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Identity centrality moderates the relationship between acceptance of group-based stressors and well-being

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ABSTRACT

Two two-wave studies were used to examine the proposition that identity centrality enhances the effectiveness of stressor acceptance in the face of group-based stressors. Study 1 was conducted in newly commencing psychology students (N=154). Stressor intensity, psychology student identity centrality, and attempted stressor acceptance were measured at two-time points over six-weeks. Study 2 was conducted in a group of early to late career veterinarians (N=92) and extended Study 1 by assessing stressor frequency as an indicator of the level of demand. Veterinarian identity centrality and stressor acceptance were measured twice over 12-months. Both studies provided support for the predicted three-way interaction. Only when Time 1 stressors and identity centrality were both high was stressor acceptance related to a reduction in perceived stressor intensity (Study 1) or burnout symptoms (Study 2) at Time 2. These findings suggest that identity centrality enhances the effectiveness of stressor acceptance for supporting wellbeing and resilience.

Keywords: resilience; stressor acceptance; social identity; burnout; coping

Introduction

Stressor acceptance is a critical coping strategy in conditions of reduced control (Lent, 2014). The workplace and training setting often entails stressors that are inherently limited in control and contribute to the erosion of personal resilience. For example, in training students will experience stressors as part of assessments and examinations. Similarly, membership in a professional group (e.g., veterinarians) involves stressors that are inherent to that profession (e.g., long hours, difficult and emotional clients, performance and convenience animal euthanasia). As a professional group, suicide rates and mental health issues are markedly higher in veterinarians than the general population (e.g., Gardner & Hini, 2006; Jones-
Fairnie, Ferroni, Silburn, & Lawrence, 2008; Mellanby, 2005). Job-related aspects, such as the performance of animal euthanasia for reasons that conflict with professional or personal values, have often been credited with the high prevalence of psychological distress present in the veterinarian profession (Bartram & Baldwin, 2010; Morris, 2012). Previous research and theory suggests that job-related stressors can increase the likelihood of employee distress or burnout if there are limited means to reduce their effects (e.g., Bakker, Demerouti & Verbeke, 2004; Crawford, LePine, & Rich, 2010; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The functional application of acceptance is a coping strategy with the capacity to reduce psychological distress and promote resilience when faced with uncontrollable occupational and training stressors. However, historically stressor acceptance has been a challenging strategy to encourage and ensure effective. Hayes, Stroshal, and Wilson (1999) framed the problem eloquently in their book “We do not know how best to establish acceptance or the best conditions under which to use these strategies” (p.282). In the present research, we consider whether one of the conditions that may help to establish effective acceptance is social.

In this research, we explore whether a particular dimension of social identification, identity centrality, enhances the effectiveness of cognitive acceptance of stressful events to protect wellbeing and support resilience. Thus, when people say ‘it’s all just part of a day’s work’ in relation to the stressors they encounter in their professional life, perhaps they are saying something important about what makes them resilient to the stressors associated with their profession or work context. This leads us to the broader proposition that acceptance will be more effective when uncontrollable stressors are presented as part of a meaningful group membership. Beyond the occupational context, the same principle is likely to be broadly applicable to a diverse range of groups and group-based stressors. Research investigating how we can facilitate the adaptive acceptance of certain group-based stressor events is likely
to allow the development of approaches to equip individuals with strategies to support their resilience and identifying those at risk.

**Social identification, wellbeing, and reduced symptoms of distress**

Social identification refers to the idea that group memberships can be internalized and self-defining. The more self-defining a group membership is, the stronger the sense of identification (Ashforth & Mael, 1989; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Recent work demonstrates the relationship between higher social identification and better physical and psychological wellbeing during adversity and stress (e.g., Cruwys, et al., 2014; Haslam & Reicher, 2006; Haslam, O’Brien, Jetten, Vormedal, & Penna, 2005; van Dick & Wagner, 2002). Social identification has also been found to promote wellbeing by buffering the potential negative effects of stressor events and transitions (e.g., Brook, Garcia, & Fleming, 2008; Haslam et al., 2005; Haslam et al., 2009; Praharso, Tear, & Tegan, 2017).

