DOI: 10.1111/bjso.12860

ARTICLE



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Can I tolerate that kind of behaviour? Self-esteem, expected benefits, risk perceptions and risk tolerance in romantic relationships

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Abstract

Previous research has relied on characteristics of relationship behaviours (e.g., choosing/avoiding intimacy) as evidence of prioritising potential rewards over the perceived risks (i.e., interpersonal risk tolerance). Across four studies $(N_{\text{total}} = 1422)$, we drew from psychological risk-reward models of decision-making to test whether perceived risks, benefits, and/or risk tolerance were associated with relationship goals and behaviours. Self-esteem was positively associated with expecting greater benefits and perceiving less risk in relationship behaviours but not with differences in risk tolerance (i.e., tolerance of risks perceived; Studies 1 & 2). Furthermore, greater expected benefits were associated with connection goals and engaging in those behaviours, whereas greater perceived risk was associated with selfprotection goals and less engagement (Studies 3 & 4). Our findings suggest that people with high self-esteem are not necessarily tolerant of interpersonal risk but instead differ in their perceptions of interpersonal risks and benefits, and consequently engage in behaviours they expect to confer benefits and avoid ones they anticipate will be costly.

KEYWORDS

interdependence theory, risk tolerance, romantic relationships, self-esteem

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Romantic partnerships require people to engage in a delicate balancing act between personal risks and rewards (Thibaut & Kelley, 1959; Kelley et al., 2003). Self-esteem sensitises people to these interpersonal risks and rewards (Heimpel et al., 2006; Leary et al., 1995; Leary & Baumeister, 2000). High self-esteem is associated with prioritising interpersonal rewards, whereas low self-esteem is associated with minimising interpersonal risks (e.g., Murray et al., 2006, 2008). Historically, understanding how certain relationship behaviours (e.g., prioritising connection in times of risk; Murray et al., 2006) are associated with trade-offs between their perceived risks and benefits has been limited to how the behaviour itself is framed. When someone behaves in a way that supports the relationship, it is believed that they have prioritised the expected benefits of the behaviour over the potential risks (Arriaga, 2013; Holmes, 2002). By contrast, behaviours that lead to disengaging or distancing from the relationship or partner are assumed to reflect the prioritisation of limiting personal costs. However, this obscures the extent to which people may evaluate risks and rewards differently, as well as vary in their tolerance of risk in this trade-off.

Risk perceptions refer to the extent to which someone evaluates an outcome or activity as risky (independent of its perceived benefits), whereas risk tolerance refers to the extent to which a person is willing to accept the risks they perceive to attain the expected benefits (Rolison & Shenton, 2020; Weber et al., 2002). Differentiating between these two evaluations of risk is an essential piece of the puzzle for understanding interpersonal decision-making. For example, people who typically anticipate rewards from social interactions—such as those with high self-esteem (Bernichon et al., 2003; Murray & Holmes, 2011; Stinson et al., 2015)—may choose to forgive a partner because they see forgiveness as an opportunity for their partner to make reparations (high benefits) and do not anticipate further transgressions by their partner (low risks). Alternatively, their decision to forgive a partner's past transgressions might not be so optimistic; rather, they might instead be more tolerant of the perceived risks of further transgressions associated with forgiving their partner in light of the possible rewards. For those with low self-esteem, who are sensitised to social risks (Leary & Baumeister, 2000; Murray & Holmes, 2011; Stinson et al., 2015), reparations following forgiveness may be perceived as unlikely (low benefits), whereas further transgression may be perceived as likely (high risks); or, they may simply be less tolerant of the risks of further transgressions, despite the possible rewards. Thus, there exists a gap in the literature such that prior work has not been able to disambiguate between risk perception and risk tolerance in relationships and whether these differ for those relatively high and low in self-esteem. Disambiguating the decision-making processes behind engaging in relationship behaviours is necessary for understanding why people initiate and maintain relationships with risky partners (e.g., Cortes & Wood, 2018; Murray & Holmes, 2015) and why people who should be motivated to seek connection with others to restore their self-worth (i.e., those with low self-esteem; Leary et al., 1995) seemingly eschew it (Cameron et al., 2010; Murray et al., 2008). The current research directly addresses this gap in the literature by integrating theoretical and analytical insights from models of risky decision-making (Rolison & Shenton, 2020; Weber et al., 2002) with models of self-esteem (e.g., Harris & Orth, 2020; Leary et al., 1995; Leary & Baumeister, 2000; McElroy et al., 2007) and interdependence theories of risk and rewards in relationships (Holmes, 2002; Murray et al., 2006; Thibaut & Kelley, 1959). Specifically, we examine how relationship behaviours are driven by both expected benefits and perceived risks and/ or risk tolerance.

SELF-ESTEEM AND RELATIONSHIP RISK-TAKING

Every interaction that occurs within a close relationship can be defined by the benefits—exchanged resources that are pleasurable and gratifying (e.g., intimacy, support, attention)—and the personal risks—exchanged resources that result in loss or punishment (e.g., lost opportunities, hurt feelings, embarrassment; Holmes, 2002; Sprecher, 1998; Thibaut & Kelley, 1959). To maintain *mutually* satisfying relationships, interdependence models of relationships contend that people must be willing to put the well-being of the partner or relationship ahead of their own self-interests, with the expectation that the

risk associated with incurred costs will be eventually offset by benefits bestowed by the partner (Agnew & Etcheverry, 2006; Murray et al., 2006; Rusbult & Arriaga, 1997).

Behavioural decision-making in romantic relationships is often shaped by dispositional expectations for how the partner is likely to behave in the future (i.e., expectations of future rewards; Baldwin & Sinclair, 1996; Murray et al., 2008; Simpson et al., 1996; Stinson et al., 2010). Self-esteem shapes how people approach decision-making tasks, sensitising them to risks and rewards (McElroy et al., 2007), and is associated with how people think, feel and behave in response to interpersonally situations associated with risk–benefit tradeoffs (e.g., Baldwin & Sinclair, 1996; Bernichon et al., 2003; Cameron et al., 2010; Cavallo et al., 2010; Dandeneau & Baldwin, 2004; Heimpel et al., 2006; Murray et al., 2006, 2008; Stinson et al., 2015).

People with high self-esteem benefit from having a positive view of themselves, as well as positive expectations about how their close others will behave toward them (Murray et al., 2003). Consequently, they are able to focus on the benefits of dependence in their relationships and seemingly prioritise these benefits over the risks (Cavallo et al., 2012; Murray et al., 2008). By contrast, the doubts people with low self-esteem have about themselves become insecurities about their partners (Murray et al., 1998, 2000, 2002). As a result, they overperceive negativity (Baldwin et al., 2003) and the likelihood of rejection (Anthony et al., 2007; Cameron et al., 2010; Cavallo et al., 2010). Although people with low self-esteem want acceptance and closeness, they seemingly prioritise the inherent risks of vulnerability over the benefits when deciding how to behave toward their partners (Murray et al., 2008).

However, despite evidence that people with high self-esteem engage in behaviours that suggest they are prioritising interpersonal benefits over their need to protect against interpersonal risks (and vice versa; Murray et al., 2008), whether this decision is driven by risk tolerance or instead reflects a lack of perceived risk, which makes it easier to capitalise on the benefits, remains unclear in the existing literature. For instance, some research suggests that people with high self-esteem may be more risk tolerant—recognising the potential consequences of their actions but believing that the benefits outweigh the risks. These findings may be partially due to self-esteem's shared variance with narcissism, which leads to overconfidence in the likelihood of good outcomes (Orth & Robins, 2022). The lack of clarity as to whether self-esteem guides interpersonal decision-making due to risk perceptions or risk tolerance is partly because past research has relied on characteristics of the behaviour (i.e., prosocial relationship outcomes vs. self-protective outcomes) to infer which decision-making characteristic was prioritised (the benefits, the risks, or risk tolerance). Furthermore, these anticipated cost-benefit trade-offs vary not only across interactions within relationships (i.e., intra-dyadically) but also across individuals (i.e., inter-dyadically). Thus, two people may engage in the same behaviour (e.g., sacrificing for the partner) for different reasons depending on how they perceive the balance between anticipated benefits and risks, or their risk tolerance in that moment.

