant on the relationship to fulfil their needs. As discussed in Chapter 3.1, the valuable relationships hypothesis suggests that forgiveness will be more likely in such relationships. However, with this dependence, of course, comes the potential for greater loss, if the partner does not live up to expectations in some way. Therefore it is unsurprising that the more committed you are (the more you have invested/are dependent on the relationship), the more you potentially have to lose, and the worse you will feel when this risk of loss is made salient by a transgression. As noted in Chapter 1.3.3, the argument that commitment may make transgressions more hurtful and difficult to cope with due to greater investment and relationship value has been made by a number of authors (e.g., Cann & Baucom, 2004; Karremans & Van Lange, 2004; Strelan et al., 2017; Weigel et al., 2015).

To summarise my explanation in this section, commitment tracks dependence, reliance, and the value of the relationship. Thus, commitment increases negative emotion following a transgression because it is associated with perceptions of greater costs if one's needs are not met. Trust decreases negative emotion following a transgression because it is associated with perceptions of less likelihood that your needs will not be met in the future, and with lowered concerns about exploitation and relational costs being incurred. Trust tracks risk in a relationship. It should therefore have beneficial

effects on both forgiveness and short-term distress when transgressions occur. Commitment tracks the value of a relationship, and accordingly should be related to increased forgiveness. However, with greater value comes concern about greater loss (Molden & Finkel, 2010; Simpson, 1987), and thus commitment should also increase short-term distress following a transgression. Because the stress associated with transgressions in committed relationships is argued to be due to greater investment and dependence, these concerns about loss should still motivate forgiveness despite their detrimental short-term effects on wellbeing.

In the following sections, I will outline mediators which capture these explanations to provide an empirical test for each of them.

3.6 Explaining the Effects of Commitment

3.6.1 The indirect effect via relationship value

The effects of commitment in Study 1 are argued to be due to greater value placed on the relationship, increasing forgiveness but also increasing distress and concerns about loss. In Study 2, this argument will be assessed by mediation analyses through a direct measure of relationship value (Burnette et al., 2012). Relationship value has been included because it directly represents the constructs involved in the theoretical explanation of the effect presented in Chapter 3.5. Relationship value is also a key concept in forgiveness theory (McCullough, 2008; McCullough, Kurzban, & Tabak, 2010) and research (Burnette et al., 2012; McCullough, Luna, et al., 2010). There is existing support for the mediating role of relationship value in accounting for the effects of commitment. Including relationship value and commitment in the same model, McCullough, Luna, et al. (2010) found that relationship value was associated with forgiveness, but commitment was not. McCullough et al. (2013) suggest that “forgiveness is associated with variables such as closeness, commitment, and attachment because they index perceived relationship value” (p. 14).

3.7 Explaining the Effects of Trust

3.7.1 The indirect effect via exploitation risk

The effects of trust in Study 1 are argued to be due to decreased risk and likelihood of the transgressor exploiting the victim in future. In Study 2, this argument will be assessed by mediation analyses through a direct measure of exploitation risk (Burnette et al., 2012). Like relationship value, exploitation risk has been included because it directly represents the constructs involved in my theoretical explanation of the effect. Also like relationship value, exploitation risk is a key concept in forgiveness theory (McCullough et al., 2013) and research (Burnette et al., 2012). Finally, as outlined in Chapter 3.1, trust has been suggested to enhance forgiveness because it indexes perceived exploitation risk (McCullough et al., 2010). As the models above suggest that the function of trust is assessing risk in relationships to manage self-protection concerns, directly measuring exploitation risk is a sensible test of the proposed explanation.

3.7.2 The indirect effect via attributions

A second mediator will also be included to assess the proposition that effects of trust in Study 1 are due to decreased risk of the transgressor exploiting the victim in future. As one of the major perspectives on social psychology, attribution theory (Heider, 1958; Jones et al., 1972; Weiner, 1974, 1986) will also be used to explore the effects of trust. Attribution theory describes how individuals assign reasons to human behaviour, evaluating where the causes, responsibility and blame for an event lies. Attributions may vary along several dimensions—for example, causal explanations may be categorised as internal or external, stable or unstable, and controllable or uncontrollable. Attributions are included as a mediator because they are a well-studied predictor of responses to interpersonal transgressions, which also capture a similar idea as exploitation risk—that the function of trust is to make inferences about a partner's motives and likely future exploitation. Attributions have been well studied in the context of both trust judgments (e.g., Holmes & Rempel, 1989; Miller & Rempel, 2004;

Rempel et al., 2001) and interpersonal forgiveness (Fincham et al., 2002; Hall & Fincham, 2006; Riek & Mania, 2012; Struthers et al., 2008). For example, research has shown that high-trust individuals may compensate by viewing the partner more favourably after difficult discussions (Shallcross & Simpson, 2012). Consequently, trust should encourage more positive interpretations of the offender's character and past behaviour, reducing perceptions of risk. Attributions are included as an additional mediator in Study 2, to capture the proposed explanation for the effects of trust through reduced risk of exploitation due to positive attributions about the partner's motives.

3.8 Formal Statement of Hypotheses for Study 2

Based on the results of Study 1 and the theoretical arguments outlined above, the following hypotheses will be evaluated in Study 2:

Hypothesis 1a: When controlling for commitment, higher trust will be associated with less distress—that is, trust will have a negative correlation with hurtfulness and rumination.

Hypothesis 1b: When controlling for commitment, higher trust will be associated with greater forgiveness.

Hypothesis 1c: When controlling for commitment, the beneficial effects of trust on forgiveness, hurtfulness and rumination will be mediated by exploitation risk and attributions.

Hypothesis 2a: When controlling for trust, higher commitment will be associated with greater distress—that is, commitment will have a positive correlation with hurtfulness and rumination.

Hypothesis 2b: When controlling for trust, higher commitment will be associated with greater forgiveness.

Hypothesis 2c: When controlling for trust, the detrimental effect of commitment on hurtfulness and rumination will be mediated by relationship value.

Hypothesis 2d: When controlling for trust, the beneficial effect of commitment on forgiveness will be mediated by relationship value.

Chapter 4: Study 2

Study 2 aimed to replicate the effect identified in Study 1 using real-life transgressions. An additional goal was to conduct the mediation analyses described above, in order to identify why this effect might be occurring. Therefore, Study 2 employed a recall paradigm, where participants were asked to recall a recent transgression where someone had hurt them quite significantly. The survey emphasized that it must be someone with whom they were still in an ongoing relationship. Unlike Study 1, Study 2 did not limit partners to romantic relationships. Therefore, an additional contribution of Study 2 is exploring this effect outside the context of romantic relationships. Finally, to further increase generalisability relative to Study 1, Study 2 was not limited to transgressions involving infidelity.

4.1 Method

4.1.1 Participants

200 participants from the United States completed the survey. After excluding unsuitable responses, 184 responses were retained for analysis (131 women, 53 men; $M_{age} = 37$, $SD = 11.15$). Responses were excluded for two reasons. First, when asked to describe the transgression six participants stated that one had not actually happened. Second, 13 participants engaged in rote responding (e.g., answering '7' to every item in the survey including reverse-scored items). Some participants were excluded for both reasons, bringing the total number of excluded responses to 16.

As accessible software for mediational power analysis was not readily available at the time Study 2 was conducted, this sample size was originally based on general recommendations by Fritz and MacKinnon (2007). Simulation research by these authors suggested that percentile bootstrapped mediation analysis would require a minimum of 162 participants to achieve .80 power with an alpha of .05, assuming small-to-moderate standardised coefficients for each path in the indirect effect. A post-hoc power analysis also confirmed the adequacy of the final sample, based on the actual standardised path coefficients observed. This analysis was conducted using the MedPower application (Kenny,

2017). The post-hoc analysis found that because of the larger coefficients observed, the statistical power achieved⁴ was .97.

4.1.2 Procedure and measures

In Study 2, participants recalled a past transgression by a close other. The recall study⁵ was conducted via a crowd-sourcing website, CrowdFlower (now called FigureEight). Participants were paid around US\$1 for completing the survey, although this amount varied slightly depending on the website they used to access the task (CrowdFlower displayed tasks across a number of different platforms, each with different additional incentives). Ethics approval was obtained from the University of Adelaide's Human Research Ethics Committee prior to commencing the study.

The following scales are displayed in the order they were presented to participants. Unless otherwise indicated, items used seven-point scales with the labels "strongly disagree", "disagree", "slightly disagree", "neither agree nor disagree", "slightly agree", "agree", and "strongly agree". Additionally, unless otherwise indicated, multi-item scales or subscales were averaged to produce an overall score, with negatively worded items being reverse-scored.

Attachment style: Participants' attachment style was measured using the Experiences in Close Relationships-Relationship Structures questionnaire (ECR-RS; Fraley et al., 2011). This measure consists of two subscales: attachment avoidance (six items; $\alpha = .81$), and attachment anxiety (three

⁴ This analysis was based on the smallest standardised path coefficients observed amongst all models with a single mediator, but excluding the models from Figures 11 and 12, as point estimates for their indirect effects were negligible or negative. Specifically, calculations were based on a standardised a path of $\beta = .49$, a standardised b path of $\beta = .31$, a standardised direct effect of $\beta = .05$, an alpha of .05, and the final sample size of $N = 184$.

⁵ Although it was collected for the purposes of the research outlined here, the data from Study 2 has also been analysed and reported in another published paper (Strelan et al., 2017). The use of this data by Strelan et al. (2017) was focussed on a different set of hypotheses and statistical analyses to those presented within this thesis.

items; $\alpha = .90$). Information on the psychometric properties of the ECR-RS and example items are presented with the measures for Study 1.

Participants were next asked to recall an experience where they were hurt by someone they were close to. They were also instructed that this should be someone with whom they were still in an ongoing relationship. To personalize the survey, participants wrote this partner's name in a textbox, which would automatically appear thereafter where relevant.

Partner-specific trust: Trust in the partner was measured using the Dyadic Trust Scale (DTS; Larzelere & Huston, 1980). This measure consists of eight items ($\alpha = .90$). Information on the psychometric properties of the DTS and example items are presented with the measures for Study 1.

Commitment, Satisfaction, and Investment: Commitment to the relationship was measured using the Investment Model Scale (IMS; Rusbult et al., 1998). The IMS includes seven items which assess commitment level directly. Because they are specific to romantic relationships, two of these items were dropped for this study: "I want our relationship to last forever", and "It is likely that I will date someone other than my partner within the next year". Therefore, the commitment measure used here consisted of five items ($\alpha = .87$). The IMS also includes three subscales assessing different components of commitment: satisfaction (five items, $\alpha = .94$), investment (five items, $\alpha = .80$), and quality of alternatives. Given that the items are specific to romantic relationships, the quality of alternatives subscale was not used in this study. Minor wording changes were also introduced to several items to adapt the scale for non-romantic relationships.

Information on the psychometric properties of the IMS and example items are presented with the measures for Study 1. However, Study 2 also used the IMS subscales in addition to the Commitment Level items. Hence, it is worth noting that when validating the IMS, Rusbult et al. (1998) performed factor analysis and item analysis to confirm the structure of the IMS subscales. Alpha values for the individual subscales ranged from .82 to .95. Example items include "our relationship makes me

very happy" (satisfaction), and "I feel very involved in our relationship; like I have put a great deal into it" (investment).

Relationship value: The extent to which participants perceived their relationship as useful and rewarding was measured using the Relationship Value subscale of the Relationship Value and Exploitation Risk scale (RVEX; Burnette et al., 2012). This subscale consists of five items ($\alpha = .87$). Example items include "our relationship is very rewarding to me", and "X still plays a key role in my life".

Exploitation risk: The extent to which participants perceived their partner as a potential relationship risk was measured using the Exploitation Risk subscale of the RVEX (Burnette et al., 2012). This subscale consists of five items ($\alpha = .86$). Example items include "I feel threatened by X", and "I can't predict how X is going to treat me in the future".

The two subscales of the RVEX were developed concurrently. The subscales displayed good reliability, with alpha values of .92 and .88 for relationship value, and .77 and .81 for exploitation risk. The factor structure of the RVEX was established using exploratory analysis on the first half of the dataset, and subsequent confirmatory factor analysis on the second half. Some evidence of concurrent validity was reported, as the RVEX subscales correlated in the expected directions with a number of related variables. Burnette et al. (2012) also note that evidence of discriminant validity was supported by the fact that the experimental manipulation of relationship value did not affect exploitation risk scores, and vice-versa.

Participants were then asked to describe a recent transgression where their partner had hurt them quite significantly. To get them to reflect on the transgression, they were prompted to describe what had happened in a textbox, as well as how it had made them feel. Participants were also asked how long ago the transgression occurred.

Hurtfulness: How hurtful the offence had been was measured with the following three items ($\alpha = .63$); "What X did was hurtful", "The event is still painful for me", and "Compared to other hurtful events in my life, this was the most hurtful".

Rumination: Rumination was measured using the Intrusiveness subscale of the Impact of Event Scale (IES; Horowitz et al., 1979). This subscale consists of seven items ($\alpha = .90$). Example items include “I have waves of strong feelings about it”, and “I think about it when I don’t mean to”.

The IES is widely used to assess the impact of a specific traumatic event, and has been extensively validated in many languages and settings. The forgiveness literature has adopted the Intrusiveness subscale in particular to assess ruminative thoughts about a transgression. The IES has good reliability, with an alpha value of .78 reported for this subscale in the original validation.

Additionally, a meta-analysis of reliability scores for the IES (Vassar et al., 2011) reports an average alpha value of .87 for this subscale; ranging from .78 to .95 across the studies examined.

Comprehensive evidence for the validity of the scale comes from Sundin and Horowitz (2003), who examined 66 studies which used the IES. Sundin and Horowitz (2003) concluded that since there were low correlations with demographic and individual difference variables, but stronger associations with the type of traumatic event and time elapsed since the event, the scale exhibited good evidence of discriminant and concurrent validity. Additionally, scores on the IES decreased over time following the traumatic event as would be expected. Also discussing the validity of the IES, a review by Sundin and Horowitz (2002) concluded that it has good content, construct, and convergent validity. Finally, an independent review by Joseph (2000) recommends the IES for assessing distress related to a specific event.

Attributions: Attributions for the partner’s hurtful behaviour were measured using statements from the Relationship Attribution Measure (RAM; Fincham & Bradbury, 1992). I assessed attributions on three causal attribution dimensions (causal locus, stability, and globality; three items, $\alpha = .57^6$), and

⁶ Although internal consistency reliability for the causal attribution dimension of the RAM is quite low in the present study, it was deemed acceptable in this case. The RAM is a well-established measure and, as discussed, has typically shown higher Cronbach’s alpha values in other published research.

three responsibility-blame dimensions (partner intent, motivation, and blame; three items, $\alpha = .73$). Example items include “the reason X hurt me is not likely to change” (causal attribution; stability), and “X deserves to be blamed for hurting me” (responsibility-blame dimension; blame).

Validation of the RAM was presented by Fincham and Bradbury (1992). Across three studies, alpha values for the subscales of the RAM ranged from .60 to .94. Notably, these values are higher than in the present study, because Fincham and Bradbury assessed attributions for multiple behaviours at once, essentially basing the reliability analyses on more than three items. The factor structure of the RAM was confirmed using structural equation modelling. Scores on the RAM were related to marital satisfaction and anger in expected directions. Scores were also related to observer ratings of anger and whining while couples discussed a relationship difficulty in the laboratory, providing evidence of construct validity. The properties of the RAM have also been investigated using a Japanese version of the instrument (Kawashima et al., 2008), supporting Fincham and Bradbury’s findings about the two-factor structure, reliability, and validity.

Apology: Whether the partner expressed apology was measured with the following three items ($\alpha = .90$); “X was remorseful”, “X made amends”, and “X apologized for what he/she did”.

Forgiveness: Forgiveness was measured using the Emotional Forgiveness Scale (EFS; Worthington et al., 2007) and the Decisional Forgiveness Scale (DFS; Worthington et al., 2007). The EFS consists of eight items ($\alpha = .80$) which measure forgiveness-related emotions. The DFS consists of eight items ($\alpha = .78$) which measure forgiveness-related behavioural intentions. The subscale scores were averaged to produce an overall forgiveness score for this measure. Example items include “if I see X, I will act friendly” (DFS), and “I’m mad about what happened” (EFS; reverse scored).

Validation of the EFS and DFS was presented in an unpublished conference paper (Worthington et al., 2007), some details from which were also reported in Hook et al. (2012). Worthington et al. (2007) reported alpha values of .69 to .83 for the EFS, and .82 to .86 for the DFS. The two-factor structure of the scale was tested and supported via confirmatory factor analysis.

Convergent validity was established by correlations with other measures of forgiveness, as well as with implicit and behavioural indicators of forgiveness. Concurrent validity was established by correlations with empathy and anger, and discriminant validity was supported by a lack of correlation to measures of social desirability and religious commitment.