In the work context, organizational identification shows these same beneficial effects in relation to physical health and burnout symptoms (Brotheridge & Lee, 2003; Wegge, van Dick, Fisher, Wecking, & Moltzen, 2006; van Dick & Wagner, 2002). Organizational identification refers to the degree that employees define themselves in reference to the attributes of the organization they work for (Dutton, Dukerich, & Harquail, 1994). In this way, organizational identity reflects a particular type of social identity. Schaubroeck and Jones (2000) demonstrated that high organizational identification functioned as a moderator in the relationship between perceived emotional labor (i.e., requirement to suppress or express particular emotions as part of a job-role) and physical distress symptoms. Specifically, when organizational identification was high the relationship between perceived emotional labor and physical symptoms was attenuated, compared to when organizational
identification was low. Thus, social identities offer a protective function when stressors associated with that group membership are high.

Acceptance as an adaptive coping response

Acceptance is considered an adaptive coping response whereby the individual is willing to accept the reality of the problem (Carver, Scheier, & Weintraub, 1989). Acceptance is the opposite of denial or avoidance; it reflects the capacity of an individual to accept stressor events, including uncomfortable thoughts and feelings, just as events that are part of the situation. For example, a veterinarian may simply accept that performing euthanasia, while stressful, may be part of their role as a veterinarian. Acceptance prevents on-going rumination about a stressor because such events or cues (whether external, cognitive, or emotional) are not judged as good or bad, but rather are acknowledged in the absence of evaluation (Sauer & Baer, 2010). In this way, cognitive acceptance has been shown to be functional in preventing stress from turning into distress because it inhibits an individual from being caught up in a cycle of negative thinking about the stressor event.

Acceptance is also the first step before acting to address aspects of the event that are changeable. For example, an employee may anticipate an extremely busy period at work during a specific time of the year. Coinciding with this busy period is the arrival of a new child. While a joyous event, a new baby can place considerable strain on the family; denial in this situation would be the tendency to ignore or underestimate the additional strain. Acceptance is a willingness to acknowledge the difficulties of the situation during an already stressful time, and to allow for the implementation of pro-active strategies to manage the stress (e.g., organizing support from family) and behaviors aligned with important values (i.e., a commitment to child rearing). The planning behaviors that emerge from acceptance are referred to as anticipatory coping (Aspinwall & Taylor, 1997; Newby-Clark, 2004).
Attention can be refocused on managing the stressor, and on positive activities that are consistent with values (i.e., leading a fulfilling and positive life; Evers et al., 2001; McCracken & Eccleston, 2003). Thus, stressor acceptance involves the willingness to accept that the stressor exists (and may cause difficulty) and is the basis for problem-solving or planning aimed at minimizing associated stress.

Previous work has identified that stressor acceptance is an adaptive strategy (e.g., Britt, Crane, Hodson, & Adler, 2016; Lutgendorf et al., 1998; Pérez et al., 2009). Cognitive acceptance is a feature of acceptance commitment approaches to coping (Hayes, 1987; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Trials of acceptance-based therapies have shown that it is as effective as (if not more so than) traditional cognitive-behavioral approaches in the treatment of diverse mental illness symptoms (Forman, Hoffman, McGrath, Herbert, Brandsma, & Lowe, 2007; Zettle & Hayes, 1986; Geiser, 1993). Thus, cognitive acceptance of stressors is an important strategy for supporting wellbeing in the presence of stressor events.

Important to note, however, is that acceptance is inherently challenging (Kornhaber, Wilson, Abu-Qamar, & McLean, 2014). As noted previously, there is little understanding of how to best engender functional acceptance (Hayes, et al., 1999). Although acknowledgement of the need to accept an event may occur, this does not mean that one is fully willing to accept the stressor. In this way, an individual may not truly internalize stressor acceptance. We suggest that the benefits of stressor acceptance are enhanced when stressors are perceived as part of what it means to be a group member. That is, social identities are considered to potentiate the beneficial role of acceptance of stressors by providing a meaningful context in which stressors are experienced.
The role of identity centrality in enhancing the beneficial effects of stressor acceptance

We consider identity centrality, as a particular dimension and sub-component of social identity, to be particularly critical to enhancing the beneficial effects of acceptance. Identity centrality refers to the degree that group-based identities are subjectively important and internalized as part of the self-concept (Leach et al., 2008). Identity centrality relates specifically to the significance of the group to the individual, the chronic salience of the group membership, and the degree that the group membership is self-defining and important to one’s self-concept (Leach, et al., 2008). Identity centrality has been shown to be distinct from other aspects of social identification including self-stereotyping (i.e., perceiving oneself as similar to other group members), solidarity (i.e., feeling a bond or connection with other group members), satisfaction (i.e., feeling positive emotional affect in relation to the group) and ingroup homogeneity (i.e., perceived commonality between group members; Leach, et al., 2008). While multiple aspects of social identification may play a role in promoting resilience (Jetten, et al., 2015; Praharso, et al., 2017; Seymour-Smith, Cruwys, Haslam, & Brodribb, 2016). Previous work has demonstrated the particular importance of identity centrality in reducing perceived discrimination among minority group members (Ramos, Cassidy, Reicher, & Haslam, 2010). We propose that identity centrality is of particular importance to enhancing the effects of stressor acceptance because the chronic salience of the group identity is what enables relevant stressors to be contextualized as part of what it means to be a group member. Thus, in this research we specifically examine the role of identity centrality as the critical dimension of social identification that enhances the positive function of stressor acceptance.