INSIGHTS FROM MODELS OF RISKY DECISION-MAKING: EXPECTED BENEFITS, RISK PERCEPTIONS & RISK TOLERANCE

Similar to interdependence and relationship risk regulation models, psychological risk—return models posit that the risk taking behaviours represent a trade-off between the perceived riskiness of the activity and its expected benefits (Weber, 1997, 1998; Weber et al., 2002). These models posit that the decision to engage in a behaviour is comprised of three elements: (a) expected benefits, (b) perceived risks, and (c) individual and situational differences in risk tolerance. The inclusion of risk tolerance introduces an additional component that helps account for variability in how expected benefits and perceived risks are balanced across contexts. Risk tolerance captures the extent to which people are willing to accept the perceived risks in order to attain the expected benefits.

To measure risk tolerance, participants are presented with a target behaviour and are asked to indicate how beneficial the behaviour is, how risky the behaviour is, and how likely they are to engage in the

behaviour (Rolison & Shenton, 2020). Risk tolerance is measured as the coefficient for risk perceptions from a linear regression model predicting the likelihood of engaging in the behaviour from risk perceptions and expected benefits (Rolison & Shenton, 2020; Weber et al., 2002; Weber & Milliman, 1997). A large negative coefficient for risk perceptions in this model would indicate a negative attitude toward risk (i.e., each one unit increase in perceived risk results in a large decrease in the likelihood of engaging in the behaviour, controlling for the expected benefits), while a smaller negative coefficient would reflect a higher risk, tolerance (i.e., for each unit increase in perceived risk there is a smaller decrease in the likelihood of engaging, controlling for the expected benefits). Risk tolerance not only varies across individuals (i.e., as a dispositional trait) but also across risk-taking domains (i.e., it is context-specific; Rolison & Shenton, 2020). The same person could therefore be cautious about social interactions and being vulnerable around others and tolerant of the risks of their weekend drinking habits for their general health.

The analytical approach offered by the psychological risk-return model of risky decision-making offers a novel way of addressing the existing gaps in our understanding of when and why someone may be willing to risk interdependence and prioritise connection over self-protection in their relationships. First, they allow for the benefits and risks to vary across behaviours, regardless of behavioural outcome. Second, they account for the possibility that a behaviour can be perceived as both equally beneficial *and* risky and for individual variability in risk tolerance to determine how these risk-reward conflicts are resolved.

CURRENT RESEARCH

Past research has relied on characteristics of relationship behaviours (e.g., choosing/avoiding intimacy) as evidence of prioritising potential rewards over the perceived risks (i.e., interpersonal risk tolerance). This approach has obscured individual differences in how risky people believe these behaviours are from the outset. Consequently, researchers have not been able to disambiguate between risk perception and risk tolerance in relationships and whether these differ for those relatively high and low in self-esteem. The current studies address these gaps by integrating assumptions regarding risk–reward trade-offs central to interdependence theory (Thibaut & Kelley, 1959; Kelley et al., 2003; Holmes, 2002; Rusbult & Van Lange, 2008), relationship risk regulation (Murray et al., 2006, 2008), and dispositional differences in interpersonal risk associated with self-esteem (Leary et al., 1995; Murray et al., 2008; Stinson et al., 2015), with the psychological risk–return framework offered by the risky decision-making field (Rolison & Shenton, 2020; Weber et al., 2002). This provides a novel test of how the trade-off between expected benefits and risk perception drives relationship behaviours. Specifically, this research examines whether it is risk perception or risk tolerance that drives behaviour in relationships.

First, Study 1 examined whether differences in self-esteem influenced expected benefits, perceived risks, and risk tolerance across relationship-specific behaviours. Self-esteem is reliably associated with relationship risk regulatory behaviours (e.g., Murray et al., 2008), expectations of interpersonal rewards (e.g., Leary et al., 1995; Stinson et al., 2015), and domain-general risk perceptions (e.g., Cavallo et al., 2012; Heimpel et al., 2006; McElroy et al., 2007). We therefore expected that people with high self-esteem would expect greater benefits and perceive less risk across relationship-specific behaviours and consequently be more likely to engage. We also tested whether differences in self-esteem and likelihood of engaging in behaviours could be accounted for by differences in risk tolerance. For instance, it may be that people with high self-esteem are particularly sensitised to the benefits provided by different relationship behaviours and are therefore more

¹Negative coefficients are expected for both high and low risk tolerance because perceived risk is assumed to be negatively related to engaging in relationship behaviours (i.e., perceiving risk should not increase the likelihood of engaging in behaviours). Thus, relative differences in the size of the negative coefficient capture differences in risk tolerance.

tolerant of the risks they nonetheless perceive. Similarly, people with high and low self-esteem may see behaviours as equally beneficial, but people with low self-esteem may be more sensitised to the associated potential costs and therefore risk intolerant. Given that prior work has not been able to separate risk perceptions and risk tolerance in this way previously, we did not have a priori expectations as to which outcome would be more likely.

Next, relationship risk regulation theories suggest that acute interpersonal threats motivate people to prioritise connection or self-protection (e.g., Murray et al., 2006, 2008). Study 2 examined whether expected benefits, perceived risk, and risk tolerance toward relationship-specific behaviours are stable within the relationship or fluidly shift in response to acute interpersonal threats. We were agnostic regarding our predictions as to whether the likelihood of engaging in relationship-specific behaviours would reflect a recalibration of the perceived risks, expected benefits, and risk tolerance for those high compared to low in self-esteem when faced with an acute threat, or whether previous findings are in fact tapping into the dispositional risk tolerance. Additionally, Study 3 examined how expected benefits, perceived risks, and risk tolerance are associated with relationship connection and self-protection goals for people with relatively high and low self-esteem. We expected that for people with high self-esteem, greater expected benefits and greater risk tolerance would be associated with relationship connection goals, while for those with lower self-esteem, greater perceived risk and lower risk tolerance would be associated with self-protection goals. Finally, Study 4 extended the findings of Studies 1-3 by moving beyond participants' anticipated likelihood that they would engage in behaviours and instead testing whether perceived benefits, risk and risk tolerance were associated with *enacted* behaviours. Data, analysis code, and research materials are available at https://osf.io/74drw/. These studies were not preregistered. The online supplemental materials (OSM) contain the scale reliability for the expected risks and benefits and the likelihood of engaging in relationship behaviours scales in Study 1–3.