Forgiveness: Forgiveness was also measured using the Transgression-Related Interpersonal Motivations inventory—18-item version (TRIM-18; McCullough et al., 2006). Since trust was a primary focus of the research, the item; “I trust X” was dropped from this measure to avoid conceptual overlap. This measure consisted of three subscales: revenge (five items; $\alpha = .91$), avoidance (six items; $\alpha = .92$), and benevolence (six items; $\alpha = .89$). The subscale scores were averaged to produce an overall forgiveness score for this measure; revenge and avoidance were reverse scored such that higher scores represent more forgiveness. Information on the psychometric properties of the TRIM-18 and example items are presented with the measures for Study 1.

Finally, participants were asked to describe the nature of the relationship with their partner, by selecting the closest option from a drop-down list.

4.2 Results

4.2.1 Descriptive statistics

For female participants, 67 (51.1%) wrote about transgressions committed by a male and 64 (48.9%) wrote about those committed by a female. For male participants, 31 (58.5%) wrote about a female and 22 (41.5%) wrote about a male. 67 participants (36.4%) wrote about transgressions committed by friends, 52 (28.3%) wrote about relatives, 30 (16.3%) wrote about a spouse, 28 (15.2%) wrote about romantic partners, four (2.2%) wrote about a work colleague, and three (1.6%) placed themselves in the ‘other’ category. The transgressions recalled had occurred between one day and 32 years prior to the survey ($M = 19.60$ months, $SD = 38.57$). Participants generally agreed that the event

was still painful for them ($M = 5.29$, $SD = 1.45$). 95 participants (51.6%) agreed that the transgressor had offered an apology ($M = 3.60$, $SD = 1.79$).

4.2.2 Bivariate correlations

Table 9 displays Pearson's correlations for the associations between key Study 2 variables. Like the results from Study 1, both trust and commitment displayed strong positive correlations with forgiveness. Also similar to Study 1 was the fact that, despite commitment and trust being strongly related to one another, they exhibited divergent associations with the variables signifying negative emotional responses to the transgression, specifically hurtfulness and rumination. However, unlike the pattern of correlations from Study 1, commitment was unrelated to these two variables and trust was significantly negatively related.

Finally, trust exhibited significant negative correlations with both attributions measures as well as with exploitation risk. Similarly, commitment exhibited a significant positive correlation with relationship value. Although unsurprising, these associations are implied by the proposed explanatory mediation analyses.

4.2.3 Partial correlations

Table 10 displays partial correlations, estimating the unique associations trust and commitment had with Study 2's key outcome variables. These results are consistent with the hypotheses as well as with the data from Study 1. Specifically, trust and commitment were both significantly positively associated with each forgiveness measure. However, trust displayed moderate negative correlations with hurtfulness and rumination once commitment was controlled for. Also as expected, commitment was significantly associated with increased hurtfulness and rumination once trust was controlled for. These results support the predictions made in hypotheses 1a, 1b, 2a, and 2b.

Table 9

Zero-order Correlations between Study 2 Variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---------|---------|---------|---------|---------|---------|--------|--------|---------|--------|---------|---------|-------|------|
| 1. Trust | | | | | | | | | | | | | | |
| 2. Commitment | .51*** | | | | | | | | | | | | | |
| 3. Satisfaction | .75*** | .67*** | | | | | | | | | | | | |
| 4. Investment | .48*** | .78*** | .64*** | | | | | | | | | | | |
| 5. Forgiveness (EFS/DFS) | .51*** | .64*** | .49*** | .52*** | | | | | | | | | | |
| 6. Forgiveness (TRIM) | .50*** | .68*** | .54*** | .51*** | .88*** | | | | | | | | | |
| 7. Hurtfulness | -.44*** | -.05 | -.29*** | .03 | -.20** | -.17* | | | | | | | | |
| 8. Rumination | -.40*** | .00 | -.25** | .07 | -.32*** | -.27*** | .72*** | | | | | | | |
| 9. Relationship value | .62*** | .81*** | .72*** | .72*** | .67*** | .71*** | -.14 | -.14 | | | | | | |
| 10. Exploitation risk | -.55*** | -.37*** | -.46*** | -.27*** | -.54*** | -.54*** | .41*** | .47*** | -.43*** | | | | | |
| 11. Attributions (Causal) | -.36*** | -.21** | -.37*** | -.11 | -.27*** | -.30*** | .33*** | .28*** | -.31*** | .43*** | | | | |
| 12. Attributions (Responsibility/Blame) | -.63*** | -.32*** | -.50*** | -.24** | -.49*** | -.45*** | .49*** | .47*** | -.42*** | .60*** | .55*** | | | |
| 13. Attachment avoidance | -.18* | -.23** | -.30*** | -.25*** | -.20** | -.23** | .15* | .07 | -.26*** | .10 | .05 | .15* | | |
| 14. Attachment anxiety | -.08 | -.01 | -.10 | -.07 | -.11 | -.07 | .12 | .25** | -.06 | .14 | .20** | .14 | .24** | |
| 15. Apology | .41*** | .29*** | .46*** | .27*** | .28*** | .28*** | -.06 | -.07 | .38*** | -.21** | -.28*** | -.30*** | -.18* | -.06 |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 10

Partial Correlations between Study 2 Predictor and Outcome Variables

| Controlling for: | Commitment | Trust |
|-----------------------|------------|------------|
| | Trust | Commitment |
| Forgiveness (EFS/DFS) | .27*** | .52*** |
| Forgiveness (TRIM) | .24** | .57*** |
| Hurtfulness | -.48*** | .23** |
| Rumination | -.46*** | .26*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

4.2.4 Mediation analyses

To test the proposed explanations for the divergent effects of trust and forgiveness on Study 2's outcome variables, I conducted a series of mediation analyses using Hayes' (2018) PROCESS macro v3.4 (5,000 iterations, percentile, 95% CIs). Note that for the analyses in this section, indirect effects do not have associated p-values; significance for indirect effects is instead assessed via the 95% confidence intervals.

Testing the indirect effects of trust via exploitation risk. The first set of analyses attempted to explain the effect of trust on Study 2's outcome variables; forgiveness (EFS/DFS), forgiveness (TRIM), hurtfulness, and rumination. The mediator variable was exploitation risk, and commitment was controlled for in each analysis. Figures 1 to 4 display the results of these analyses. The data were consistent with hypothesis 1c; trust had a negative indirect effect on forgiveness via exploitation risk. For the models involving forgiveness, inclusion of exploitation risk as a mediator reduced the direct effect of trust to non-significance. Further supporting hypothesis 1c; trust had a negative indirect effect on hurtfulness and rumination via exploitation risk. Trust maintained a significant negative direct effect on hurtfulness and rumination in these analyses.

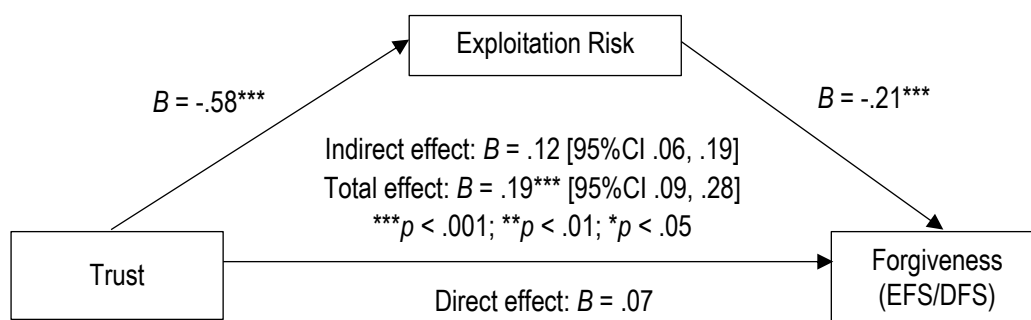


Figure 1. The indirect effect of trust on forgiveness (EFS/DFS) via exploitation risk, controlling for commitment.

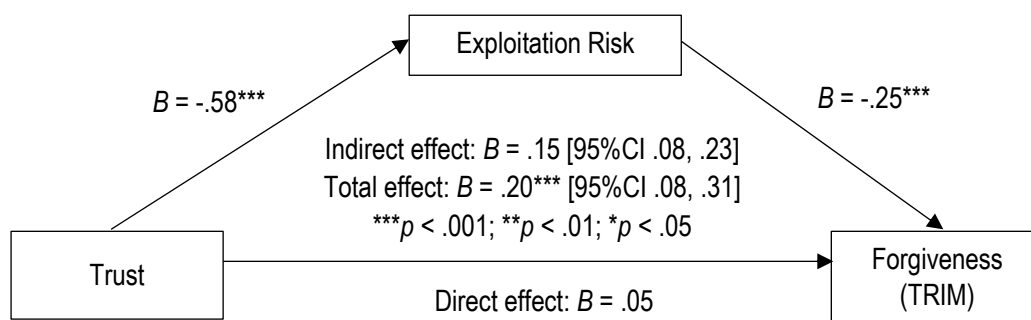


Figure 2. The indirect effect of trust on forgiveness (TRIM) via exploitation risk, controlling for commitment.

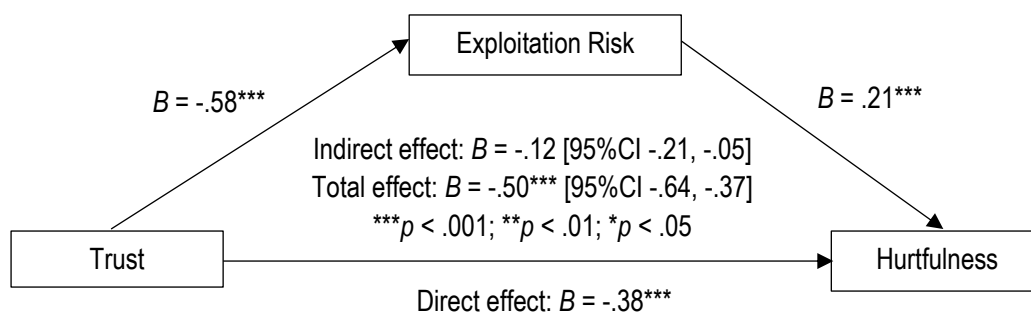


Figure 3. The indirect effect of trust on hurtfulness via exploitation risk, controlling for commitment (study 2).

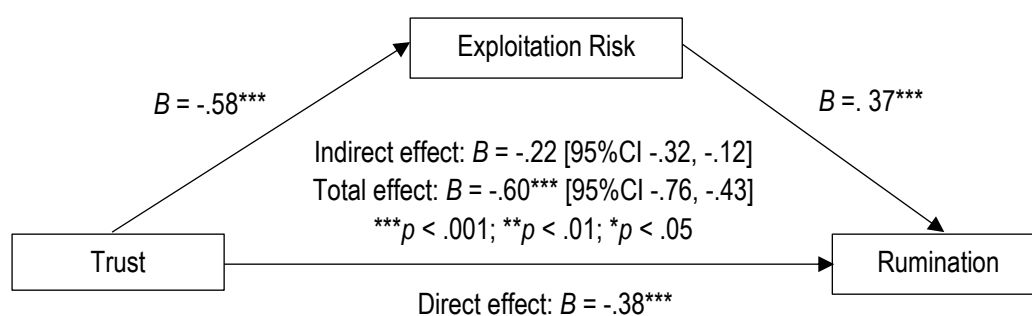


Figure 4. The indirect effect of trust on rumination via exploitation risk, controlling for commitment (study 2).

Testing the indirect effects of trust via attributions. The second set of analyses attempted to explain the effect of trust on Study 2's outcome variables; forgiveness (EFS/DFS), forgiveness (TRIM), hurtfulness and rumination. Causal and responsibility/blame attributions were both included as mediator variables, and commitment was controlled for in each analysis. Figures 5 to 8 display the results of these analyses. The data were consistent with hypothesis 1c; trust had a positive indirect effect on forgiveness via responsibility/blame attributions. For the models involving forgiveness, inclusion of responsibility/blame and causal attributions as mediator variables reduced the direct effect of trust to non-significance. Further supporting hypothesis 1c, trust had a negative indirect effect on hurtfulness and rumination via responsibility/blame attributions⁷. In these analyses, trust maintained a significant negative direct effect on hurtfulness and rumination. Causal attributions did not significantly mediate the effects of trust in any analysis.

⁷ Since comparing mediator variables was not a focus of the thesis, these have been evaluated in separate models. However, including exploitation risk, blame attributions, and causal attributions in a multiple mediation model does not alter the substantive conclusions of Chapter 4 or Chapter 5.

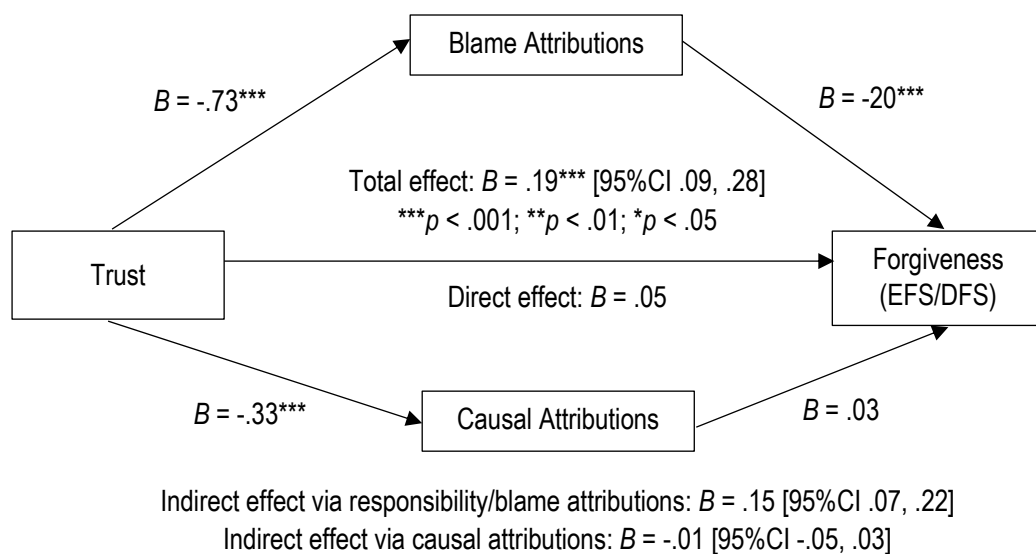


Figure 5. The indirect effect of trust on forgiveness (EFS/DFS) via causal and responsibility/blame attributions, controlling for commitment.

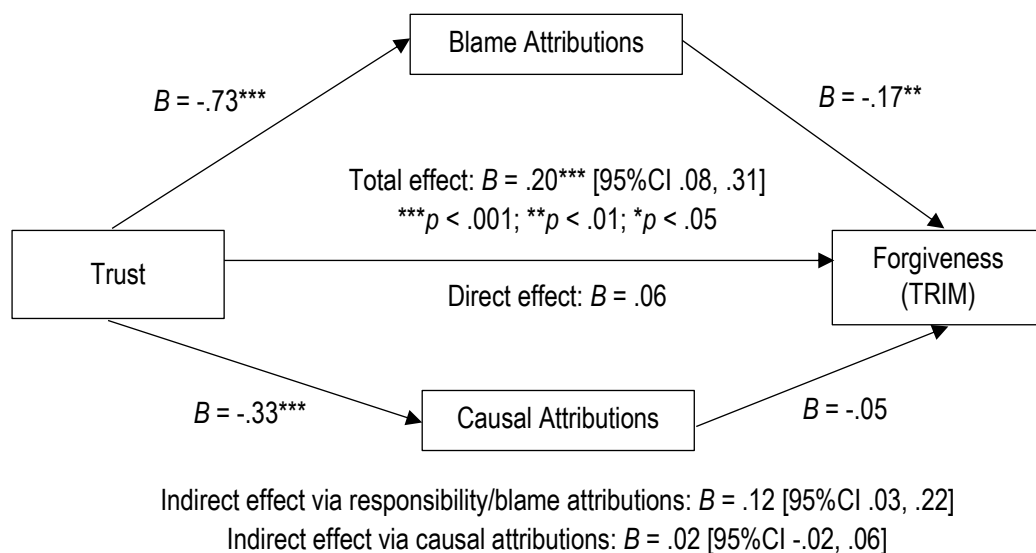


Figure 6. The indirect effect of trust on forgiveness (TRIM) via causal and responsibility/blame attributions, controlling for commitment.