STUDY 1

Study 1 examined whether perceived risk, expected benefit, risk tolerance, and likelihood of engaging in relationship behaviours differed as a function of self-esteem among coupled and single people. Selfesteem is reliably associated with risk regulation behaviours in relationships (e.g., Murray et al., 2008), expectations of interpersonal rewards (e.g., Leary et al., 1995; Stinson et al., 2015), and domain-general risk perceptions (e.g., Cavallo et al., 2012; Heimpel et al., 2006; McElroy et al., 2007). We therefore expected that people with high self-esteem would expect greater benefits and perceive less risk across relationshipspecific behaviours and would be more tolerant of risk and consequently be more willing to engage. We also tested whether these cost-benefit tradeoffs may differ as a function of the strength of the interdependence structure (i.e., a hypothetical relationship for single participants vs. an existing partnership for coupled participants). Although single people are not a homogenous group, they may differ from romantically attached people in important ways (e.g., a fear of being single may over-sensitise them to potential benefits in relationships, Spielmann et al., 2013; concerns about rejection may prevent people from reaching out to new potential partners, Vorauer & Ratner, 1996). Furthermore, self-esteem has been shown to moderate expectations about acceptance by potential romantic partners (e.g., Cameron et al., 2010). Thus, testing for the interaction between self-esteem and the interdependence structure in which interpersonal decision-making occurs may yield important insights into how people perceive relationship behaviours.

Method

Participants

We used the MTurk Toolkit offered by TurkPrime (now CloudResearch) to recruit 411 participants residing in the US via Amazon Mechanical Turk (MTurk). One participant who indicated that they had

been in their current relationship for less than 3 months was excluded. Our final sample comprised 410 participants (57% men; $M_{\rm age}$ = 35.79, SD = 10.56), most of whom identified as white (63%; 25% Black; 5% Asian; 5% Latinx/Hispanic).

The majority of coupled participants (n=212; $M_{\rm relationship \, length}$ = 9.06 years, SD = 9.80; 55% engaged/married/civil union/common law; 46% exclusive committed relationship) lived with their partners (76%), were in monogamous relationships (95%; 4% consensually non-monogamous/polyamorous; <1% other relationship style), and identified as straight (88%; 9% bisexual; 2% gay/lesbian; <1% another sexual orientation). The majority of single participants (n=198) also identified as monogamous (81%; 10% consensually non-monogamous/polyamorous; 9% another relationship style) and straight (61%; 33% bisexual; 4% gay/lesbian; 2% another sexual orientation).

Materials and procedure

At the time of fielding the survey, TurkPrime offered data integrity checks, including blocking responses from duplicate IP addresses and blocking suspicious geocode locations. It also restricted study visibility to participants who had a 90%–100% HIT approval rating. Participants signed up directly via MTurk. Following consent, ineligible participants or those who did not pass the integrity question (i.e., Do you promise to provide your best answers?) were immediately asked to return their HIT, and no further data were collected. Data integrity (or "commitment") questions have been shown to more reliably improve data quality compared to attention checks (Geisen, 2022). Eligible participants (18+ years old; currently residing in the USA; in a relationship 4+ months in length [coupled participants]; passed integrity check) first completed demographic questions (e.g., age, gender, relationship status), followed by the expected risks and benefits of relationship behaviours questionnaires (counterbalanced), likelihood of engaging in those behaviours, and measures of self-esteem and adult attachment (not relevant to the current hypotheses and not included in subsequent studies). Participants were then thanked and debriefed and received \$1 USD.

Perceived risk

Participants were asked to rate 63 relationship behaviours in terms of their perceived risk using a 7-point scale ("For each item below, please rate the riskiness of the situation or behaviour for you, thinking about the possible consequences of the situation or behaviour for you in your relationship with your partner."; 0 = not at all risky, 3 = moderately risky, 6 = very risky; adapted from Rolison & Shenton, 2020). Behaviours tapped into 7 relationship constructs: responsiveness/support (11 items; e.g., "asking your partner for help and support in a time of need"), disclosure/capitalization (14 items; e.g., "letting your partner know when they have hurt your feelings"), forgiveness/accommodation (4 items; e.g., "forgiving your partner when they hurt your feelings"), closeness/emotional intimacy (12 items; e.g., "telling your partner that you love them"), physical intimacy (5 items; e.g., "having sex or being intimate with your partner"), need for autonomy (10 items; e.g., "giving your partner some time and personal space alone"), and relationship defection (7 items; e.g., "thinking about the reasons to leave or end your relationship with your partner"). Behaviours were either self-focused (e.g., seeking advice from your partner) or partner-focused (e.g., offering advice to your partner).

Perceived benefits

Participants were asked to rate the same 63 relationship behaviours in terms of their perceived benefit using a 7-point scale ("For each item below, please rate the benefits that you personally would obtain from the situation or behaviour in your relationship with your partner."; 0 = not at all beneficial, 3 = moderately beneficial, 6 = very beneficial).

	Risk perception		Expected benefits	
Predictor	ь	t	b	t
Self-esteem	-0.54	9.23***	0.12	3.27**
Relationship status	0.95	6.09***	0.07	0.71
Self-esteem×relationship status	-0.28	2.41*	-0.24	3.37***

TABLE 1 Study 1 model coefficients predicting risk perceptions and expected benefits.

Likelihood of engaging in behaviours

Participants were asked to rate their likelihood of engaging in the same 63 relationship behaviours using a 7-point scale ("For each item below, please rate your likelihood of engaging in each situation or behaviour in your romantic relationship with your partner."; $0 = very \ unlikely$, $3 = moderately \ likely$, $6 = very \ likely$).

Self-esteem

Participants completed a 10-item trait self-esteem measure (Rosenberg, 1965) using a 7-point scale (e.g., "I feel that I am a person of worth, at least on an equal basis with others"; 1 = strongly disagree, 7 = strongly agree). Items were averaged, and higher mean scores reflect greater self-esteem.

Results

Risk perceptions and expected benefits of relationship behaviours

We conducted multilevel linear regression analyses on risk perception and expected benefit ratings to assess risk perceptions and expected benefits. Fixed effects were included for relationship status (1 = coupled vs. 0 = single) and self-esteem (mean-centered). Random intercepts were included for participants to account for individual differences in risk perceptions and expected benefits. In a second block, we included a two-way interaction term involving relationship status and self-esteem (Table 1).

Risk perceptions

As expected, higher self-esteem was associated with lower perceived risk (b=-0.54, t(406)=9.23, p<.001, 95% Confidence Intervals [CIs] [-0.65, -0.42]), such that individuals of higher self-esteem perceived less risk than individuals of lower self-esteem. There was also a significant main effect of relationship status (b=0.95, t(406)=6.09, p<.001, 95% CIs [0.64, 1.25]), such that single participants perceived greater risk for relationship behaviours in general compared to coupled participants, suggesting a potential barrier to entry into relationships.

The effect of self-esteem was significantly moderated by relationship status (b = -0.28, t(405) = 2.41, p = .017, 95% CIs [-0.52, -0.05]; Figure 1). This two-way interaction was decomposed to test for the simple effect of relationship status for those at high (+1*SD* above the mean) and low (-1 *SD* below the mean) self-esteem and for the simple effect of self-esteem among single and coupled participants. The simple effect of self-esteem predicting risk perception was stronger among single (b = -0.71, t(405) = 7.80, p < .001) than coupled (b = -0.42, t(405) = 5.61, p < .001; Figure 1) participants, with high

^{*}p < .05. **p < .01. ***p < .001.

²Random intercepts were included for participants to account for repeated measurements across scale items within participants. Random slopes were not included in this analysis because the two predictors (relationship status and self-esteem) were both between-subjects variables and thus would not vary across participants. However, in our analysis of likelihood of engagement, random slopes were included for expected benefits and risk perception ratings as their associations with likelihood of engagement ratings could vary across participants.

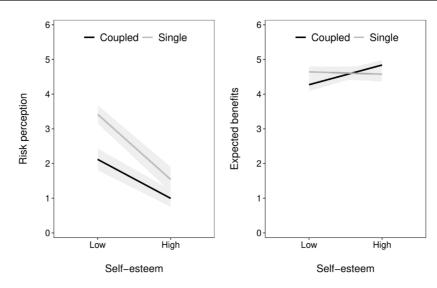


FIGURE 1 Study 1: Association between self-esteem and risk perception and expected benefits among coupled and single participants. The shaded areas indicate the 95% confidence intervals.

self-esteem being negatively associated with risk perceptions to a lesser extent among coupled participants. Additionally, the simple effect of relationship status was stronger for those with low (b=1.30, t(405)=6.10, p<.001) than high (b=0.55, t(405)=2.42, p=.016) self-esteem, with a coupled relationship status being positively associated with risk perceptions to a greater extent among those with low self-esteem.

Expected benefits

Again, consistent with our hypotheses, higher self-esteem was associated with greater expected benefits (b=0.12, t(406) = 3.27, p=.001, 95% CIs [0.05, 0.19]). There was no main effect of relationship status (b=0.07, t(406) = 0.71, p=.478, 95% CIs[-0.12, 0.25]). However, the two-way self-esteem by relationship status interaction was again significant (b=-0.24, t(405) = 3.37, p<.001, 95% CIs [-0.38, -0.10]; Figure 1). The simple effect of self-esteem was significant among coupled participants (b=0.21, t(405) = 4.70, p<.001), but not among single (b=-0.03, t(405) = 0.47, p=.639) participants, such that people in relationships expected greater benefits from relationship behaviours when they were high relative to low in self-esteem (Figure 1).

Risk tolerance and likelihood of engaging in relationship behaviours

To measure risk tolerance, we conducted a multilevel linear regression analysis on the likelihood of engaging. Fixed effects were included for risk perception and expected benefit ratings, relationship status, and self-esteem. Random intercepts were included for participants to account for individual differences in the likelihood of engaging. In this model, the coefficient for risk perception captures risk tolerance, with positive associations representing greater risk tolerance controlling for the perceived benefits (Rolison & Shenton, 2020). The model fit was further improved with the addition of random slopes for risk perceptions ($\chi^2 = 743.08$, p < .001) and expected benefits ($\chi^2 = 412.01$, p < .001). In a second block, we included two-way interaction terms involving relationship status, self-esteem, and risk perception. In a final block, we included a three-way interaction term including relationship status, risk perception, and self-esteem (Table 2).

Greater expected benefit (b = 0.25, t(17, 994) = 21.10, p < .001, 95% CIs [0.23, 0.28]) and lower perceived risk (b = -0.22, t(17, 994) = 15.22, p < .001, 95% CIs [-0.25, -0.19]) were associated with a greater

Predictor	b	t			
Self-esteem	0.11	3.43***			
Relationship status	0.12	1.50			
Perceived risks	-0.22	15.22***			
Expected benefits	0.25	21.10***			
Self-esteem×risk perception	-0.04	3.38***			
Relationship status × risk perception	0.05	1.82			
Relationship status × self-esteem	-0.03	0.47			
Relationship status × self-esteem × risk perception	-0.01	0.57			

TABLE 2 Study 1: model coefficients predicting likelihood of engaging in relationship behaviour.

likelihood of engaging in the relationship behaviours. Similarly, consistent with our hypotheses, greater self-esteem was also associated with a greater likelihood of engaging in relationship behaviours (b=.11, t(406) = 3.43, p=.001, 95% CIs [0.04, 0.17]). There was no significant effect of relationship status (b=.12, t(406) = 1.50, p=.134, 95% CIs [-0.04, 0.29]).

The effect of risk perception was significantly moderated by self-esteem (b = -0.04, t(17, 992) = 3.38, p = .001, 95% CIs [-0.06, -0.02]). We next examined the simple slopes of risk perception for people with high and low self-esteem to test whether risk tolerance differed as a function of self-esteem. Risk perception was significantly associated with a lower likelihood of engagement (i.e., less risk tolerance) when self-esteem was low (b = -0.20, t(18, 036) = -7.88, p < .001) and when self-esteem was high (b = -0.30, t(18, 036) = -12.44, p < .001). Thus, people with both high and low self-esteem were less likely to engage in behaviours they saw as more relative to less risky, but this was particularly the case for those with high self-esteem.

We also tested the simple effects of self-esteem when risk perceptions were high (+1 SD) and low (-1 SD). Simple effects analysis revealed that when perceived risk was low, self-esteem was associated with a significantly higher likelihood of engagement (b=0.16, t(406) = 3.87, p<.001), but not when the perceived risk was high (b=0.01, t(406) = 0.18, p=.856; Figure 2). Thus, people with high, relative to those with low, self-esteem reported a greater likelihood of engaging in relationship behaviours only when they saw them as less risky.

There was no significant interaction between relationship status and risk perception (b=0.05, t(17, 992) = 1.82, p=.069, 95% CIs [-0.00, 0.11]) or self-esteem (b=-0.03, t(405) = 0.47, p=.636, 95% CIs [-0.15, 0.09]). The three-way relationship status by risk perception by self-esteem interaction was also not significant (b=-0.01, t(17, 991) = 0.57, p=.571, 95% CIs [-0.06, 0.03]).

DISCUSSION STUDY 1

Overall, Study 1 provided preliminary support for our hypotheses. First, people with high self-esteem were more likely to see behaviours as beneficial and low risk than those with low self-esteem. The perceived benefits were particularly salient for coupled participants with high relative to low self-esteem. Additionally, people were more likely to engage in behaviours that they believed were beneficial and low risk. Furthermore, people with high self-esteem reported a higher likelihood of engaging in relationship behaviours only when they saw them as less risky. Thus, self-esteem appears to be associated with interpersonal decision-making due to differences in perceived risks and benefits, rather than due to differences in risk tolerance.

However, Study 1 did not consider the fluid nature of how risks and benefits can manifest day-to-day in relationships. For example, a conflict may raise the stakes on both the risks associated with engaging in behaviours with a partner (e.g., asking for support) and also the benefits (e.g.,

^{*}p < .05. **p < .01. ***p < .001.

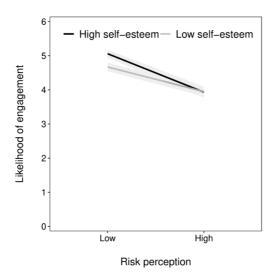


FIGURE 2 Study 1: Likelihood of engagement at low (1 SD below mean) and high (1 SD above mean) levels of self-esteem and risk perception, controlling for expected benefits and relationship status. The shaded areas indicate the 95% confidence intervals

maintaining intimacy and closeness). Studies 2 and 3 aimed to test whether the risk perceptions, perceived benefits, and risk tolerance (or lack thereof) of those with high and low self-esteem are relatively stable or responsive.

STUDY 2

Building on past research suggesting that people fluidly shift their prioritisation of connection over self-protection goals in the face of interdependence dilemmas (e.g., risk of rejection; Murray et al., 2008), Study 2 examined whether expected benefits, perceived risk, and risk tolerance toward relationship-specific behaviours are stable within the relationship or fluidly shift in response to acute interpersonal threats. We limited subsequent studies to coupled participants because acute interdependence dilemmas do not capture the same tension between connection (i.e., relationship maintenance) and self-protection (i.e., self-preservation) for single participants imagining hypothetical interactions with future partners or past experiences in relationships that ultimately dissolved.

Method

Participants

Three hundred ninety-one participants (52% men; $M_{\rm age}$ = 36.52, SD = 10.66) residing in the US were recruited via Amazon Mechanical Turk. The majority of participants identified as white (73%; 13% Black; 6% Latinx/Hispanic; 5% Asian), and all were in committed relationships ($M_{\rm relationship length}$ = 8.76, SD = 9.18; 54% married/civil union/common law; 4% engaged; 41% committed dating relationship). The majority were living with their partner (81%), identified as monogamous (95%; 4% polyamorous; 1% other relationship style), and the majority identified as straight (88%; 10% bisexual; 1% gay/lesbian; 1% another sexual orientation).