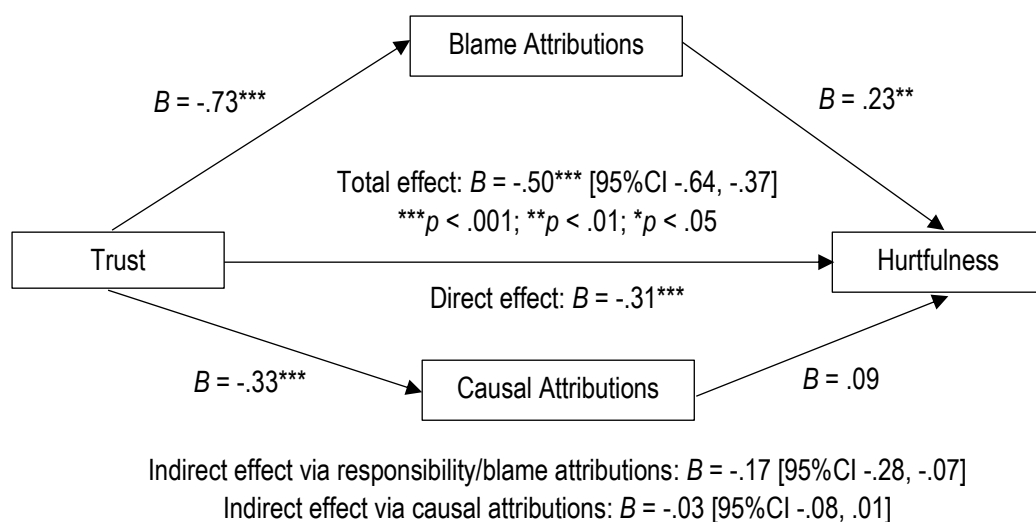


Figure 7. The indirect effect of trust on hurtfulness via causal and responsibility/blame attributions, controlling for commitment (study 2).

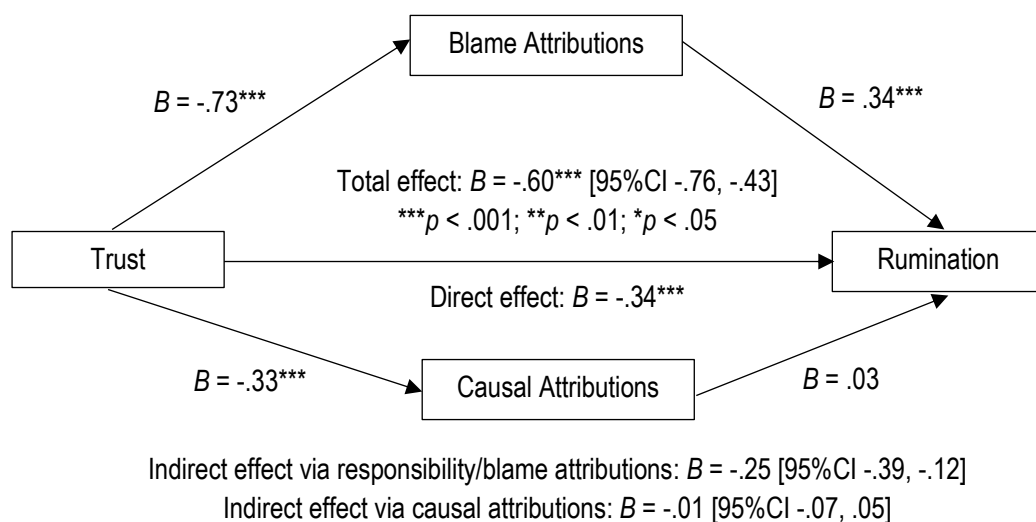


Figure 8. The indirect effect of trust on rumination via causal and responsibility/blame attributions, controlling for commitment (study 2).

Testing the indirect effects of commitment via relationship value. The final set of analyses attempted to explain the effect of commitment on Study 2's outcome variables; forgiveness (EFS/DFS), forgiveness (TRIM), hurtfulness and rumination. The mediator variable was relationship value, and trust was controlled for in each analysis. Figures 9 to 12 display the results of these analyses. The data

were consistent with hypothesis 2d; commitment had a positive indirect effect on forgiveness via relationship value. Commitment maintained significant positive direct effects on forgiveness. However, hypothesis 2c was not supported; although commitment was associated with increased relationship value in the models, relationship value was not significantly associated with hurtfulness or rumination. In fact, although not significant, the estimate for the indirect effect was even negative for rumination. Taken together, these analyses do not support relationship value as the proposed mediator of the association between commitment and increased distress when controlling for trust.

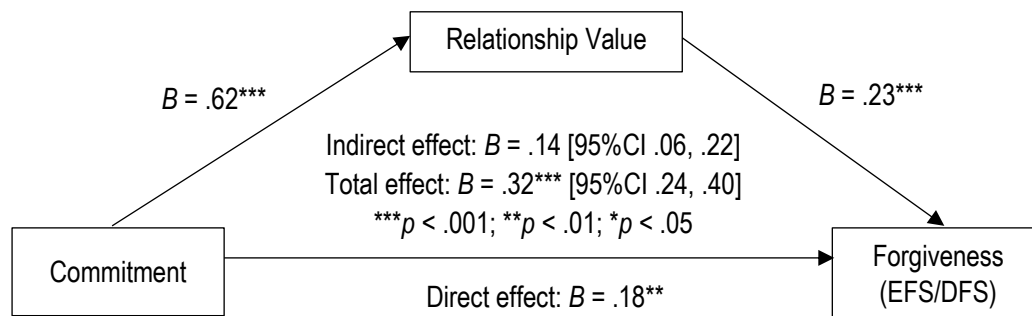


Figure 9. The indirect effect of commitment on forgiveness (EFS/DFS) via relationship value, controlling for trust.

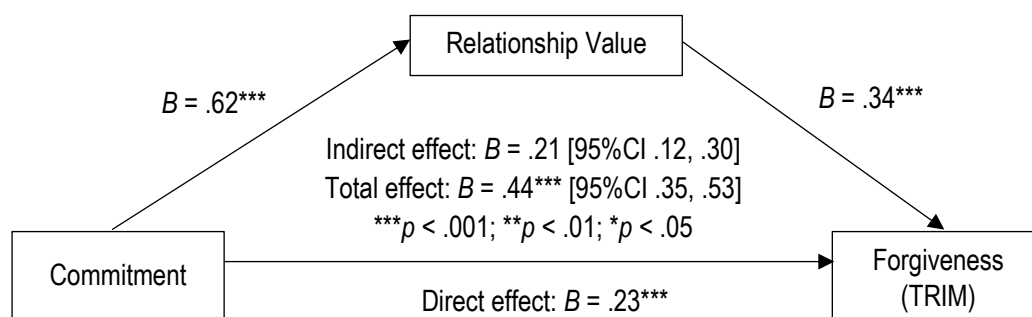


Figure 10. The indirect effect of commitment on forgiveness (TRIM) via relationship value, controlling for trust.

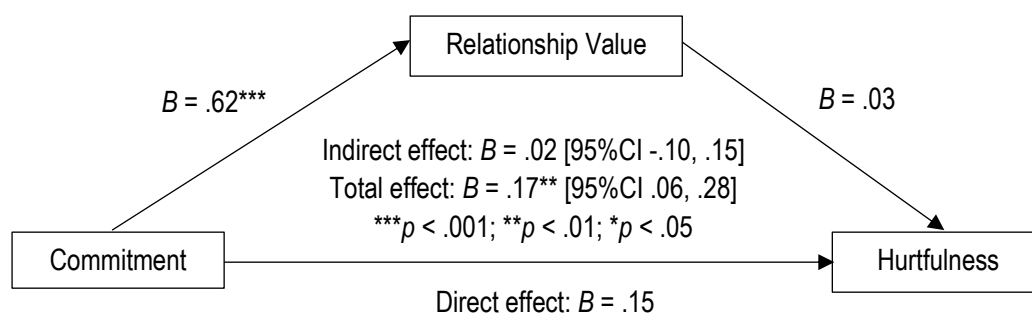


Figure 11. The indirect effect of commitment on hurtfulness via relationship value, controlling for trust (study 2).

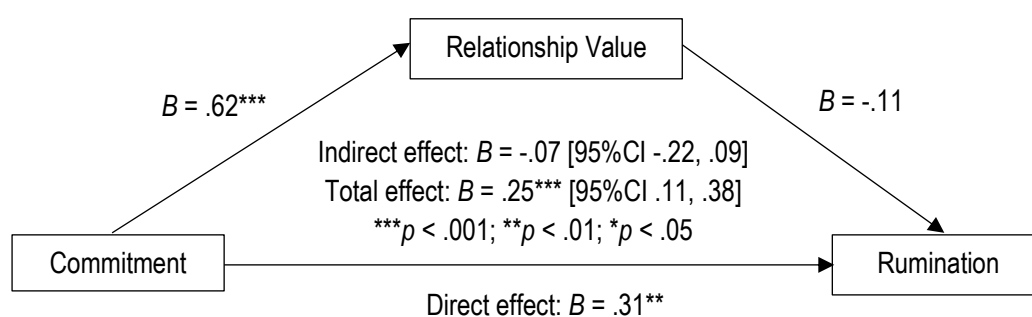


Figure 12. The indirect effect of commitment on rumination via relationship value, controlling for trust (study 2).

4.2.5 Control analyses

The final stage of the Study 2 analyses was investigation of possible confounds or limitations to the pattern of associations represented by the partial correlations. This was done using the same approach as for Study 1.

Specifically, two dichotomous variables were investigated; the gender of the participant, and the gender of the transgressor they wrote about. In both cases, partial correlations were calculated for each group to determine if the same conclusions could be drawn regarding the unique effects of trust and commitment. The purpose of these analyses was not to enable statistical comparison of the partial

correlation coefficient between groups, but merely to examine whether the same substantive conclusions can be drawn for each group.

Tables 11 and 12 display the results of these analyses. Unlike the results for Study 1, the substantive conclusions did not appear to be altered in a meaningful way by accounting for the gender of the participant or the transgressor.

Table 11

Partial Correlations between Study 2 Predictor and Outcome Variables, Sorted by Participant Gender

| | | Controlling for: | Commitment | Trust |
|--|-----------------------|------------------|------------|------------|
| | | | Trust | Commitment |
| Female participants (<i>n</i> = 131) | Forgiveness (EFS/DFS) | | .28** | .56*** |
| | Forgiveness (TRIM) | | .28** | .63*** |
| | Hurtfulness | | -.50*** | .17 |
| | Rumination | | -.50*** | .25** |
| Male participants (<i>n</i> = 53) | Forgiveness (EFS/DFS) | | .35* | .36** |
| | Forgiveness (TRIM) | | .25 | .41** |
| | Hurtfulness | | -.45** | .36** |
| | Rumination | | -.36** | .29* |

Note. ****p* < .001; ***p* < .01; **p* < .05.

Table 12

Partial Correlations between Study 2 Predictor and Outcome Variables, Sorted by Transgressor Gender

| | | Controlling for: | Commitment | Trust |
|---|-----------------------|------------------|------------|------------|
| | | | Trust | Commitment |
| Female transgressor (<i>n</i> = 95) | Forgiveness (EFS/DFS) | | .29** | .43*** |
| | Forgiveness (TRIM) | | .19 | .49*** |
| | Hurtfulness | | -.56*** | .25* |
| | Rumination | | -.44*** | .23* |
| Male transgressor (<i>n</i> = 89) | Forgiveness (EFS/DFS) | | .28** | .61*** |
| | Forgiveness (TRIM) | | .34** | .68*** |
| | Hurtfulness | | -.38*** | .22* |
| | Rumination | | -.49*** | .28** |

Note. ****p* < .001; ***p* < .01; **p* < .05.

The remaining three variables I controlled for were continuous: attachment avoidance, attachment anxiety, and time since the offence occurred. The influence of these variables was assessed by also controlling for their influence when estimating the partial correlations, to determine whether the inclusion of these variables would alter the substantive conclusions that can be drawn from the data. Table 13 displays the results of this analysis. Point estimates change very little after inclusion of these variables, and the substantive conclusions remain unchanged.

Table 13

Partial Correlations between Study 2 Predictor and Outcome Variables, Additionally Controlling for Attachment Avoidance, Attachment Anxiety, and Time Since the Offence Occurred

| Controlling for: | Commitment | Trust |
|-----------------------|------------|------------|
| | Trust | Commitment |
| Forgiveness (EFS/DFS) | .28*** | .52*** |
| Forgiveness (TRIM) | .25** | .56*** |
| Hurtfulness | -.46*** | .24** |
| Rumination | -.46*** | .25** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

4.3 Study 2 Discussion

Study 2 investigated the unique effects of trust and commitment in a recall study of real-life transgressions, exploring potential mechanisms for the effects identified in Study 1. Although some differences were found to Study 1, overall the results supported the generalisability of the divergent effects of trust and commitment in these new contexts, broadening the findings to include non-romantic relationships, transgressions other than infidelity, and real-life transgressions. Mediation analyses for trust were consistent with the explanations proposed. However, although relationship value mediated the beneficial effects of commitment on forgiveness, it failed to mediate the detrimental effects on hurtfulness and rumination.

Consistent with Study 1 findings and the literature reviewed in Chapter 1, both trust and commitment had positive bivariate associations with forgiveness. Also consistent with Study 1 was the fact that despite being substantially correlated with one another, trust and commitment had different zero-order relations with hurtfulness and rumination. However, a difference from Study 1 was the pattern of these correlations; commitment was unrelated to hurtfulness and rumination in Study 2, whereas trust had beneficial effects.

One surprising finding was the high correlation between commitment and our forgiveness measures—considerably higher than is typically reported (Fehr et al., 2010; Finkel, 2016). This was also evident in the partial correlations, where commitment had a sizeable association with forgiveness even after controlling for trust. One possible explanation for this is the recall nature of the study and specifics of how the questions were worded. Given that many transgressions occurred years prior to the study, assessing trust and commitment before the transgression was not possible. Instead, current levels of trust and commitment were assessed. Thus, the high correlation between commitment and forgiveness presumably reflects changes to commitment as a result of forgiveness or unforgiveness of the relatively serious transgressions reported in recall studies. Individuals who had not forgiven the transgression would be likely to down-regulate dependence, likely inflating the correlation between commitment and forgiveness relative to just the association with pre-existing commitment levels. A second possible explanation for this high correlation is the fact that participants were asked to think of someone with whom they were in an ongoing relationship. Essentially excluding individuals who had forgiven but ended the relationship (and thus were not committed), may also have inflated the correlation between commitment and forgiveness. Given that Studies 1 and 3 do not share these limitations, this is not a serious methodological concern for the overall thesis, but does appear to be influencing the results of Study 2.

As in Study 1, I also estimated the unique effects of trust and commitment. Trust and commitment were each related to both forgiveness measures in a beneficial manner. Although this

finding for commitment is consistent with the arguments put forth in Chapter 3, it diverged from the results of Study 1, and is in mixed agreement with the literature. Specifically, bivariate associations between commitment and forgiveness are, of course, expected. However, studies which examine trust as well tend to find that it accounts for the correlation with forgiveness (Laifa et al., 2018; Strelan et al., 2017). This was not the case in Study 2. This discrepancy may be for similar reasons outlined earlier; the fact that current rather than pre-existing trust and commitment were assessed. Another possibility is that this may reflect a difference between recall and scenario designs. Research has shown that the importance of affective constructs is pronounced in recall methodologies (Fehr et al., 2010). Regardless, the finding that commitment did not exhibit detrimental effects on forgiveness even after controlling for trust was consistent with the results of Study 1 for the TRIM scale, reinforcing the suggestion that the negative associations found for the Rye forgiveness scale (Rye et al., 2001) were a feature of that particular measure.

The partial correlations with hurtfulness and rumination were broadly consistent with the results of Study 1. As per hypothesis 1a, trust was related to lower levels of hurtfulness and rumination after controlling for commitment; this effect appeared to be of a greater magnitude compared to Study 1. As per hypothesis 2a, commitment was related to increased hurtfulness and rumination once trust was controlled for. These findings demonstrate that the divergent effects of trust and commitment on distress can be observed outside the context of hypothetical research, infidelity transgressions, and romantic relationships. The fact that this effect still emerged given the longer time frames involved in this study is also an intriguing finding. One might expect that the association between commitment and increased distress would be relatively short in duration; however, these transgressions occurred an average of almost two years prior to the study. The findings of Study 2 raise the possibility that increased distress associated with commitment may still be identifiable over longer periods of time.

The data were consistent with the proposed mediation models for trust, specified in hypothesis 1c. Controlling for commitment, causal attributions did not mediate the beneficial effects of trust.

However, responsibility/blame attributions and exploitation risk each mediated the effects of trust on hurtfulness, rumination, and forgiveness. Significant direct effects for trust remained in the mediations for hurtfulness and rumination. These findings support the suggestion from Chapter 3 that trust has beneficial associations with hurtfulness, rumination, and forgiveness in part due to reduced perceptions of risk in re-engaging with an offender. Responsibility/blame attributions and exploitation risk appeared to be better mediators of the effects of trust, although this finding will be re-evaluated in Study 3 before drawing strong conclusions.

Results supported the mediation models proposed by hypothesis 2d. Relationship value was found to mediate the beneficial effects of commitment on both forgiveness measures, although significant direct effects remained in both analyses. On the other hand, the mediation models for the detrimental effects of commitment on distress via relationship value, specified by hypothesis 2c, were not supported. Although commitment was associated with increased relationship value in the two models as predicted, relationship value was not significantly associated with hurtfulness or rumination. In fact, although not significant, the estimate for the indirect effect was even negative for rumination—the opposite direction to predictions. Accordingly, Study 2 did not support relationship value as a mediator of the detrimental association between commitment and hurtfulness or rumination.