TABLE 3 Study 2: model coefficients predicting risk perception and expected benefits.

	Risk perception		Expected benefits	
Predictor	b	t	b	t
Self-esteem	-0.47	8.49***	0.15	4.00**
Relationship threat	0.05	0.33	-0.07	0.70
Self-esteem×relationship Threat	-0.19	1.73 [†]	-0.08	1.04

Note: $^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Materials and procedure

Participants signed up via MTurk and completed the same eligibility and integrity questions as Study 1 (restricting to coupled participants only). Eligible participants first completed demographic questions (e.g., age, gender, relationship status), followed by the same measure of self-esteem as Study 1. Next, participants were randomly assigned to either the relationship threat condition, where they were asked to write about a time their partner had hurt or disappointed them, or the control condition, where they were asked to write about a time their partner was responsive to their needs (Lamarche & Murray, 2014). Participants then completed the same expected risks, benefits, and likelihood of engaging in behaviours measures as Study 1. Participants were then thanked and debriefed and received \$1 USD for their participation.

Results

Risk perceptions and expected benefits of relationship behaviours

As in Study 1, we employed a multilevel linear regression analysis to assess participants' risk perceptions and expected benefits. Fixed effects were included for relationship threat (1 = threat vs. 0 = no threat) and self-esteem (mean centered). Random intercepts were included for participants to account for individual differences in risk perceptions and expected benefits. A two-way interaction term involving relationship threat and self-esteem was included in a second block (Table 3).

Perceived risk.

Consistent with Study 1 and our hypotheses, higher self-esteem was associated with relatively lower perceived risk (b = -0.47, t(388) = 8.49, p < .001, 95% CIs [-0.58, -0.36]). However, there was no significant effect of relationship threat (b = 0.05, t(388) = 0.33, p = .738, 95% CIs [-0.23, 0.32]), and threat condition and self-esteem did not interact to predict perceived risk (b = -0.19, t(387) = 1.73, p = .085, 95% CIs [-0.41, 0.03]).

Expected benefits

Once again, consistent with Study 1 and as hypothesised, higher self-esteem was associated with greater expected benefits (b = 0.15, t(388) = 4.00, p < .001, 95% CIs [0.08, 0.23]). However, again the main effect of threat condition was not significant (b = -0.07, t(388) = 0.70, p = .486, 95% CIs [-0.26, 0.12]), nor did self-esteem and threat condition interact (b = -0.08, t(387) = 1.04, p = .300, 95% CIs [-0.23, 0.07]).

³There was limited variability in the endorsement of relationship defection behaviours in Study 1—being ranked consistently as very risky, not at all beneficial, and very low likelihood of engagement. Thus, this domain was removed in subsequent studies to focus on behaviours which capture variability in perceived risks and benefits.

Risk tolerance and relationship behaviours

As in Study 1, we conducted a multilevel linear regression analysis on participants' likelihood of engagement ratings to assess risk tolerance. Fixed effects were included for risk perception and expected benefit ratings, relationship threat, and self-esteem. Random intercepts were included for participants to account for individual differences in likelihood of engagement. The model fit was further improved with the addition of random slopes for risk perceptions ($\chi^2 = 674.71 \ p < .001$) and expected benefits ($\chi^2 = 535.87, p < .001$). In a second block, we included two-way interaction terms involving relationship threat, self-esteem, and risk perception. In a final block, we included a three-way interaction term including relationship threat, risk perception, and self-esteem (Table 4).

Greater expected benefit (b=0.28, t(17, 202)=21.66, p<.001, 95% CIs [0.25, 0.30]) and lower perceived risk (b=-0.24, t(17, 202)=16.55, p<.001, 95% CIs [-0.27, -0.21]), as well as self-esteem (b=0.07, t(388)=2.30, p=.022, 95% CIs [0.01, 0.13]), were each associated with a greater likelihood of engaging in the relationship behaviours. However, there was no effect of relationship threat (b=0.07, t(388)=0.98, p=.326, 95% CIs [-0.07, 0.22]).

There was also a significant three-way relationship threat by risk perception by self-esteem interaction predicting the likelihood of engaging in relationship behaviours (b = -0.05, t (17, 199) = 1.99, p = .047, 95% CIs [-0.09, -0.00], Figure 3). We next tested the simple slopes of risk perception for those in the threat and no-threat conditions with high and low self-esteem. In the no-threat condition, both those with high (b = -0.27, t(17, 199) = -9.46, p < .001) and low (b = -0.21, t(17, 199) = -7.79, p < .001) self-esteem were less likely to engage in higher relative to lower-risk activities, though as in Study 1, the magnitude of this effect was larger for those with high self-esteem. In the threat condition, a similar pattern emerged, with people with high (b = -0.34, t(17, 199) = -10.62, p < .001) and with low (b = -0.17, t(17, 199) = 6.14, p < .001) self-esteem both being less likely to engage in relatively higher compared to lower risk activities, with this being particularly the case for those with high self-esteem.

DISCUSSION STUDY 2

Study 2 replicated the findings from Study 1 that high self-esteem was associated with greater perceived benefits and lower perceived risks associated with relationship-specific behaviours. Acute interpersonal threats did not appear to change the perceived risks and benefits associated with behaviours, suggesting these perceptions may be somewhat stable across the relationship. Furthermore, people with high self-esteem again showed a reduced likelihood of engaging in behaviours when they saw them as high risk, suggesting again that high self-esteem is not associated with risk tolerance in an interpersonal context. Study 3 again attempted to explore whether the risk perceptions, perceived benefits, and/or tolerance

TABLE 4 Model coefficients predicting likelihood of engaging in relationship behaviours.

Predictor	b	t
Self-esteem	0.07	2.30*
Relationship threat	0.07	0.98
Perceived risks	-0.24	16.55***
Expected benefits	0.28	21.66***
Self-esteem×risk perception	-0.04	3.86***
Relationship threat×risk perception	0.01	0.29
Relationship threat × self-esteem	-0.03	0.55
Relationship threat×self-esteem×risk perception	-0.05	1.99*

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

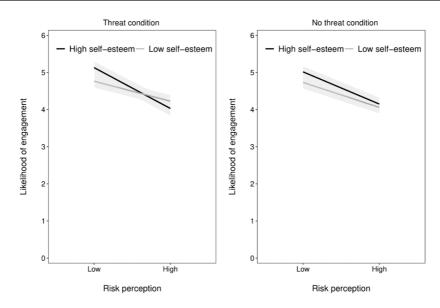


FIGURE 3 Study 2: Likelihood of engagement at low (1 SD below mean) and high (1 SD above mean) levels of self-esteem under relationship threat and no threat conditions, controlling for expected benefits. The shaded areas indicate the 95% confidence intervals.

of people with high versus low self-esteem influence self-protection and connection goals when facing acute interpersonal threats.

STUDY 3

The aim of Study 3 was to test whether relationship connection and self-protection goals people with high, relative to low, self-esteem, respectively, prioritise following acute relationship threats (cf. Murray et al., 2008) are better explained by differences in risk perception (i.e., having stronger connection goals/weaker self-protection goals because the behaviours seem less risky) or whether they are better explained by risk tolerance (i.e., having stronger connection goals/weaker self-protection goals because the benefits seemingly outweigh the perceived risks).

Method

Participants

Three hundred ninety-six participants residing in the US were recruited via Amazon Mechanical Turk. No participants failed an integrity question probing their commitment to provide thoughtful answers to the study questions. Seven participants who indicated that they were single and two participants who indicated that they had been in their current relationship for less than 3 months were excluded, leaving a final sample of 387 participants (52% men; $M_{\rm age} = 35.86$, SD = 10.53). The majority of participants identified as white (80%; 10% Black; 4% Latinx/Hispanic; 4% Asian). The majority of participants ($M_{\rm relationship length} = 8.05$, SD = 8.70) were married/civil union/common-law (54%; 5% engaged; 37% exclusive committed relationship; 3% casually dating), were living with their partner (83%), were monogamous (94%; 6% polyamorous; 1% other relationship style), and identified as straight (85%; 12% bisexual; 2% gay/lesbian).

TABLE 5 Study 3: model coefficients predicting self-protection and connection goals.

	Self-protection goals		Connection goals	
Predictor	b	t	b	t
Self-esteem	1.26	16.94***	.43	7.95***
Relationship threat	0.60	3.25**	0.06	0.45
Self-esteem \times self-esteem	-0.06	0.44	0.04	0.34

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

Materials and procedure

Participants signed up via Amazon Mechanical Turk, and completed the same eligibility and integrity questions as Study 2. Eligible participants first completed demographic questions (e.g., age, gender, relationship status). Participants then completed the same expected risks, benefits, likelihood of engaging, and self-esteem measures as Studies 1 & 2, and threat manipulation as Study 2, followed by measures of connection and self-protection goals. Participants were then thanked and debriefed and received \$1 USD for their participation.

Connection goals

Participants completed a 7-item measure (Murray et al., 2008) rating how true or untrue each statement was regarding their own relationship (e.g., "I typically focus on the strengths I hope to build in my relationship in the future"; 1 = not at all true, 9 = completely true). Items were averaged, and higher scores reflect greater connection goals.

Self-protection goals

Participants completed a 10-item measure (Murray et al., 2008) rating how true each statement was of their own relationship (e.g., "My major goal in my relationship is to avoid being a failure as a romantic partner"; 1 = not at all true, 9 = completely true). Items were averaged, and higher scores reflect greater self-protection goals.

Results

Self-protection and connection goals

We employed a linear regression analysis to assess participants' self-protection and connection goals. Fixed effects were included for relationship threat (1 = threat vs. 0 = no threat) and self-esteem (continuous). A two-way interaction term involving relationship threat and self-esteem was included in a second block (Table 5).

Self-protection goals

Consistent with past work (e.g., Murray et al., 2008) and our hypotheses, there was a significant main effect of self-esteem such that relatively greater self-esteem was negatively associated with self-protection goals (b = -1.26, t(384) = 16.94, p < .001, 95% CIs [-1.40, -1.11]; Figure 4). Furthermore, there was a significant positive main effect of relationship threat condition, such that participants in the relationship threat condition reported greater self-protection goals compared to those in the no threat condition (b = 0.60, t(384) = 3.25, p = .001, 95% CIs [0.24, 0.97]; Figure 4). However, the two-way threat condition by self-esteem interaction was not significant (b = -0.06, t(383) = 0.44, p = .664, 95% CIs [-0.36, 0.23]).

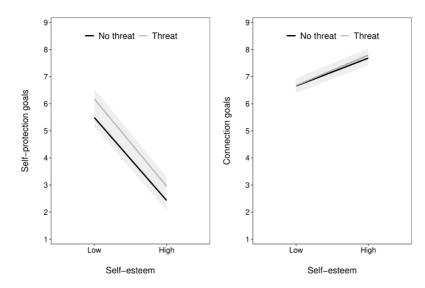


FIGURE 4 Study 3: Self-protection and connection goals at low (1 SD below mean) and high (1 SD above mean) levels of self-esteem under relationship threat and no threat conditions. The shaded areas indicate the 95% confidence intervals.

Connection goals

Again, consistent with past work and our hypotheses, there was a significant main effect of self-esteem, such that greater self-esteem was positively associated with connection goals (b=0.43, t(384) = 7.95, p< .001, 95% CIs [0.32, 0.54]; Figure 4). However, neither the main effect of relationship threat condition (b=0.06, t(384) = 0.45, p=.651, 95% CIs [-0.20, 0.33]), nor the two-way threat condition by self-esteem interaction (b=0.04, t(383) = 0.34, p=.734, 95% CIs [-0.18, 0.25]), were significant.

Risk tolerance and relationship behaviours

We conducted a multilevel linear regression analysis on participants' likelihood of engagement ratings to assess risk tolerance. Fixed effects were included for risk perception and expected benefit ratings, relationship threat, self-esteem, and self-protection and connection goals. Random intercepts were included for participants to account for individual differences in likelihood of engagement. The model fit was further improved with the addition of random slopes for risk perceptions ($\chi^2 = 634.67$, p < .001) and expected benefits ($\chi^2 = 590.76$, p < .001). In a second block, we included all two-way interaction terms involving relationship threat, self-esteem, risk perception, and self-protection and connection goals. In a third block, we included all three-way interaction terms. These interactions allowed us to test whether the association between self-protection goals and likelihood of engaging in behaviours, and connection goals and likelihood of engaging in behaviours, was moderated by threat and/or self-esteem (Table 6).

Likelihood of engaging in relationship Behaviours

Consistent with Studies 1 and 2, greater expected benefit (b = 0.16, t(17, 0.26) = 12.42, p < .001, 95% CIs [0.13, 0.18]) and lower perceived risk (b = -.12, t(17, 0.26) = 9.83, p < .001, 95% CIs [-0.15, -0.10]) were associated with a higher reported likelihood of engaging in the relationship behaviours. Furthermore, connection goals (b = 0.34, t(382) = 13.24, p < .001, 95% CIs [0.29, 0.39]), were positively and significantly associated with a higher likelihood of engaging in relationship behaviours, but self-protection goals were not (b = -0.03, t(382) = 1.84, p = .067, 95% CIs [-0.07, 0.00]). When controlling for self-protection and connection goals, self-esteem was no longer significantly

TABLE 6 Study 3: model coefficients predicting likelihood of engaging in relationship behaviours.

,	1	O	000	1	
Predictor				b	t
Self-esteem				0.03	0.83
Relationship threat				-0.08	1.17
Risk perception				-0.12	9.83***
Expected benefits				0.16	12.42***
Connection goals				0.34	13.24
Self-protection goals				-0.03	1.84 [†]
Connection goals × self-protection g	goals			0.02	1.48
$Self\text{-}Esteem \times self\text{-}protection\ goals$				-0.03	2.20*
$Self\text{-}Esteem \times connection\ goals$				0.02	0.71
Relationship threat × risk perception	n			-0.01	0.22
Relationship threat × self-protection	goals			0.07	1.94 [†]
Relationship threat × connection go	als			0.08	1.68 [†]
Relationship threat \times self-esteem				-0.01	0.16
Risk perception × self-protection go	als			0.04	6.27***
$Risk\ perception \times connection\ goals$				0.02	1.96 [†]
Risk perception \times self-esteem				0.01	1.11
+					

Note: $^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

associated with the likelihood of engaging in relationship behaviours (b = 0.03, t(382) = 0.83, p = .410, 95% CIs [-0.04, 0.10]), or was relationship threat condition (b = -0.08, t(382) = 1.17, p = .243, 95% CIs [-0.21, 0.05]).