Two comments should be made in relation to this finding. Firstly, this may help explain a pattern of results found by McCullough, Luna, et al. (2010). In McCullough, Luna, and colleagues' second study, commitment was moderately correlated with transgression painfulness, but relationship value was uncorrelated with painfulness. This is in line with the results of the current study, which suggest that commitment does exhibit negative effects, but relationship value does not account for them. Secondly, there were hints of a suppression effect for the mediation analyses involving relationship value, as the direct effect was larger than the total effect for rumination. This may suggest that commitment has both positive and negative effects through different pathways—a proposition that will be evaluated further in Study 3. Taken together, these findings support the detrimental effects of

commitment after controlling for trust. However, they refute the explanation that greater value placed on the relationship and concerns about loss can account for this effect.

As in Study 1, control analyses were conducted to check for substantive changes to the pattern of results. These variables did not appear to alter the pattern of results from the overall sample. Most importantly, unlike Study 1, accounting for the effects of gender did not create noticeable differences in the pattern of results. This suggests that the Study 1 observations regarding differences between males and females may have been specific to infidelity transgressions as discussed in Chapter 2.

Most key limitations for Study 2 have already been raised while discussing the findings above. To summarise, perhaps the largest limitation of this study was the way trust and commitment were measured, assessing current rather than pre-existing levels of these variables. As outlined, this can be considered both a limitation and a strength, as the hypothesised effects emerged anyway. Another caveat is the differences in bivariate correlations present in Study 2; in particular, the enhanced correlation of commitment with forgiveness. Although these were not inconsistent with any of the formal hypotheses, these findings do suggest that contextual factors may have strong influences on at least the zero-order associations involving trust and commitment. As mentioned, one such contextual factor may be that commitment is a more important predictor in ongoing relationships, representing a third limitation of the study's generalisability.

In summary, Study 2 found support for seven of the eight hypotheses presented in Chapter 3.8. Study 2 also extended the generalisability of the unique effects of trust and commitment to include a range of transgressions and relationship types in the context of real-life transgressions. The support for hypotheses 1c and 2d also suggests that trust and commitment may be proximate mechanisms for assessing relationship value and exploitation risk, as has been suggested in evolutionary accounts of forgiveness (McCullough, Kurzban, & Tabak, 2010, 2013). However, hypothesis 2c, that relationship value would mediate the detrimental effects of commitment, was not supported. Accordingly, a primary focus of Study 3 will be evaluating alternative explanations for this effect. Relationship value will

nonetheless be retained as a mediator in Study 3, to assess the possibility of suppression effects that were hinted at in Study 2. Another key concern is the fact that pre-existing trust and commitment were not able to be assessed in Study 2. Trust and commitment were assessed prior to the transgression in Study 1, but Study 1 did not use real-life transgressions. Accordingly, another key goal of Study 3 is overcoming both limitations in the same study to strengthen the results. Finally, repeating the trust mediations for distress specified by hypothesis 1c will increase the robustness of those arguments; confirming the indirect effects via exploitation risk and responsibility/blame attributions is a tertiary goal of Study 3.

Chapter 5: Study 3

In Study 1, I was able to examine the effects of trust and commitment without the possibility of the transgression influencing these ratings. However, the study did not use real transgressions. Although Study 2 addressed this limitation by asking about actual transgressions, the recall nature of the study meant that ratings of trust and commitment may have been influenced by events related to the transgression. In Study 3, I aimed to overcome both these limitations in the same study by again using actual transgressions, but this time using a prospective design where trust and commitment were measured before the hurtful event occurred. In addition, Study 3 aimed to build on the mediation analyses from Study 2, exploring an alternative explanation for the detrimental effects of commitment, given the failure of relationship value to mediate this effect. Finally, Study 3 aimed to provide another replication of other key effects from Studies 1 and 2.

5.1 Explaining the Effects of Commitment through Mutuality of Dependence

Given the failure of relationship value to account for the detrimental effects of commitment identified in Studies 1 and 2, Study 3 evaluates a second potential explanation for this effect. This explanation rests on research which has shown that wellbeing in relationships depends not only on commitment, but also on coordinating and maintaining mutual commitment levels across partners. Based on theory and research on mutual commitment, non-mutuality would be expected to increase distress. Thus, if participants with higher commitment levels after controlling for trust were in fact overcommitted relative to their partners, this could account for the detrimental effects of commitment. Study 3 proposes that after controlling for trust, the detrimental effects of commitment are because highly committed people are more likely to be in relationships characterised by non-mutual dependence. To explore this possibility further, this section summarises the perspectives on mutuality from Chapter 3, as well as reviewing other studies on the links between mutuality and distress.

As outlined in Chapter 3, a common feature of models which include both trust and commitment is a focus on maintaining mutual dependence. In interdependence theory, mutuality of dependence is a key structural feature of interdependence dilemmas. Interaction partners may be relatively equal in the ability to affect each other's outcomes; alternatively, non-mutual dependence can lead to power imbalances and increased vulnerability. The mutual cyclical growth model shares this focus on mutuality. As described earlier, the reciprocal nature of this model allows partners to coordinate shifts in motivation away from self-protection and towards prioritising the relationship. Maintaining mutual dependence is proposed to be an important function of the mechanisms for coordinating trust and commitment. Finally, the risk regulation model also highlights the importance of mutual commitment levels. According to this theory, non-mutuality is considered a barrier to coordination, as this introduces power differentials in partners' motivations toward self-interest or relationship-promotion.

A shared proposition of these models is that non-mutuality will also be associated with distress and instability. Studies outside of these models have examined this proposition as well. Drigotas et al. (1999) conducted two longitudinal studies examining mutual commitment levels in dating relationships and marriages. Mutuality of commitment was found to predict wellbeing even after accounting for the effects of commitment. Relevant to the current propositions, non-mutual commitment was also associated with increased levels of negative emotion. Other studies on mutual commitment include Weigel (2008), who investigated whether non-mutual commitment levels were associated with different communication strategies. Weigel found that non-mutual commitment levels reduced participants' willingness to communicate feelings of commitment to their partners. Once again, non-mutual commitment levels were associated with the experience of negative emotion. Weigel (2010) evaluated an explicitly dyadic model of mutuality of commitment, finding that various markers of relationship quality were associated with mutual commitment. Given the links between non-mutual commitment and distress outlined in the theories and research reviewed here, mutuality of commitment may be able to

explain the results from Studies 1 and 2. Accordingly, Study 3 aimed to evaluate the possibility that mutuality of commitment might mediate the detrimental effects of commitment on our outcome variables. If, after controlling for trust, more committed participants were in fact *overcommitted* relative to partners, this could account for the detrimental effects of commitment observed in the previous studies.

5.2 Formal Statement of Hypotheses for Study 3

Based on the results of Studies 1 and 2 and the theoretical arguments outlined above, the following hypotheses will be evaluated in Study 3. In general, these hypotheses aim to confirm previous findings in a prospective design, and are analogous to the corresponding hypotheses from Study 2. However, hypothesis 2cii replaces hypothesis 2c from Study 2, testing the new proposition for explaining the detrimental effects of commitment and confirming the falsification regarding relationship value. Because the key unanswered question from Study 2 was explaining the detrimental effects of commitment on distress, and due to concerns about survey length, Study 3 focussed solely on the distress-related outcome measures and hypotheses.

Hypothesis 1a: When controlling for commitment, higher trust will be associated with less distress—that is, trust will have a negative correlation with hurtfulness, distress, psychological tension, and rumination.

Hypothesis 1c: When controlling for commitment, the beneficial effect of trust on these variables will be mediated by exploitation risk and attributions.

Hypothesis 2a: When controlling for trust, higher commitment will be associated with greater distress—that is, commitment will have a positive correlation with hurtfulness, distress, psychological tension, and rumination.

Hypothesis 2cii: When controlling for trust, the detrimental effect of commitment on these variables will not be mediated by relationship value. Instead, these effects will be mediated by mutuality of dependence.

5.3 Method

I conducted Study 3 by recruiting undergraduate psychology students, who received course credit for their participation. As Study 3 used a prospective design, data were collected at two time points. The aim of the first survey (henceforth referred to as the T1 survey) was simply to get participants to select a close relationship, and to obtain measures of trust and commitment for that relationship before any specific hurtful event had occurred. In the second survey (referred to as the T2 survey), participants reported on a hurtful event which had happened in the relationship since completing the T1 survey, and were asked questions about their emotional responses to this transgression. The design of this study was based upon similar work by Gabriels and Strelan (2018). Ethics approval was obtained from the University of Adelaide's Human Research Ethics Committee prior to commencing the study.

5.3.1 Participants

171 South Australian psychology undergraduates completed the T1 survey. 101 of these participants returned to complete the T2 survey. After excluding unsuitable responses, 71 responses were retained for analysis (61 females, 10 males; $Mdn_{age} = 19$, $SD = 6.18$). Responses were excluded for four reasons. Firstly, 4 participants completed the T2 survey multiple times. Secondly, 6 participants reported that nothing hurtful had happened in the time between T1 and T2, either in their written description or by agreeing in validity checks that they had provided a fake event. Third, 9 participants provided a different name at T1 than they did at T2. Since whether T1 names matched T2 names was ambiguous in a few cases (e.g., writing "H" at T1 and "Harry" at T2), two independent raters judged

whether the T1 and T2 names matched. These raters agreed on the exclusion of 8 cases and disagreed on one further case. That case was excluded for the total of 9. Cohen's κ indicated a high level of inter-rater agreement ($\kappa = .94, p < .001$). Finally, 17 participants indicated that the hurtful event had happened prior to the T1 survey. This was measured by subtracting the number of days since the event occurred from the number of days between completing T1 and T2 surveys.

Power analysis was conducted for the mediation analyses, using the MedPower application (Kenny, 2017). This analysis suggested that the average power achieved⁸ for the single mediator models was .84. Thus, despite the smaller sample size, most key analyses appear to have been adequately powered. However, this analysis did also suggest that mediation models with relatively small indirect effects were likely subject to power concerns.

5.3.2 T1 procedure and measures

In the T1 survey, participants were asked to think of a specific person with whom they spent a lot of time, but who also sometimes did things that they found hurtful. This latter instruction was included in an attempt to elicit relationships in which a hurtful event was more likely to occur between T1 and T2, increasing the effective sample size.

The following scales are displayed in the order they were presented to participants. Unless otherwise indicated, scale items for both T1 and T2 measures use seven-point scales with the labels "strongly disagree", "disagree", "slightly disagree", "neither agree nor disagree", "slightly agree", "agree", and "strongly agree". Additionally, unless otherwise indicated, multi-item scales or subscales were averaged to produce an overall score, with negatively worded items being reverse-scored.

⁸ This analysis was based on the average standardised path coefficients observed amongst all Study 2 models with a single mediator, but excluding the models from Figures 11 and 12, as point estimates for their indirect effects were negligible or negative. Specifically, calculations were based on a standardised a path of $\beta = .55$, a standardised b path of $\beta = .37$, a standardised direct effect of $\beta = .23$, an alpha of .05, and the final sample size of $N = 71$.

To personalize the survey, participants wrote their partner's name in a textbox, which would automatically appear thereafter where relevant. Participants were also asked to describe the nature of their relationship with the partner, by selecting the best option from a drop-down list.

Partner-specific trust: Trust in the nominated partner was measured using the Dyadic Trust Scale (DTS; Larzelere & Huston, 1980). This measure consists of eight items ($\alpha = .90$). Information on the psychometric properties of the DTS and example items are presented with the measures for Study 1.

Commitment, Satisfaction, and Investment: Commitment to the relationship was measured using the Investment Model Scale (IMS; Rusbult et al., 1998). The IMS includes seven items which assess commitment level directly. Two of these items were dropped for this study: "I want our relationship to last forever", and "It is likely that I will date someone other than my partner within the next year". Therefore, the commitment measure used here consisted of five items ($\alpha = .89$). The IMS also includes three subscales assessing different components of commitment: satisfaction (five items, $\alpha = .95$), investment (five items, $\alpha = .73$), and quality of alternatives. Given that the items are specific to romantic relationships, the quality of alternatives subscale was not used in this study. Minor wording changes were also introduced to several items to adapt the scale for non-romantic relationships. Information on the psychometric properties of the IMS and example items are presented with the measures for Studies 1 and 2.

Participants were prompted to record or remember the name of the person they wrote about for part two of the survey. Participants were instructed that a link for part two of the survey would be sent out on a date close to the end of the university semester.

5.3.3 T2 procedure and measures

Approximately two months after T1 recruitment had begun—specifically, 67 days afterwards—the study was closed to new participants. Seven days after this date, a link was sent out via e-mail

allowing participants to access the T2 survey. The T2 survey was available for 21 days. T2 surveys were matched with their T1 counterparts using ID numbers associated with the university's research participation system. To ensure participants were thinking of the same person as at T1, participants were asked to provide the name of their partner at T2 as well. I also asked participants whether they still had contact with this person.

Participants were next asked to think of and describe a transgression that had happened since completing T1, where the partner they wrote about had done something that hurt them. To get them to reflect on the transgression, they were prompted to describe what had happened in a textbox, as well as how it had made them feel. I also asked how long ago the transgression had occurred.

Participants were then asked to respond to measures about the transgression and how they felt afterward. The following scales are displayed in the order they were presented to participants:

Hurtfulness: How hurtful the offence had been was measured with the following three items ($\alpha = .71$); "What X did was hurtful", "The event is still painful for me", and "Compared to other hurtful events in my life, this was the most hurtful".

Apology: Whether the partner expressed apology was measured with the following three items ($\alpha = .91$); "X was remorseful", "X made amends", and "X apologized for what he/she did".

Attributions: Attributions for the partner's hurtful behaviour were measured using statements from the Relationship Attribution Measure (RAM; Fincham & Bradbury, 1992). Attributions were assessed on three causal dimensions (causal locus, stability, and globality; three items, $\alpha = .59$), and three responsibility-blame dimensions (partner intent, motivation, and blame; three items, $\alpha = .79$). Information on the psychometric properties of the RAM and example items are presented with the measures for Study 2.

Distress: To measure how distressing the offence was, I used the same measure as for Study 1. Participants indicated whether they felt a range of negative emotions, using items taken from similar measures used in our lab. Two subscales were calculated based on the exploratory factor analysis

results from Study 1. Therefore, this measure consisted of two subscales; anger (8 items; $\alpha = .81$) and weakness (6 items; $\alpha = .76$). Further information about these items is presented with the measures for Study 1.

Psychological tension: Psychological tension was measured using nine items from Karremans et al. (2003). Three extra items were also added for the current study: “It has been easy to decide what to do next”, “I feel unsure and indecisive”, and “I don’t know what I want to do about it”. These items were included to assess more directly whether the tension experienced was due to motivational ambivalence and uncertainty. As was done for Study 1, one item (“I’ve experienced feelings of guilt”) was removed due to a low item-total correlation. Therefore, the measure of psychological tension used here consisted of 11 items ($\alpha = .89$). Information on the psychometric properties of this scale and example items are presented with the measures for Study 1.

Rumination: Rumination was measured using the Intrusiveness subscale of the Impact of Event Scale (IES; Horowitz et al., 1979). This subscale consists of seven items ($\alpha = .92$). Information on the psychometric properties of the IES and example items are presented with the measures for Study 2.

Relationship value: The extent to which participants perceived their relationship as useful and rewarding was measured using the Relationship Value subscale of the Relationship Value and Exploitation Risk scale (RVEX; Burnette et al., 2012). This subscale consists of five items ($\alpha = .86$).

Exploitation risk: The extent to which participants perceived their partner as a potential relationship risk was measured using the Exploitation Risk subscale of the RVEX (Burnette et al., 2012). This subscale consists of five items ($\alpha = .86$).

Information on the psychometric properties of the RVEX and example items are presented with the measures for Study 2.

Mutuality of dependence: Mutuality of dependence was measured using items from Weigel (2008). However, given that the alpha values for own commitment and perceived partner commitment in Weigel’s (2008) paper were .95 and .96 respectively, I used only a single item to measure each

construct. Thus, mutuality of dependence was assessed by administering the following two items: “Overall, how committed are you to your relationship with X?”, and “Overall, how committed do you think X is to the relationship?”. For this measure, I used 10-point scales with the labels “not committed at all” and “totally committed” at the endpoints.

Scores for this measure were calculated in two distinct ways. The first method was by subtracting the perceived partner commitment score from the participant’s commitment score. Thus, those with positive scores perceived themselves as more committed than the partner, those with negative scores perceived their partner as more committed, and those with scores close to zero perceived the commitment level as approximately mutual. Henceforth, this operationalisation of mutuality is referred to as a *relative commitment*.

The second variable was calculated by taking the absolute value of the previous score. Thus, scores close to zero represent approximately mutual perceived commitment, and larger scores indicate an imbalance in commitment. However, this set of scores does not convey information about whose commitment level was higher. Henceforth, this operationalisation of mutuality is referred to as a *commitment imbalance*.

Operationalising this measure in these two different ways allowed me to examine whether which participant was relatively more committed governs the effects of non-mutuality, or whether an imbalance in commitment caused problems for both partners alike. To elaborate using an example, it is possible that an imbalance in commitment level destabilises the relationship and hence is upsetting to both partners. If this is the case, we might expect distress to be more strongly related to the commitment imbalance score than to the relative commitment score—at least when using statistical methods which assume linearity. On the other hand, if commitment imbalance only causes distress to the more committed partner, we would expect the opposite pattern of associations. I investigate and discuss both of these possibilities in the results section.