Only the two-way risk perception by self-protection goals predicting likelihood to engage in behaviours interaction was significant, (b=0.04, t(17, 022)=6.27, p<.001, 95% CIs [0.03, 0.05]). Next, we decomposed the simple effects of risk perception for those high (+1SD) and low (-1SD) in self-protection. When self-protection goals were low, people were less likely to engage in behaviours when they were perceived as relatively riskier (b=-.23, t(17, 022)=-9.96, p<.001). However, when self-protection goals were high, the perceived riskiness of the behaviour was no longer associated with likelihood of engagement (b=-.04, t(17, 022)=-1.62, p=.11), suggesting that people high in self-protection goals are generally less likely to engage in the relationship behaviours regardless of perceived risk. Furthermore, the simple effect of self-protection goals was significant for less risky behaviours (b=-.16, t(376)=-5.28, p<.001), with those higher in self-protection goals being less likely to engage in less risky behaviours than those low in self-protection goals. However, the simple effect of self-protection goals was not significant for riskier behaviours (b=-.01, t(376)=.28, p=.78).

DISCUSSION STUDY 3

Consistent with past work, self-esteem was positively associated with connection and negatively associated with self-protection goals. Furthermore, Study 3 found that people low in self-protection goals are more likely to engage in behaviours they perceive as less risky, while those high in self-protection goals are less likely to engage in behaviours regardless of risk. Again, Study 3 illustrates that for interpersonal decision-making, risk perceptions appear to drive decisions around whether or not to engage in behaviours more than risk tolerance. However, Studies 1–3 are limited in that

⁴Consistent with Studies 1 and 2, self-esteem positively and significantly with likelihood of engaging in relationship behaviours when self-protection and connection goals were not included in the model (b=0.22, t=6.67, p<.001).

they focus on action intention rather than actual behaviours. Thus, our final study aimed to address this limitation in the methods.

STUDY 4

Studies 1–3 suggest that perceived risks and benefits of relationship behaviours are associated with people's *intended* likelihood of engaging in these behaviours (i.e., self-reported likelihood of engaging). However, whether people are *actually* more likely to engage in certain behaviours they see as particularly beneficial or risky remains unanswered. The aim of Study 4 was to extend the observed pattern of findings by testing whether the patterns observed in Studies 1–3 translated into enacted behaviours.

Method

Participants

Two hundred and forty-eight participants were recruited via Prolific to complete a two-part study on relationships. Participants had to be in a romantic relationship and currently living with their partner, as well as pass an integrity check question affirming that they promise to give their best answers throughout the study in order to be eligible to participate in the study. Of the eligible participants, an additional 4 participants stopped responding partway through the demographics section, and 1 participant stopped responding after the perceived risks questionnaire and was subsequently dropped from analyses, leaving a final sample of 244 participants (52% women; $M_{\rm age} = 45.67$, SD = 13.18) who completed the Time 1. Of these, 225 (92%) completed the Time 2 follow-up survey 48 h later. The majority of participants identified as white (94%; 3% Asian; 1% Black; 1% mixed), and all were in committed relationships ($M_{\rm relationship length} = 18.75$, SD = 13.37; 72% married/civil union/common law; 7% engaged; 21% committed dating relationship). The majority identified as monogamous (99%; 1% polyamorous; <1% other relationship style), and the rest as straight (90%; 7% bisexual; 3% gay/lesbian).

Materials and procedure

The Time 1 survey was made available on a Friday afternoon (1 pm BST) with the instructions that this was a 2-part study completed that day and on the following Monday. Eligible participants first completed demographic questions (e.g., age, gender, relationship status) and then completed the same expected risks, benefits, and likelihood of measures and measure of self-esteem as in Studies 1–3. The Time 2 survey was posted the following Monday afternoon (2 pm BST) for participants who had completed Time 1. Participants were asked to reflect on the interactions they had with their partners over the weekend. Participants received £3 for completing the 15-min Time 1 survey and an additional £1 for completing the 10-min Time 2 survey (consistent with Prolific's minimum payment of £6/h pro-rata).

Enacted behaviours

At Time 2, participants were asked whether they had engaged in a series of 44 behaviours with their partner over the weekend (1 = yes, 0 = no). The behaviours corresponded to the same behaviours in the "likelihood of engagement" measures completed at Time 1. Items were summed, and higher scores reflect greater behavioural enactment.

Results

We matched the enacted behaviours with corresponding items in the self-report scale to evaluate associations between risk perceptions, expected benefits, and enacted behaviours at the item level. We conducted a multilevel logistic regression analysis on participants' enacted behaviours (1 = yes, 0 = no), including fixed effects for risk perception and expected benefit ratings and self-esteem. Random intercepts were included for participants. The model fit was further improved with the addition of random slopes for risk perceptions ($\chi^2 = 38.60$, p < .001) and expected benefits ($\chi^2 = 36.64$, p < .001). Greater expected benefits (b = 0.53, t(216) = 21.93, p < .001) and lower perceived risks (b = -0.32, t(216) = 11.18, p < .001) were associated with enacting those behaviours. Thus, people who perceive the benefits and do not see the risks in relationship behaviours are most likely to actually engage in them (Table 7).

DISCUSSION STUDY 4

Study 4 extended the findings of Studies 1–3 by examining the actual behaviours people engaged in over a weekend. Consistent with the previous studies, expecting more benefits and perceiving less risk in relationship behaviours was associated with actually enacting those behaviours with partners. Thus, risk perceptions and expected benefits are important for guiding how people behave with their partners.

GENERAL DISCUSSION

The aim of this research was to better understand the complex decision-making process behind the personal risk—reward tradeoff that underpins life in romantic relationships. Past research was limited in its ability to disambiguate between *perceptions* of risks as opposed to *tolerance* of risk, relative to the benefits associated with behavioural decision-making in relationships. The modelling used in these studies made it possible to distinguish between risk *perceptions* (i.e., how risky a behaviour is perceived to be) and risk *tolerance* (i.e., how likely people are to engage in a behaviour *despite* its perceived risks). Theoretical models of interpersonal risk and reward (i.e., interdependence theory, Thibaut & Kelley, 1959; Kelley et al., 2003; Holmes, 2002; Rusbult & Van Lange, 2008; relationship risk regulation, Murray et al., 2006, 2008) and models of individual differences in interpersonal risk sensitivity (i.e., self-esteem, Leary et al., 1995; Murray et al., 2008; Stinson et al., 2015) were integrated with psychological risk—return frameworks from the field of decision-making (Rolison & Shenton, 2020; Weber et al., 2002). This intradisciplinary approach provided a unique test of how self-esteem informs the risk perceptions that drive relationship behaviours.

Consistent with our hypothesesand past research, high self-esteem was associated with lower perceived risk and greater perceived benefits of relationship behaviours (Studies 1 & 2) and with greater connection goals and lower self-protection goals (Study 3). Furthermore, greater perceived benefits and lower perceived risks were not only associated with a greater likelihood of wanting to engage in relationship behaviours (Studies 1–3), but also in actually engaging in these behaviours (Study 4). Perceived risks and benefits did not vary as a function of acute relationship threats (Studies 2 & 3), suggesting

TABLE 7 Study 4: model coefficients predicting enacting relationship behaviours.

Predictor	b	t
Risk perceptions	-0.32	11.18***
Expected benefits	0.53	21.93***
Self-esteem	-0.02	0.47

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

these perceptions and the corresponding likelihood of engaging in certain relationship behaviours are more strongly linked to dispositional orientations.

The findings also provide a preliminary answer to the question as to whether people with high self-esteem are more likely to want to engage in certain behaviours because they are more risk tolerant (i.e., likelihood of engaging despite risks because of the perceived benefits) or rather simply do not see the risk associated with those behaviours. Overall, our findings suggest that people with high self-esteem were indeed more likely to engage in different relationship behaviours under different circumstances (e.g., threat versus no threat), but only if the perceived risks associated with those behaviours were *low*. When people with high self-esteem believed a behaviour was particularly risky, they were no more or less likely to engage in those behaviours than people with low self-esteem.

These findings have important implications for the understanding of how people make decisions with regard to how they behave in their relationship. Past work has shown that self-esteem differences reliably predict global positivity or negativity toward interpersonal experiences and expectations (Baldwin et al., 2003; Baldwin & Sinclair, 1996; Leary et al., 1995) and that these global attitudes inform whether to prioritises connective or self-protective thoughts and behaviours, especially when faced with interpersonal risk (e.g., Lamarche & Murray, 2014; Murray et al., 2008; Stinson et al., 2015). However, what has remained less well understood was whether these decisions were driven by a tolerance to the risk associated with prioritising the relationship over self-protection or whether some people simply see less risk associated with these behaviours in the first place. The current findings suggest it is the latter-people with high self-esteem are more likely to engage in behaviours because they see them as highly beneficial and relatively low risk. This insight can potentially help researchers resolve longstanding questions, such as why high self-esteem people seemingly find themselves in higher-quality relationships (e.g., Cortes & Wood, 2018) despite being more open to behaviours and cognitions that open them up to risks (e.g., forgiveness, Luchies et al., 2010; sacrifices, Righetti & Visserman, 2018), or why people with high self-esteem are more likely to end a relationship (Perilloux & Buss, 2008) despite their tendency to prioritise connection.

The findings from this work can also provide novel insights for those interested in interventions aimed at improving relationships. People with low self-esteem are more likely to experience relationship difficulties. This is partly because they do not maximise the benefits available to them in their relationships (Murray et al., 2002) and because a preoccupation with risks can result in a self-fulfilling prophecy of poor behaviour by their partners (Downey et al., 1998; Levy et al., 2001). Thus, there is a need for interventions to support better relationship outcomes among those with low self-esteem. The current findings provide a potential pathway via risk perceptions that may help improve self-esteem or relationship evaluations for those with low self-esteem. For example, past work suggests that cognitive behavioural therapy (CBT) is highly effective at improving self-esteem (Niveau et al., 2021). CBT may improve outcomes for people with low self-esteem because it helps them address the cognitive distortions that impede their decisionmaking (Leddy et al., 2013), such as their tendency to overperceive risks or undermine potential benefits. Shifting risk perceptions has been associated with longitudinal changes in behaviour (Brewer et al., 2004), which may benefit people struggling in their relationships. Similarly, the current findings point to novel directions for research aimed at understanding the mechanisms underlying already developed relational interventions. For example, an intervention by Marigold et al. (2007) suggests that people with low selfesteem can be trained to accept compliments from their partners, improving relationship satisfaction over time. However, it remains unclear whether interventions such as these influence their perceptions of risk associated with trusting that a partner's compliments are genuine, whether it influences their risk tolerance, or whether they have no impact on these underlying decision-making factors. Thus, this work provides a new framework for considering how and why interventions may benefit people in relationships, and particularly those preoccupied with risks.

Another important implication from the current findings was the differences across relationship status in Study 1. Single participants perceived more risks in relationship behaviours compared to people who were coupled, but not more benefits, and they were no more or less likely to engage in relationship behaviours. Relationship status further moderated the association between self-esteem and risk perceptions

and expected benefits. Notably, people with low self-esteem saw more risks associated with relationship behaviours relative to highs, especially when they were single. By contrast, those with high self-esteem expected greater benefit relative to lows, especially when they were coupled. These differences may suggest that perceptions of risks and benefits may indeed change over time as a function of learning more about the partner and what can and cannot be expected over time (Cone et al., 2017; Murray et al., 2019; Zayas & Shoda, 2015). Additional research is therefore needed to understand the factors that contribute to changes in perceived risk in relationships over time. Additionally, more research is needed to understand why relationship status is associated with differences in perceived risks of relationship behaviours but not their perceived benefits or their likelihood of engaging in them. This inconsistency may reflect more generalized beliefs about the value and social capital associated with relationships. Relationships are a valued social identity that confers many personal benefits, both as a consequence of the direct benefits through partner support as well as indirectly through social status (Day, 2015). While society idealises being romantically attached, being single is stigmatised (DePaulo & Morris, 2006). Alternatively, these differences may reflect individual differences in how beneficial people think relationships are. For example, recent work has identified three profiles of long-term singlehood resulting from attachment system deactivation, hyperactivation, and secure personal choice (Pepping et al., 2018), which are also associated with maladaptive (deactivation; hyperactivation) and adaptive (secure choice) interpersonal outcomes. It is possible that these profiles would also influence how people perceive the benefits associated with relationship behaviours and their likelihood of engaging in them.

Limitations and future directions

Despite the strengths of this work, it is not without limitations that should be addressed in future research. First, the current research focused on personal evaluations of risk rather than objective evaluations of risk. Personal evaluations are important, because unlike some behaviours that are objectively risky (e.g., jumping from an aeroplane) the risk associated with relationship behaviours is in part contingent on the partner (e.g., forgiving a partner with a history of more prosocial behaviour is less risky than forgiving a partner with a history of self-centred behaviour). If differences in self-esteem constrain the evaluations of how risky a partner is, this may in part help explain why more trusting individuals experience declines in satisfaction when paired with a high-risk partner (e.g., Murray et al., 2015), whereas it may help explain why those who are more realistic in how they perceive the risk in their partnerships (e.g., those with low self-esteem; Cortes & Wood, 2018) have abated declines in satisfaction over time when paired with high-risk partners. Further research should therefore examine the dyadic realities of risk tolerance and whether risk perceptions are accurate or biased (Lemay Jr. et al., 2007).

Another limitation is the failure to capture fluid changes in risk—benefit perceptions as a function of acute threats to the relationship. This may reflect the nature of the threat manipulation, which relied on participants reflecting on an acute threat that has already transpired in the past. It is possible that risk tolerance did not shift as a function of reminders of past transgressions because people had already come to terms with the implications of those events for their relationship and, in fact, may use those past events to inform their evaluation of risk in the moment. Future research would therefore still benefit from examining the extent to which evaluations of risks, benefits, and risk tolerance shift day-to-day in response to relationship threats as they arise and whether daily fluctuations in relationship threats in some way shape evaluations of risk tolerance in relationships more broadly (Cone et al., 2017).

CONCLUSION

The interdependent reality of intimate relationships is such that people are constantly weighing the costs and benefits of their behaviours. However, while past work has shown dispositional tendencies

associated with prioritising relationship behaviours associated with connecting with a partner over self-protecting from harm, it has been unclear whether people differed in the baseline risks they perceived in these actions or whether they were simply more tolerant of the potential risk. The current research suggests that people with high self-esteem are more likely to see the benefits and minimise the risks associated with relationship behaviours, and it is this lack of perceived risk that enables them to behave prosocially in their relationships rather than being more tolerant of potential harms.

AUTHOR CONTRIBUTIONS

Veronica M. Lamarche: Conceptualization; investigation; writing – original draft; methodology; writing – review and editing; data curation; project administration. **Jonathan J. Rolison:** Conceptualization; investigation; methodology; writing – review and editing; formal analysis; data curation; project administration.

ACKNOWLEDGEMENTS

The materials and data used in this research are openly available via the Open Science Framework for this project (https://osf.io/74drw/). The project was not pre-registered prior to data collection or analysis.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in Open Science Framework at https://osf.io/74drw/.

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How to cite this article: Lamarche, V. M., & Rolison, J. J. (2025). Can I tolerate that kind of behaviour? Self-esteem, expected benefits, risk perceptions and risk tolerance in romantic relationships. *British Journal of Social Psychology*, 64, e12860. https://doi.org/10.1111/bjso.12860