Finally, participants completed two validity check items. Participants responded to the statements “I completed the questionnaire together with someone else”, and “I couldn’t think of something hurtful that X did so I made something up”. Response options were “true” or “false”.

5.4 Results

5.4.1 Descriptive statistics

27 (38.0%) participants thought of a romantic partner, 19 (26.8%) thought of a friend, 16 (22.5%) thought of a relative, five (7.0%) thought of a spouse, and four (5.6%) placed the person in the ‘other’ category. At T2, 66 participants (93.0%) still had contact with the person they wrote about, whereas five (7.0%) no longer had contact with their partner. Participants generally agreed that the event had been hurtful for them ($M = 6.01$, $SD = 0.78$), suggesting that the study captured sufficiently serious betrayals of trust. The transgressions recalled had occurred between one and 78 days prior to the survey ($Mdn = 11$, $SD = 14.00$). The shortest amount of time between a participant completing the T1 and T2 surveys was 12 days, and the longest was 80 days ($Mdn = 51$, $SD = 17.66$).

5.4.2 Bivariate correlations

Table 14 displays Pearson’s correlations for the associations between key Study 3 variables. Most notably, trust had significant negative associations with each of the five outcome variables for Study 3, consistent with the results from Study 2 rather than Study 1. Unlike either of the other studies presented in the thesis, commitment had significant negative correlations with two of the five outcome variables (anger and tension). The remaining three correlations for commitment were non-significant, but with negative point estimates.

Finally, similar to Study 1, trust exhibited significant negative correlations with both attribution measures as well as with exploitation risk, consistent with the proposed mediational explanations. Commitment exhibited a significant positive association with relationship value, also consistent with the

mediation model to be re-tested. However, commitment was not significantly associated with commitment imbalance or relative commitment. Trust had significant, moderate, and negative correlations with these variables, suggesting that after controlling for trust, commitment could be associated with commitment imbalance or relative commitment as implied by the proposed mediational explanation.

Based on the correlations between relative commitment, commitment imbalance and the other Study 3 measures, I decided to use commitment imbalance for all further analyses. As discussed in the method section, operationalising this measure in two different ways allowed me to examine whether uneven commitment levels only caused problems for the more committed partner, or whether imbalance was associated with negative outcomes for both partners alike. If an imbalance in commitment level destabilises the relationship generally and is upsetting to both partners, we would expect the Study 3 outcome variables to be more strongly related to the commitment imbalance score than to the relative commitment score—at least when using statistical methods which assume linearity. On the other hand, if commitment imbalance only increased negative outcomes for the more committed partner, we would expect the opposite pattern of correlations.

As the bivariate correlations in Table 14 show, commitment imbalance was significantly related to far more of the Study 3 variables than relative commitment. This implies a u-shaped association between relative commitment and the other Study 3 variables, where either high or low values of relative commitment were associated a greater degree of negative reactions. This interpretation was supported by examination of the scatterplots for each association. Although the scatterplots for commitment imbalance indicated linear associations, the scatterplots for relative commitment did tend to be u-shaped. Taken together, these results suggest that in general, assessing the absolute amount of imbalance in the relationship would be more useful than also taking into account which of the partners was more committed; at least for the outcome variables included here.

Table 14

Zero-order Correlations between Study 3 Variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|--|---------|---------|---------|--------|---------|--------|---------|---------|--------|--------|---------|--------|---------|--------|--------|
| 1. Trust | | | | | | | | | | | | | | | |
| 2. Commitment | .72*** | | | | | | | | | | | | | | |
| 3. Satisfaction | .85*** | .82*** | | | | | | | | | | | | | |
| 4. Investment | .34** | .49*** | .48*** | | | | | | | | | | | | |
| 5. Hurtfulness | -.31** | -.22 | -.26* | .08 | | | | | | | | | | | |
| 6. Apology | .52*** | .44*** | .54*** | .26* | -.27* | | | | | | | | | | |
| 7. Attributions (Causal) | -.48*** | -.38** | -.42*** | -.04 | .40*** | -.38** | | | | | | | | | |
| 8. Attributions (Responsibility/Blame) | -.42*** | -.32** | -.31** | -.02 | .67*** | -.27* | .59*** | | | | | | | | |
| 9. Distress (Anger) | -.37** | -.24* | -.27* | .04 | .65*** | -.31** | .36** | .51*** | | | | | | | |
| 10. Distress (Weakness) | -.25* | -.15 | -.23 | -.00 | .53*** | -.13 | .29* | .41*** | .34** | | | | | | |
| 11. Psychological tension | -.51*** | -.38** | -.46*** | -.06 | .61*** | -.31** | .49*** | .57*** | .59*** | .64*** | | | | | |
| 12. Rumination | -.34** | -.19 | -.25* | .10 | .73*** | -.23 | .46*** | .61*** | .56*** | .61*** | .69*** | | | | |
| 13. Relationship value | .66*** | .74*** | .73*** | .47*** | -.42*** | .56*** | -.44*** | -.51*** | -.28* | -.30* | -.41*** | -.39** | | | |
| 14. Exploitation risk | -.55*** | -.47*** | -.47*** | -.13 | .58*** | -.38** | .55*** | .61*** | .41*** | .45*** | .62*** | .64*** | -.58*** | | |
| 15. Relative commitment | -.26* | .15 | -.18 | .11 | .14 | -.24* | .16 | .02 | .03 | .30* | .20 | .11 | .06 | .23 | |
| 16. Commitment imbalance | -.37** | -.10 | -.35** | .09 | .34** | -.40** | .26* | .31** | .31* | .48*** | .50*** | .46*** | -.23 | .45*** | .60*** |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

5.4.3 Partial correlations

Table 15 displays partial correlations, estimating the unique associations trust and commitment had with Study 3's key outcome variables. These results are only partially consistent with the hypotheses and with the results from Studies 1 and 2. Although trust displayed significant negative correlations with 3 of the 5 outcome variables (with negative point estimates for the remaining two correlations), commitment was not significantly associated with any of the outcome variables after controlling for trust. Thus, these results provide only partial support for the hypotheses. While trust and commitment did have divergent effects, they were not opposite in sign as specified by the hypotheses, and as expected from the previous studies. Therefore these results were broadly consistent with hypothesis 1a, but did not support hypothesis 2a.

Table 15

Partial Correlations between Study 3 Predictor and Outcome Variables

| Controlling for: | Commitment | Trust |
|---------------------|------------|------------|
| | Trust | Commitment |
| Hurtfulness | -.22 | .00 |
| Distress (Anger) | -.29* | .03 |
| Distress (Weakness) | -.21 | .05 |
| Tension | -.37** | -.02 |
| Rumination | -.29* | .08 |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

5.4.4 Mediation analyses

To test the proposed explanations for the divergent effects of trust and commitment on Study 3's five outcome variables, I conducted a series of mediation analyses using Hayes' (2018) PROCESS

macro v3.4 (5,000 iterations, percentile, 95% CIs).⁹ Note that for the analyses in this section, indirect effects do not have associated p-values; significance for indirect effects is instead assessed via the 95% confidence intervals.

Testing the indirect effects of trust via exploitation risk. The first set of analyses attempted to explain the association between trust and Study 3's outcome variables; hurtfulness, distress (anger), distress (weakness), tension, and rumination. The mediator variable was exploitation risk, and commitment was controlled for in each analysis.

Figures 13 to 17 display the results of these analyses for each of the five outcome variables. The data were consistent with hypothesis 1c; exploitation risk significantly mediated the effects of trust on all five outcome variables. In each case, inclusion of exploitation risk as a mediator reduced the direct effect of trust to non-significance.

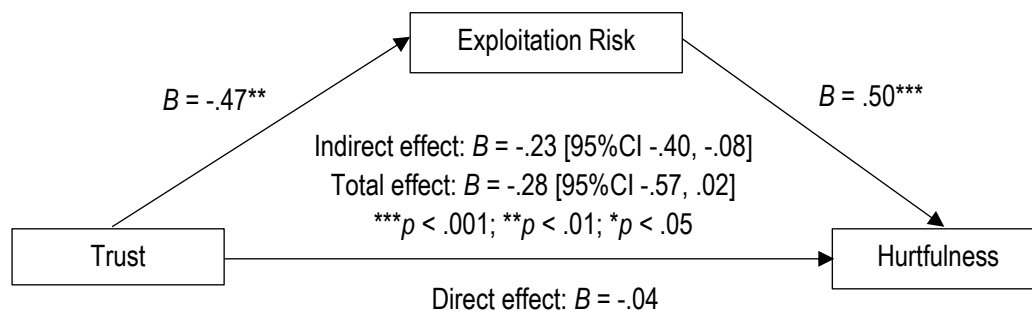


Figure 13. The indirect effect of trust on hurtfulness via exploitation risk, controlling for commitment (study 3).

⁹ It may seem odd to conduct mediation analysis to explain the effects of commitment, given that the partial correlations for commitment are non-significant. A significant correlation between predictor and outcome used to be considered necessary for a causal association to exist, and hence for mediation analysis to be appropriate (e.g., Baron & Kenny, 1986). However, current opinion is that this is not the case, and a correlation between the predictor and outcome is no longer considered a prerequisite for conducting mediation analysis (Hayes, 2009, 2018).

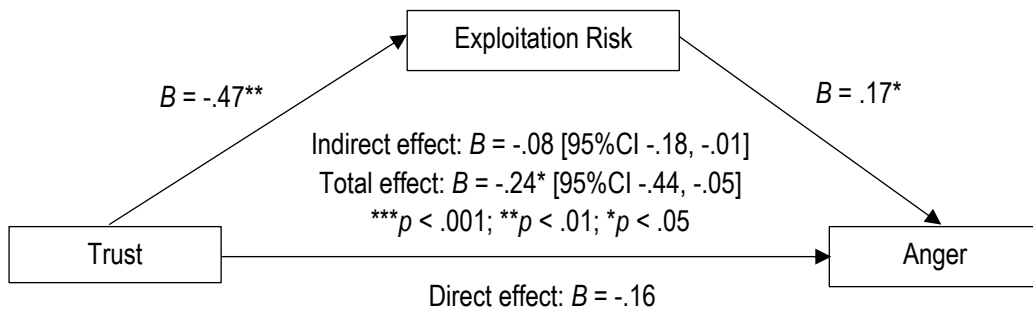


Figure 14. The indirect effect of trust on distress (anger) via exploitation risk, controlling for commitment.

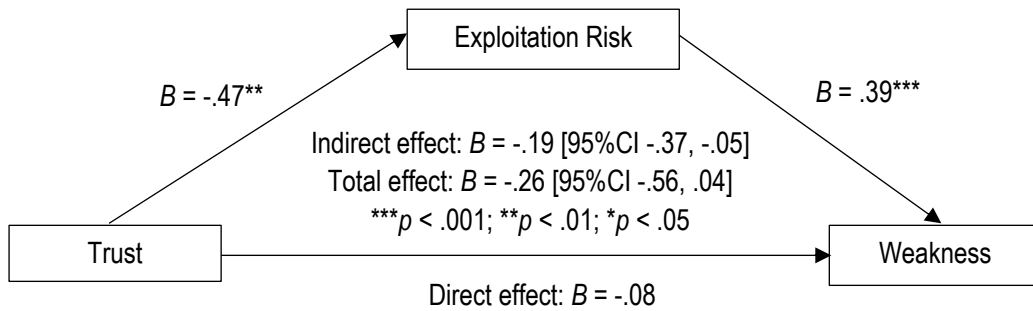


Figure 15. The indirect effect of trust on distress (weakness) via exploitation risk, controlling for commitment.

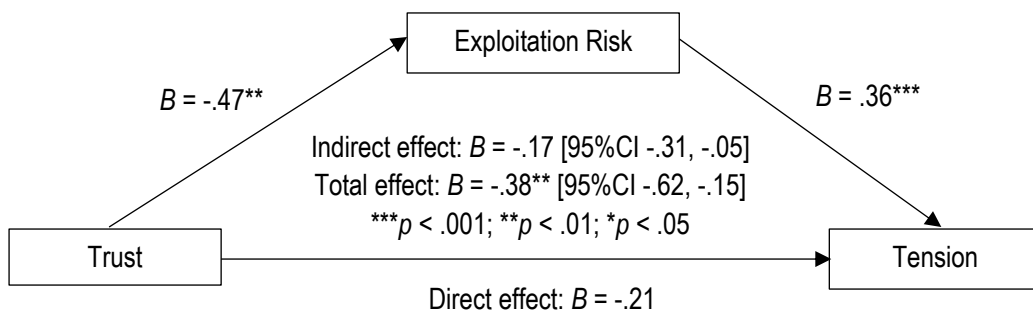


Figure 16. The indirect effect of trust on psychological tension via exploitation risk, controlling for commitment.

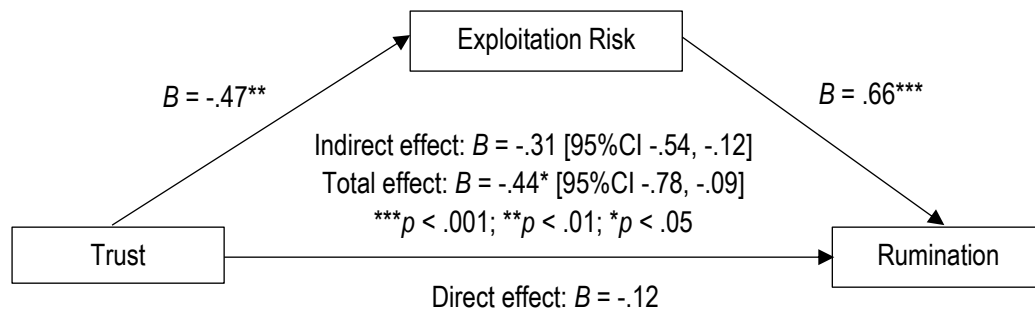


Figure 17. The indirect effect of trust on rumination via exploitation risk, controlling for commitment (study 3).

Testing the indirect effects of trust via attributions. The second set of analyses attempted to explain the association between trust and Study 3's outcome variables; hurtfulness, distress (anger), distress (weakness), tension, and rumination. Causal and responsibility/blame attributions were both included as mediator variables, and commitment was controlled for in each analysis.

Figures 18 to 22 display the results of these analyses for each of the five outcome variables. The data were consistent with hypothesis 1c; blame attributions significantly mediated the effects of trust on all five outcome variables. However, causal attributions did not significantly mediate the effects of trust in any analysis. Trust maintained a significant negative direct effect for the analysis predicting psychological tension. Based on these results, causal attributions appear to be unnecessary to explain the effects of trust when controlling for commitment. However, consistent with the proposed explanations in Chapter 3, both exploitation risk and blame attributions as mediators of the effects of trust were consistent with the data.

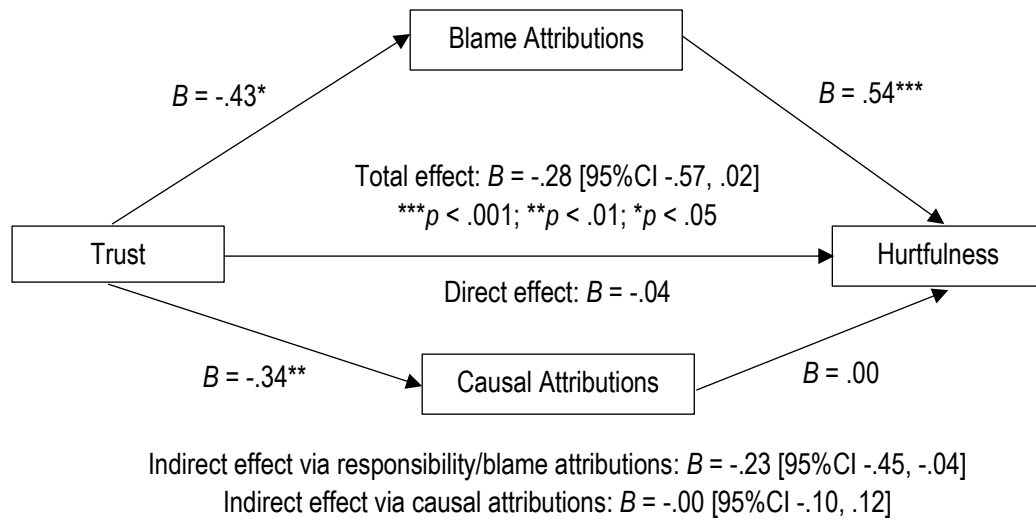


Figure 18. The indirect effect of trust on hurtfulness via causal and responsibility/blame attributions, controlling for commitment (study 3).

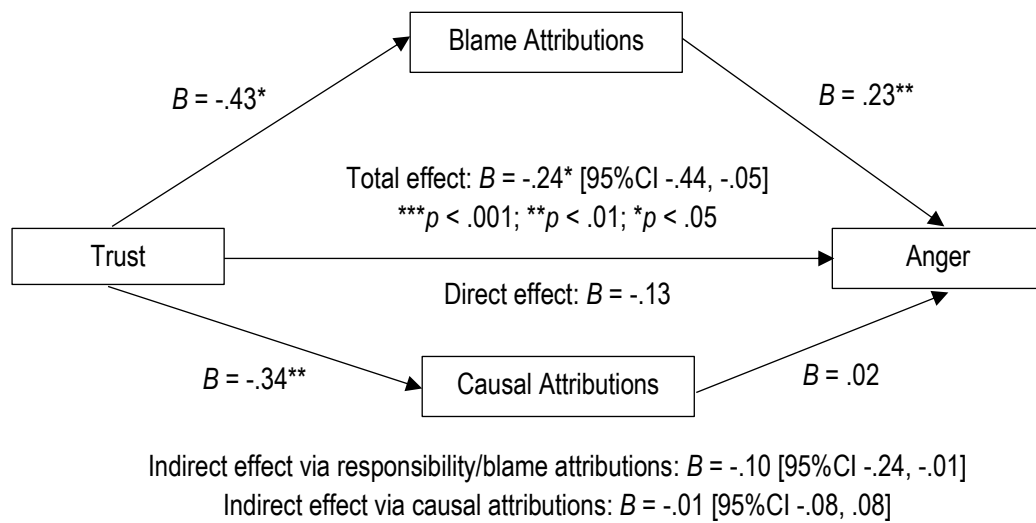


Figure 19. The indirect effect of trust on distress (anger) via causal and responsibility/blame attributions, controlling for commitment.

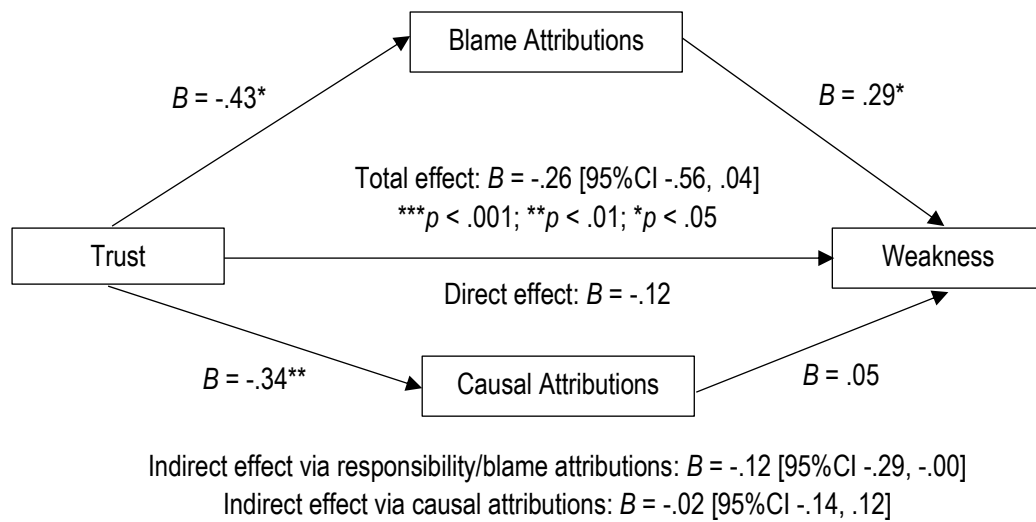


Figure 20. The indirect effect of trust on distress (weakness) via causal and responsibility/blame attributions, controlling for commitment.

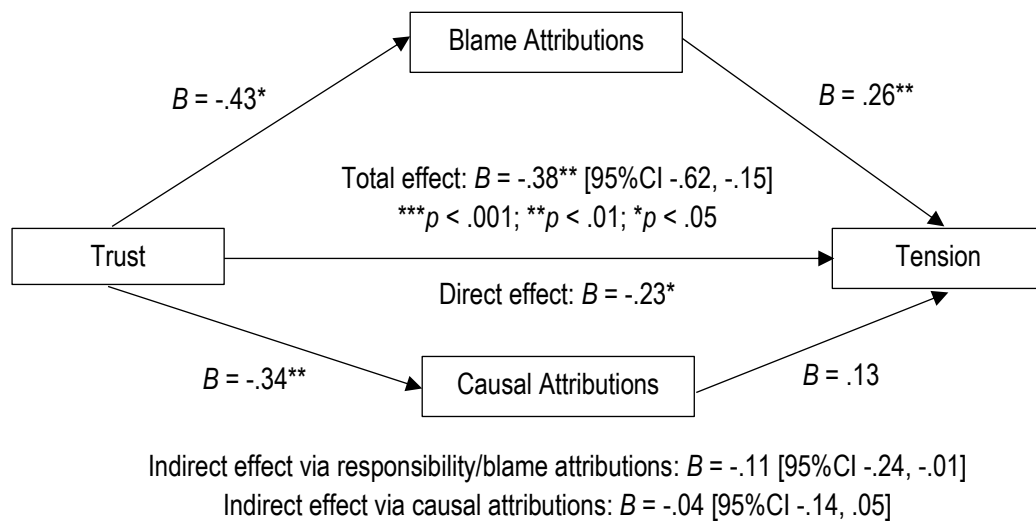


Figure 21. The indirect effect of trust on psychological tension via causal and responsibility/blame attributions, controlling for commitment.

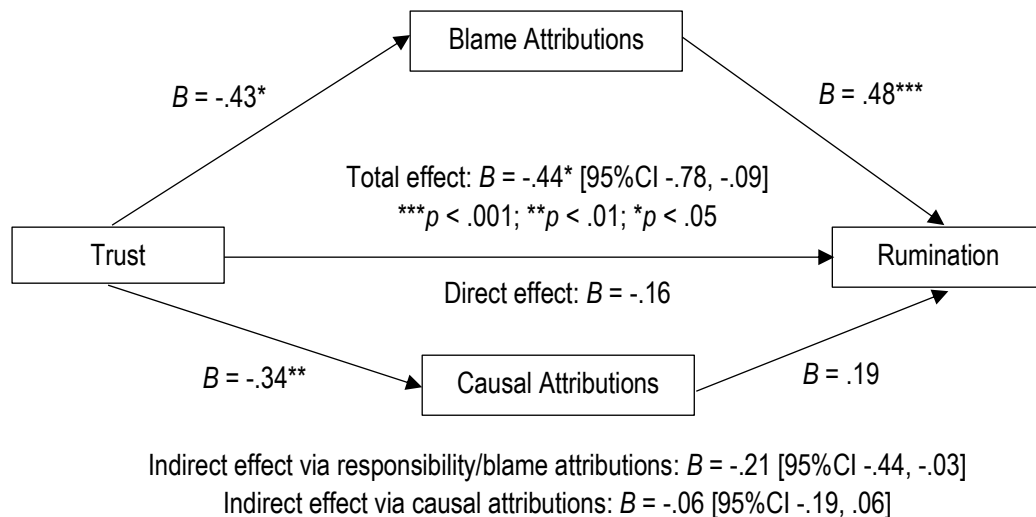


Figure 22. The indirect effect of trust on rumination via causal and responsibility/blame attributions, controlling for commitment (study 3).

Testing the indirect effects of commitment via relationship value. The third set of analyses attempted to explain the association between commitment and Study 3's outcome variables; hurtfulness, distress (anger), distress (weakness), tension, and rumination. The mediator variable was relationship value, and trust was controlled for in each analysis.

Figures 23 to 27 display the results of these analyses for each of the five outcome variables. Relationship value significantly mediated the effects of commitment on hurtfulness, weakness, and rumination. However, this mediation was in the opposite direction to the originally proposed explanation, such that commitment was actually associated with decreased scores on these outcomes. This result provides an even stronger falsification of relationship value as a proposed explanation of the detrimental effects of commitment. Consistent with the general pattern of results from Study 2, the indirect effect of commitment via relationship value was not significant for anger or psychological tension. Taken together, these results support hypothesis 2cii, as *detrimental* indirect effects of commitment via relationship value were not observed.

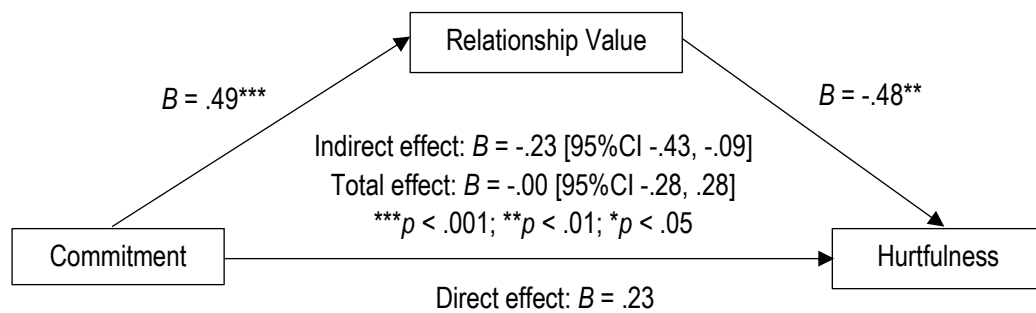


Figure 23. The indirect effect of commitment on hurtfulness via relationship value, controlling for trust (study 3).

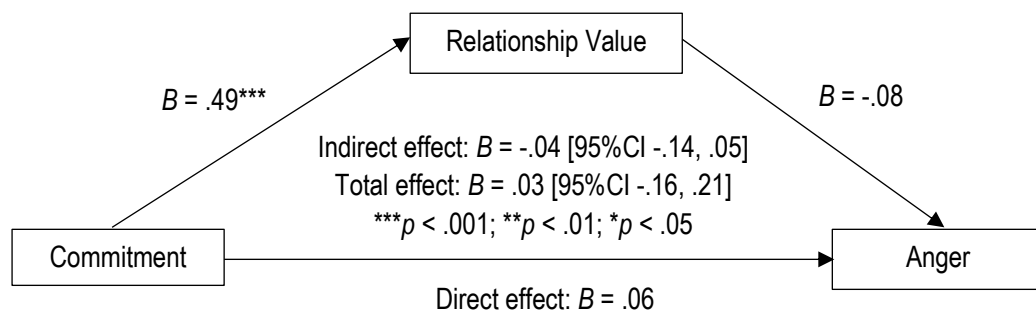


Figure 24. The indirect effect of commitment on distress (anger) via relationship value, controlling for trust.

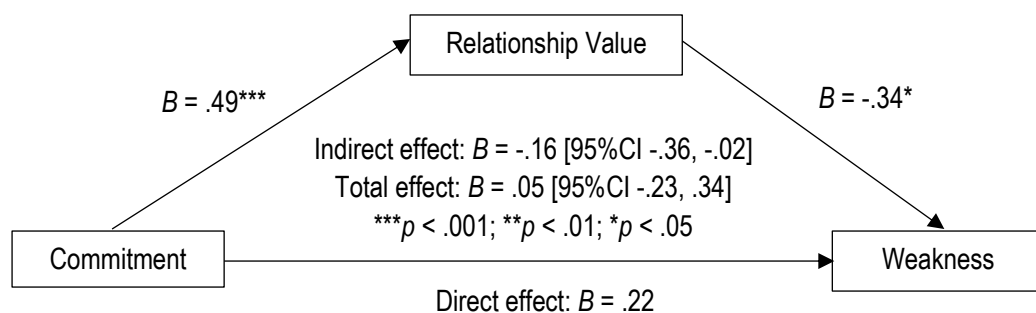


Figure 25. The indirect effect of commitment on distress (weakness) via relationship value, controlling for trust.

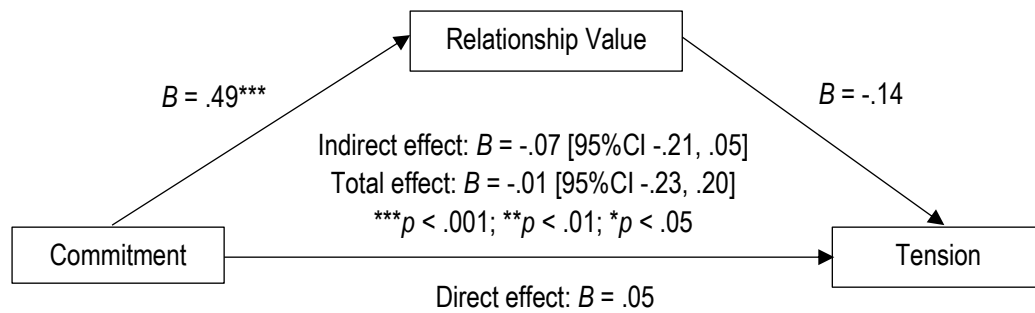


Figure 26. The indirect effect of commitment on psychological tension via relationship value, controlling for trust.

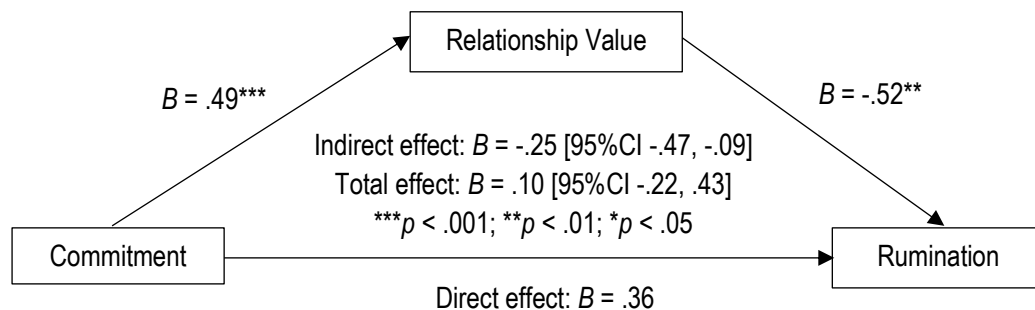


Figure 27. The indirect effect of commitment on rumination via relationship value, controlling for trust (study 3).

Testing the indirect effects of commitment via commitment imbalance. The fourth set of analyses attempted to explain the association between commitment and Study 3's outcome variables; hurtfulness, distress (anger), distress (weakness), tension, and rumination. The mediator variable was commitment imbalance, and trust was controlled for in each analysis.

Figures 28 to 32 display the results of these analyses for each of the five outcome variables. The data provided partial support for hypothesis 2cii; commitment imbalance significantly mediated the effects of commitment on weakness and psychological tension, and approached significance for rumination. Unlike the results for relationship value, this mediation did represent a detrimental indirect

effect. These results provide partial support for the suggestion that concerns about mutual dependence may explain the negative effects of commitment outlined in this thesis.

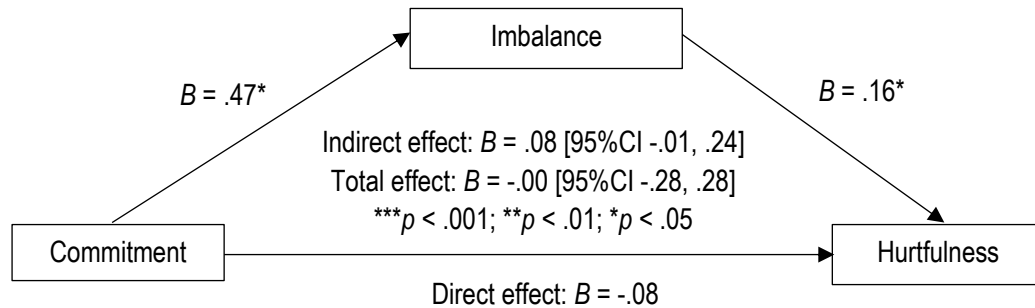


Figure 28. The indirect effect of commitment on hurtfulness via commitment imbalance, controlling for trust.

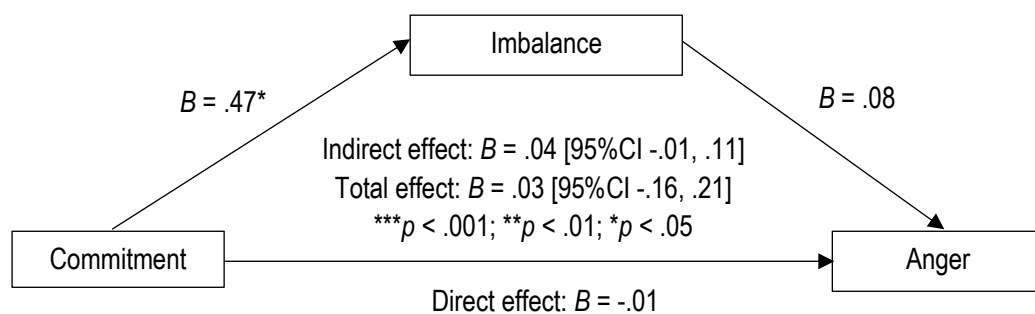


Figure 29. The indirect effect of commitment on distress (anger) via commitment imbalance, controlling for trust.

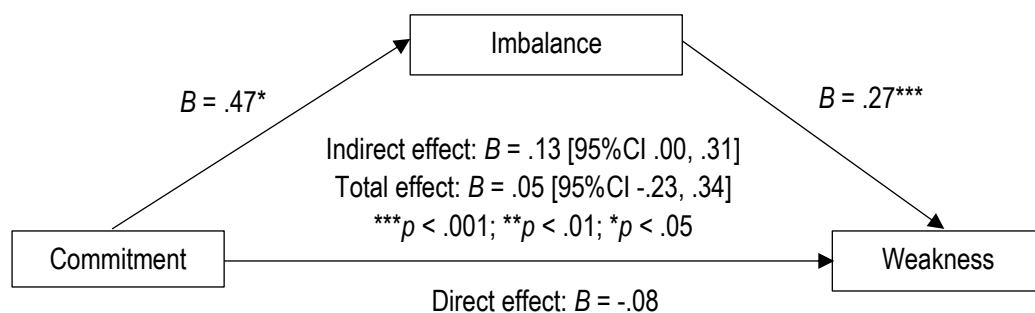


Figure 30. The indirect effect of commitment on distress (weakness) via commitment imbalance, controlling for trust.

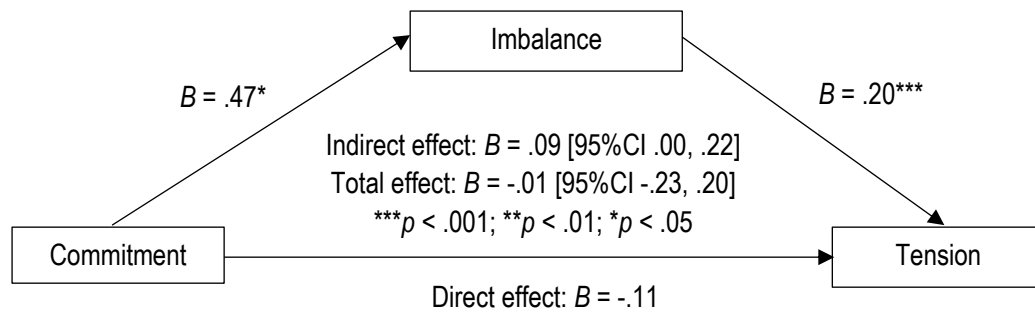


Figure 31. The indirect effect of commitment on psychological tension via commitment imbalance, controlling for trust.

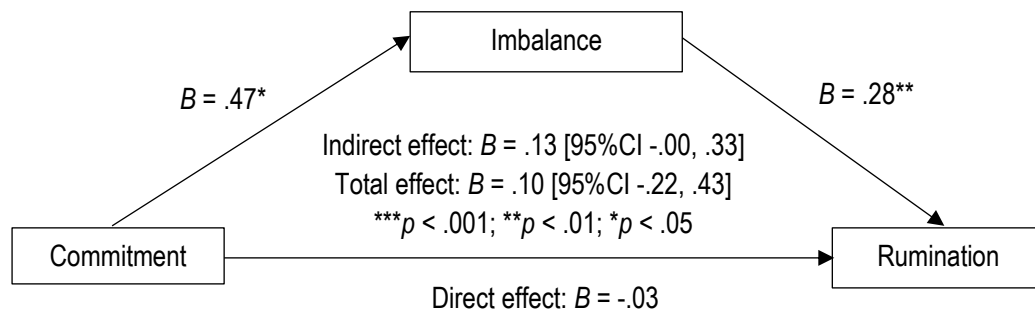


Figure 32. The indirect effect of commitment on rumination via commitment imbalance, controlling for trust.

The argument that commitment increases imbalance when trust is controlled for is most easily understood by examining the association between trust and commitment as the predictors, and perceptions of the partner's commitment as the outcome. To help illustrate this line of argument, a multiple regression model with those specifications was constructed. The overall model explained 42% of the variance in perceptions of the partner's commitment, $R^2_{adj} = .42$ ($F(2,68) = 26.36$, $p < .001$). Trust was a significant predictor of perceived commitment, $\beta = .51$ ($t(68) = 3.88$, $p < .001$). However, commitment did not significantly predict perceptions of the partner's commitment, $\beta = .20$ ($t(68) = 1.50$, $p = .139$). Further supporting this point, the bivariate correlation between T1 trust and perceived partner commitment at T2 was $r(69) = .65$, $p < .001$. Given that administration of these scales was separated

by both time and the occurrence of a transgression, this represents a surprisingly strong association. These results highlight that trust is closely associated with perceptions of the partner's commitment. Therefore, if commitment increases while holding trust constant, it follows that we expect one's own commitment to increase while perceptions of the partner's does not, increasing the perceived imbalance.

Testing the indirect effects of commitment via relationship value and commitment imbalance. Because the two proposed mediators for the effect of commitment on the outcome variables had opposite indirect effects (suggesting a suppression effect), I compared the effects of these competing mediators within a single multiple mediation model. Figures 33 to 37 display the models for these five analyses, using hurtfulness, distress (anger), distress (weakness), psychological tension and rumination as the outcome variables.

When both mediators were included together, relationship value mediated the effect of commitment on hurtfulness and rumination, but the indirect effect was not significant for anger, weakness, and psychological tension. Similarly, commitment imbalance mediated the association between commitment and weakness, but was not significant for the other four outcome variables. Since many of these links were in the predicted direction and had significant p-values for both path coefficients, it is possible that there is a suppression effect which cannot be well identified here due to the smaller sample size, but these results are unable to specifically support this suggestion.

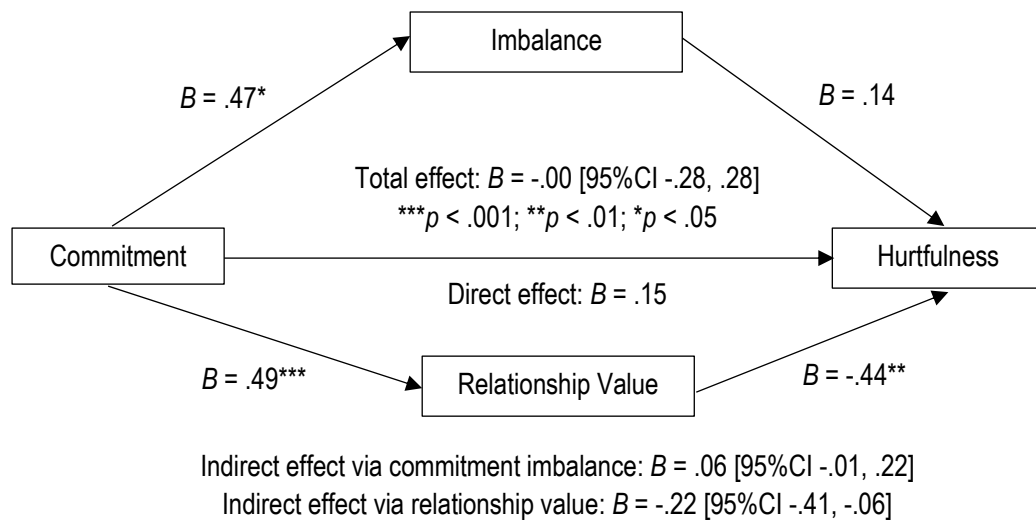


Figure 33. The indirect effect of commitment on hurtfulness via commitment imbalance and relationship value, controlling for trust.

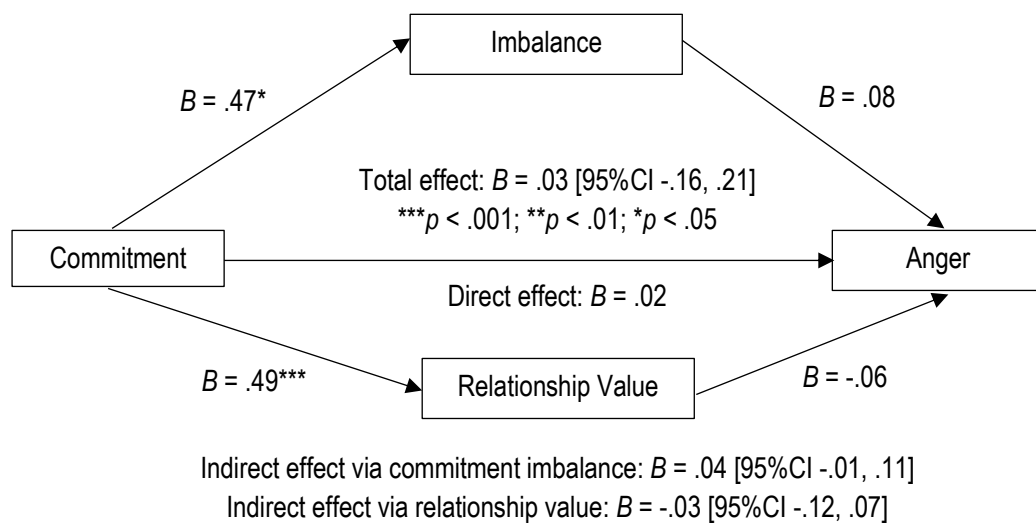


Figure 34. The indirect effect of commitment on distress (anger) via commitment imbalance and relationship value, controlling for trust.

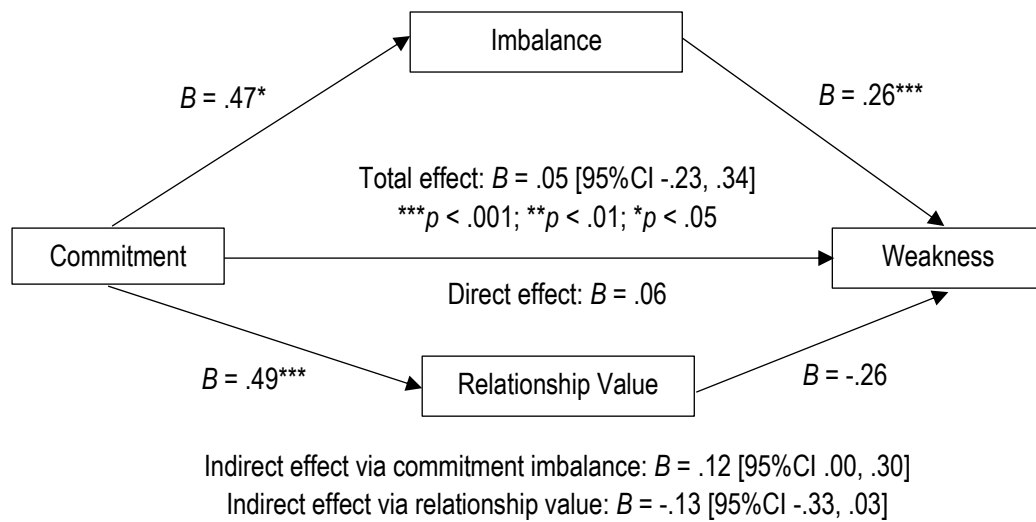


Figure 35. The indirect effect of commitment on distress (weakness) via commitment imbalance and relationship value, controlling for trust.

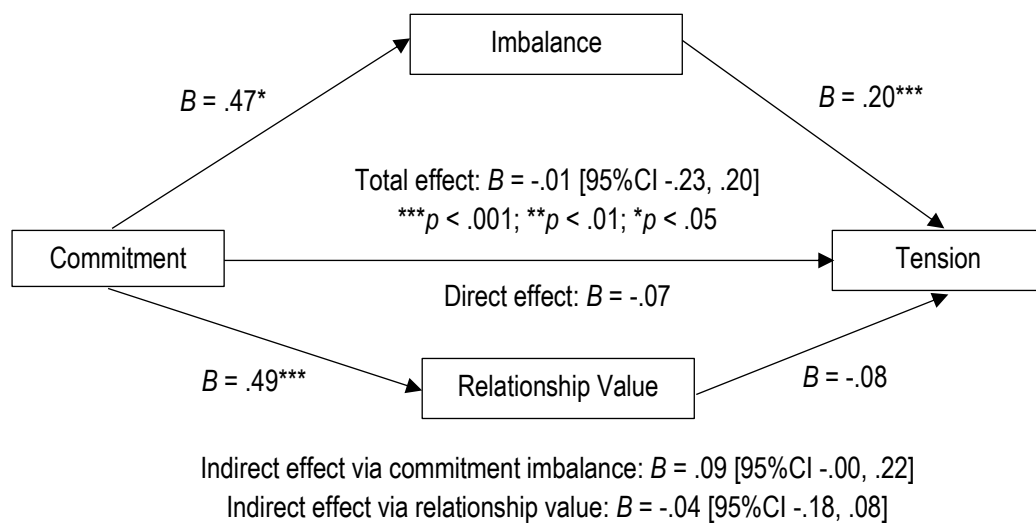


Figure 36. The indirect effect of commitment on psychological tension via commitment imbalance and relationship value, controlling for trust.

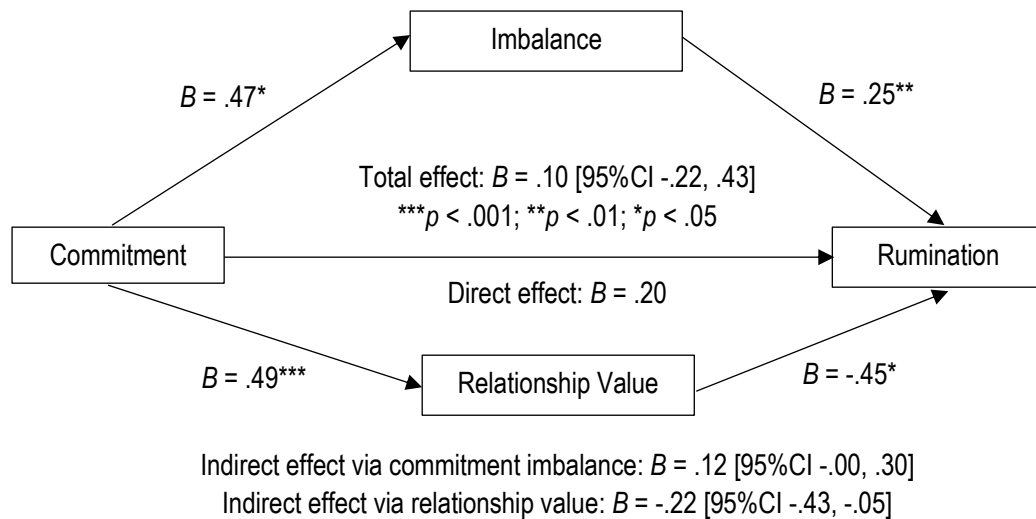


Figure 37. The indirect effect of commitment on rumination via commitment imbalance and relationship value, controlling for trust.

5.4.5 Control analyses

The final stage of the Study 3 analyses was investigation of possible confounds or limitations to the pattern of associations represented by the partial correlations. This was done using the same approach as for Studies 1 and 2. However, no categorical variables were assessed for Study 3, as the already small sample did not allow for separate analysis by groups to be meaningful.

Table 16

Partial Correlations between Study 3 Predictor and Outcome Variables, Additionally Controlling for Age, Time Since the Offence Occurred, and Time between Completing the T1 and T2 Surveys

| Controlling for: | Commitment | Trust |
|---------------------|------------|------------|
| | Trust | Commitment |
| Hurtfulness | -.25* | .04 |
| Distress (Anger) | -.29* | .05 |
| Distress (Weakness) | -.20 | .02 |
| Tension | -.38** | -.01 |
| Rumination | -.29* | .08 |

Note. $***p < .001$; $**p < .01$; $*p < .05$.

The three variables controlled for were continuous; age, time since the offence occurred, and time between completing the T1 and T2 surveys. The influence of these variables was assessed by also controlling for their influence when estimating the partial correlations, to determine whether the inclusion of these variables would alter the substantive conclusions that can be drawn from the data. Table 16 displays the results of this analysis. In each case, the point estimates change very little after including the variable as a control, and the substantive conclusions remain unchanged.

5.5 Study 3 Discussion

Study 3 investigated the unique effects of trust and commitment in a prospective design, assessing trust and commitment prior to a transgression occurring. Like Studies 1 and 2, trust generally had beneficial unique associations with distress. Contrasting with the earlier findings, commitment was not associated with detrimental outcomes once trust was controlled for. However, detrimental effects of commitment were still observed in some mediation analyses, providing partial support for the proposition that non-mutual dependence may be able to account for the detrimental effects observed in earlier studies.

In Study 3, trust exhibited beneficial zero-order associations with our outcome variables. This was more consistent with the results from Study 2 than from Study 1. Unlike the previous studies presented in this thesis, commitment had beneficial zero-order correlations with two measures of distress (specifically anger and tension); the remaining three correlations were non-significant.

As in the other studies, Study 3 estimated the unique effects of trust and commitment as well. The results for trust were generally consistent with hypothesis 1a, and the findings of Studies 1 and 2. After controlling for commitment, trust displayed beneficial associations with anger, psychological tension, and rumination; results were non-significant for hurtfulness and feelings of weakness. However, hypothesis 2a was not supported in Study 3. After controlling for trust, commitment was not related to distress reported, displaying non-significant associations with all five outcome variables.

Although this contradicts the findings from Studies 1 and 2, it is nonetheless in line with other work which has shown that trust can account for some of the effects of predictors like commitment (e.g., Strelan et al., 2017). Trust and commitment did have distinct unique effects on distress in Study 3, supporting the need to disentangle these variables. However, their effects were not opposite in sign as for Studies 1 and 2.

Study 3 re-evaluated the mediation analyses for the association of trust with distress specified by hypothesis 1c. Consistent with Study 2, causal attributions did not mediate the effects of trust, but responsibility/blame attributions and exploitation risk mediated the effects of trust for all five outcome variables. Based on these results, causal attributions may be unnecessary to explain the effects of trust when controlling for commitment. However, both exploitation risk and responsibility/blame attributions were consistent with the data. Overall, these results supported with the proposed explanation for the effects of trust in Chapter 3, suggesting that the beneficial effects of trust on distress can be explained by reduced perceptions of risk from the transgressor.

Study 3 also evaluated mediation analyses to explain the detrimental effects of commitment observed in previous studies. As outlined earlier, lack of a correlation between two variables does not imply lack of a causal or mediational link (Hayes, 2009, 2018). More specifically, there was reason to suspect that, due to suppression effects hinted at by the Study 2 results, commitment and distress may be linked in mediation analyses despite having non-significant correlations. Consistent with this proposal, commitment did exhibit detrimental effects on two outcomes via commitment imbalance, although support for this was inconsistent across outcome measures. These results provide partial support for hypothesis 2cii, that concerns about mutual dependence may explain the detrimental effects of commitment outlined in this thesis.

Re-examining the Study 2 mediation analyses for relationship value, Study 3 confirmed that relationship value could not account for the detrimental effects of commitment, strengthening the falsification of relationship value as a mediator of the detrimental effects of commitment. In fact,

mediation was found in the opposite direction for most outcomes, supporting suggestions of potential suppression effects in the effects of commitment. Including both mediators in the same model produced inconclusive results, as most indirect effects were not significant. Since many of these links were in the predicted direction and had significant p-values for both path coefficients, it remains plausible that there is a suppression effect which cannot be well identified here due to the smaller sample size. However, results were unable to specifically support this suggestion directly.

Overall, the mediation analyses were highly suggestive, but inconsistent across different outcome variables. Presumably this was due to the low power of the study for some analyses, as outcome variables representing distress and negative emotions have tended to display similar patterns in Studies 1 and 2. As outlined earlier, some analyses in Study 3 were slightly underpowered due to a higher than expected attrition rate between the T1 and T2 surveys. Mediation analyses with smaller indirect effects were the procedures most affected by this limitation, likely explaining the somewhat inconsistent results for these analyses across outcome measures. Overall, although significant findings were still identified for many key analyses, the lower power of Study 3 was the most impactful limitation of the study.

Another noteworthy design feature of Study 3 was that participants were specifically instructed to think of someone who sometimes did hurtful things. As discussed in the results section, this was done to increase the likelihood of capturing a transgression between the T1 and T2 surveys. However, the inclusion of this instruction could arguably have biased the type of relationships that participants reported on. I do not have specific methodological concerns about effects this may have had, but it is nonetheless worth highlighting. Given that the zero-order correlations for trust and commitment appeared to be quite sensitive to contextual effects within the studies, any systematic difference in the kind of relationships or transgressions which may have been captured is worth highlighting. On the other hand, it is quite possible that this instruction would be insufficient to bias the nature of

relationships that were selected. Conveniently for transgression researchers, most relationship partners would presumably fit the description of sometimes doing hurtful things.

Study 3 also compared multiple operationalisations of mutuality of commitment. As outlined in Chapter 5.1, non-mutual commitment levels have been linked to increased distress by both theoretical models (Murray et al., 2006; Thibaut & Kelley, 1959; Wieselquist et al., 1999) and individual empirical studies (Drigotas et al., 1999; Weigel, 2008). This body of research suggests that, although which partner is more committed can matter, in general relationships with non-mutual commitment will be more unstable and distressing for both partners. Accordingly, mutuality tends to be operationalised as the absolute difference between one's own commitment and perceived partner commitment. Study 3 compared two conceptualisations of mutuality and supported the utility of this approach in the context of interpersonal transgressions. Additionally, the results add to literature on the effects of mutuality in another way. Although not discussed in the results as it was not a primary focus of the research, results also supported the more general idea that non-mutuality is distressing. The relations found in Chapter 5.4.2 demonstrated that non-mutual relationships were characterised by lower satisfaction, fewer apologies, higher risk of exploitation, and higher scores on hurtfulness, anger, weakness, psychological tension, and rumination.

In summary, although the results for Study 3 were somewhat inconsistent across outcomes variables, it has nonetheless identified and partially supported theoretical explanations for the detrimental unique effects of commitment on distress. Specifically, results suggested that mutuality of commitment can potentially account for these effects; although commitment may operate via multiple opposing pathways. Corroborating Study 2, Study 3 also supported the explanations proposed in Chapter 3 for the beneficial unique effects of trust.

Chapter 6: General Discussion

Across three studies, I investigated the unique effects of trust and commitment on forgiveness and distress following interpersonal transgressions. Study 1 employed a hypothetical design, where participants imagined a transgression being committed by their actual partner. Study 2 enhanced generalisability with a recall approach, investigating trust and commitment in a broader range of relationships and transgressions. Study 3 used a prospective design to better assess pre-existing trust and reduce concerns about bi-directional associations. Taken together, these studies supported the necessity of disentangling trust and commitment. First, detrimental effects of commitment on coping following an interpersonal transgression were identified; effects which appeared more consistently after controlling for trust. Second, trust appeared to account for many of the beneficial effects of commitment. After controlling for trust, commitment had predominantly detrimental or non-significant associations with the outcomes; although an exception was the beneficial association with forgiveness in Study 2. Third, the pattern of associations described by the unique effects had substantially different interpretations to their zero-order associations. Finally, the unique effects of trust and commitment were more consistent across the three studies than their zero-order associations, which were more sensitive to contextual factors within the studies.

6.1 How are Trust and Commitment Related to Distress and Forgiveness?

Zero-order correlations between trust and distress were somewhat inconsistent across studies. Trust was beneficially related to distress in two studies, and unrelated in the third. However, this inconsistency was due to trust's association with commitment. After controlling for commitment, more trusting relationships were almost universally related to better outcomes. This was true for forgiveness as well as distress; although the effect for forgiveness emerged consistently at the zero-order level as well.

Like trust, associations between commitment and distress were somewhat inconsistent across studies. Detrimental, non-significant, and beneficial associations were each observed in the studies presented here. However, controlling for the impact of trust produced more consistent patterns. Commitment had detrimental unique effects on distress measures in two studies, and non-significant associations in the third. These effects were also observable over longer time frames than expected, appearing in reports of transgressions which occurred years later.

Importantly, the detrimental effects of commitment did not extend to forgiveness. Commitment had inconsistent relations to forgiveness both before and after accounting for the effects of trust. Study 1 tended to show that commitment may have no association with forgiveness after accounting for trust, but used scenario designs in a specific context of infidelity transgressions. Study 2 showed strong effects of commitment on forgiveness even in the presence of trust, but pre-existing commitment was not measured and there were concerns about the possibility of reverse causation in this design. Accordingly, results were inconsistent in answering the question of whether trust can account for the effects of commitment as some studies have found (Laifa et al., 2018; Strelan et al., 2017). However, they were more consistent in showing that commitment did not exhibit the same detrimental effects on forgiveness as was observed for distress.

Taken together, these results supported the assertion some authors have made (e.g., Cann & Baucom, 2004; Karremans & Van Lange, 2004; Strelan et al., 2017) that transgressions are experienced as more distressing in committed relationships, but that forgiveness may still be enhanced by commitment (Finkel et al., 2002; Karremans et al., 2003; McCullough et al., 1998). These findings also support the importance of considering trust and commitment together.

6.2 Why Does Trust Heal?

In Chapter 3, I proposed that trust would function to assess the risk of future exploitation, asking how dependent one can risk being following an interpersonal transgression. Trust is highly

concerned with tracking how responsive a partner is to our needs, and how safe it is to be dependent on a particular person. Operating in conjunction with commitment, trust was argued to represent the 'costs' half of a joint mechanism for cost-benefit analyses. Mediation analyses provided support for this explanation regarding the role of trust. Exploitation risk and responsibility/blame attributions were consistently found to mediate the beneficial effects of trust on forgiveness and distress following an interpersonal transgression. Exploitation risk is already known to predict forgiveness (Burnette et al., 2012); these findings add support to suggestions that trust may be a proximate mechanism for assessing this risk (McCullough, Kurzban, & Tabak, 2010). Although these analyses support the proposed explanations, they are perhaps the least important aspect of the work overall. Trust exhibiting beneficial effects on forgiveness and distress is largely unsurprising, and there are other existing mechanisms which could explain these links well. Accordingly, exploring the beneficial effects of trust was a relatively minor original contribution of the work. However, this was nonetheless an important inclusion to provide a comprehensive explanation of the effects identified, in addition to supporting trust as a proximate mechanism for exploitation risk.

6.3 Why Does Commitment Hurt?

Research has shown that distress may be heightened in committed relationships (Simpson, 1987). As outlined above, the studies presented here found support for this proposition as well. Forgiveness researchers have suggested that this may be due to the greater investment and value placed on the relationship (e.g., Cann & Baucom, 2004; Karremans & Van Lange, 2004; Strelan et al., 2017). However, the studies presented here suggest that relationship value does not account for the heightened distress associated with commitment. In fact, Study 3 showed that relationship value may even influence distress in the opposite direction. This was perhaps one of the most compelling findings from the study, as it was contrary to suggestions in the literature, consistent across studies, and even demonstrated the reverse effect to predictions in some cases.

However, evidence provided some support for the idea that, after controlling for trust, more committed individuals tended to be in relationships characterised by non-mutual dependence, and that this was able to account for the detrimental effects observed in earlier studies. One implication of these results is that commitment likely acts through multiple pathways, exhibiting both detrimental and beneficial effects via different mechanisms; although the lower power of Study 3 prevents firm conclusions on this point. However, results did provide some support for an explanation for the detrimental effects of commitment that were observed. Increased commitment may hurt because the partner is not equally committed; increases in commitment without commensurate changes in trust should be related to non-mutual dependence, heightening distress when transgressions occur.

6.4 Alternative Explanations for the Role of Mutuality

As discussed above, mediation analyses did provide partial support for the idea that the detrimental effects of commitment can be explained by non-mutuality. But this raises an additional point of explanation—why, after controlling for trust, would high commitment correlate with non-mutual commitment? The argument put forth in Chapter 5.1 was a fairly general and conservative proposition, arguing that those with high commitment were naturally more likely to have higher commitment than their partners *on average*. However, re-examining the interdependence-based theories and models in Chapter 3 suggests a more precise answer to this question. This answer reframes the results of the mediations involving mutuality of commitment, suggesting an alternative but highly complementary account of the associations between trust, commitment, and mutuality of dependence.

To elucidate this explanation, we can consider the way mutuality was measured in Study 3 based on similar published studies (Drigotas et al., 1999; Weigel, 2008). Mutuality of commitment was assessed by combining a measure of the participant's commitment with a measure of perceived partner commitment. However, the interdependence-based theories described in Chapter 3 conceptualise trust as perceptions of a partner's commitment. The regression model presented with the Study 3 results

also highlighted this point, finding that perceptions of partner commitment in the mutuality measure were indeed predicted by trust. If we take this view, then mutuality of commitment was in fact a composite measure which assessed the coordination of trust and commitment between partners. Given this, the success of the mediation model would hardly be surprising—but only under the premise that trust can be conceptualised as tracking a partner’s commitment level.

On this view, the link between commitment and mutuality when controlling for trust becomes not a mechanistic proposition, but a definitional one. In other words, if trust and commitment form a joint mechanism for coordinating dependence across partners, then increasing one of these variables affects mutuality of commitment by definition. Of course, this is somewhat more of a speculative point rather than something directly shown by the results, particularly given the power issues and inconsistency between outcome measures present in Study 3. However, given the convergence between the perspectives in Chapter 3 and the links between trust, commitment and mutuality observed in Chapter 5, these theories provide a compelling alternative view of this effect. This is not entirely a separate explanation, as it invokes many of the same constructs and theories, but it does reframe the effects of trust and commitment through mutuality as a definitional issue. Although trust has been explicitly modelled as tracking a partner’s commitment in the context of forgiveness previously (Wieselquist, 2009), that work considered trust and commitment as outcomes of a transgressor observing the victim’s forgiving responses. Accordingly, the proposition that trust can be viewed as a barometer of the partner’s commitment is not novel to forgiveness research. However, showing that this may have implications for the *prediction* of forgiveness-relevant outcomes is novel.

6.5 Key Contributions

As stated at the outset of Chapter 1, despite a substantial focus on distress as an outcome variable, the primary inspiration, contribution and implications for this work are within the forgiveness literature. Specifically, the work has identified a number of findings of interest to forgiveness

researchers and theorists. Firstly, the fact that the unique effects of trust and commitment were substantially different than their zero-order associations is an important finding. This was more pronounced for correlations with measures of distress, but was true for forgiveness as well. Secondly, the research identified opposing effects of two major predictors of forgiveness following interpersonal transgressions. The demonstration that trust and commitment have opposing associations with distress adds insight to the processes and experiences underlying reactions to transgressions. Third, results add to the literature on the unique effects of commitment on forgiveness and the question of whether these effects can be explained by interpersonal trust; although the findings were somewhat inconclusive in answering this latter question. Fourth, the findings extend work on evolutionary accounts of revenge and forgiveness, by demonstrating that trust and commitment can fill the role of proximate mechanisms assessing risk and benefits respectively. Fifth, this research investigated the detrimental effects of commitment, refuting suggestions that relationship value could account for these, but providing partial support for the importance of non-mutual commitment levels in explaining the effects. Finally, results highlight the potential importance of theories which have considered trust as a barometer of the partner's forgiveness (Murray et al., 2006; Wieselquist et al., 1999), demonstrating that tenets of these models can be used to predict distress and forgiveness following an interpersonal transgression. These perspectives suggest possible avenues for better integrating the largely independent work on trust and commitment within the forgiveness literature.

In general, the work presented here has stronger implications for theory than for practical application. As stated, trust and commitment do tend to co-occur, meaning that the detrimental effects of commitment identified will usually be offset by other factors within most individuals and relationships. However, there are exceptions to this general pattern where these results may have some practical utility. Namely, the findings may add insight to understanding anxious attachment styles, which are characterised by commitment to the partner but also intense concerns about the partner's level of commitment (Hazan & Shaver, 1987). Therefore, the work may also have some relevance for the

literature on adult attachment dynamics. As the attachment literature has shown, disentanglement of trust and commitment can occur naturally as well as statistically. Accordingly, the work within this thesis may have practical as well as theoretical implications.

6.6 Limitations and Future Directions

Although individual studies within the thesis each came with their own set of limitations, a majority of these have been able to be addressed by the design of the other studies conducted. However, there are two major limitations of the overall work presented here which are key concerns for future work to address. Perhaps the most critical limitation of these studies is the lack of experimental work contained within them. As outlined earlier, two attempts were made at manipulating trust and commitment experimentally, neither of which managed to successfully manipulate the target variables in larger scale studies despite successful pilot testing. Given the financial and time constraints of a PhD project the decision was made to focus efforts elsewhere, adducing suggestive rather than conclusive evidence for the causal nature of this effect. However, the findings presented here would certainly be bolstered by future research examining these effects experimentally. I have occasionally used somewhat causal terms throughout the thesis for convenience of explanation. However, the causal nature of these associations has not been established by the current work. Another useful addition to these findings would be multi-wave longitudinal investigations, to explore whether earlier levels of trust and commitment uniquely predict later changes in distress and forgiveness.

The second major remaining limitation is related to the lower power of Study 3 due to a higher than expected attrition rate. The role of mutuality was the finding most affected by this, as this was the sole analysis which was not also validated in other studies within the thesis. Given the links with trust and commitment in the literature, the presence of significant mediation for some outcome variables, and trends in point estimates for the remaining variables, there are reasonable indications that non-mutuality can explain the detrimental effects of commitment. Nonetheless, of the findings presented

within this thesis, the mediation analyses via mutuality of commitment are most in need of replication and validation by future studies. The detrimental effects of commitment were quite consistent, as was the finding that relationship value cannot account for these associations, leaving a clear need for a well-validated explanation of these effects. Based on the studies and theoretical arguments presented here, non-mutuality appears to be a good candidate for this explanation.

6.7 Conclusion

In this thesis, I presented evidence for an interesting effect which was reasonably consistent across three studies using a range of methodologies. Specifically, the research identified opposing effects of two major predictors of forgiveness following interpersonal transgressions. The theoretical and empirical explanations for these effects suggest potential avenues for future research, primarily for theorists within the fields of forgiveness. More specifically, these findings highlight the utility of perspectives which conceptualise trust and commitment as joint mechanisms for regulating dependence across partners (Murray et al., 2006; Wieselquist et al., 1999), showing that tenets of these models may have useful implications for predicting forgiveness. Although further validation and replication of these findings will undoubtedly qualify and clarify the patterns presented here, hopefully this work will spark further investigation into the unique effects of interpersonal trust and commitment.

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