Group-based identities carry information about group norms and this has implications for group member perceptions and behavior (for reviews, see Cartwright & Zander, 1968; Turner et al., 1987). Social identities have been used to explore and explain how people make
sense of, and respond to, the social context. In a similar way, social identification, particularly identity centrality, may impact the way in which stressors are contextualized and modulate our willingness to accept them. Stressors perceived to be intrinsic to a group membership may be more readily accepted than those that are not. In research examining the role of social identification on symptom severity, Levine and Reicher (1996) demonstrated that when females thought of themselves as women, illness/injuries that threatened physical attractiveness (i.e., scarring) were rated as more serious than when females thought of themselves as a physical education student. In other words, illnesses or injury may elicit less distress when they are not considered to threaten a salient identity. Taking this line of reasoning a step further, we are proposing that there are likely to be times that stressors are ubiquitous with an important social identity and under these conditions do not negatively impact wellbeing. In the present research, group-based stressors are defined as demands that occur as a consequence of one’s group membership, are potentially considered group-defining (e.g., performance of animal euthanasia as a veterinarian; exams as a stressor emerging because of being a student), and are not in direct conflict with group values or goals.

Two pieces of research suggest the potential capacity for identity centrality to enhance the positive effects of cognitive stressor acceptance. First, as noted earlier, organizational identification was found to attenuate the negative relationship between emotional labor and physical wellbeing (Schaubroeck & Jones, 2000). These authors suggested that organizational identification facilitates wellbeing despite high emotional labor demands because “individuals who identify strongly with their organizations and/or their jobs may more fully subscribe to the belief that they must often behave in an emotionally ‘inauthentic’ fashion to serve the purposes of their roles” (Schaubroeck & Jones, 2000, p. 169). We suggest that beyond the fact that “fully subscribing to the belief” makes emotional labor necessary, this
may in fact involve the internalization of acceptance of stressor events (e.g., emotional labor) as part of what it means to be a member of that organization or group.

Second, in a study of soldiers in basic training, Britt et al., (2016) examined the role of different coping strategies in moderating the impact of training demands on psychological distress symptoms across time. The findings demonstrated that increased acceptance of stressors as part of what it meant to be a professional soldier was the coping strategy most strongly related to reductions in psychological distress. The relationship between the intensity of stressors and mental illness was attenuated by high stressor acceptance at each of four time points across the 10-week training. Britt et al. (2016) speculated that stressor acceptance was a powerful coping strategy in this study because it was framed in the context of an important identity. However, the authors did not directly explore to what extent identity facilitated the effectiveness of stressor acceptance.

The present research

In the present research, we investigate whether the social psychological context is able to alter the effectiveness of stressor acceptance. In work and training, it is often important that individuals are able to tolerate stressors related to these contexts in an adaptive way in order to promote career longevity, resilience, and performance. We test the proposition that the effectiveness of stressor acceptance in reducing psychological distress in response to a high level of group-based stressors is enhanced by identity centrality. Two longitudinal studies examine this basic proposition. This research is important to helping us to understand both the protective function of social identities and how to enhance the effectiveness of cognitive acceptance of stressors.
Study 1

Study 1 was a two-wave online survey conducted with first year undergraduate students commencing psychology at a large Australian university. Commencing psychology students were selected for two reasons. First, we anticipated that the range of professional identification would be greater than in later years where students have committed themselves to psychology as a course of study. Second, adjusting to university can be a challenging and uncertain time for students and we wished to measure the role of acceptance coping during this period of adjustment. Given that stressor acceptance is only relevant in contexts where stressors are perceived to be problematic, we measured perceived stressor intensity at T1 and T2. Stressor intensity captures the psychological appraisal of stressors (Jose & Ratcliffe, 2004). In Study 1, perceived stressor intensity was measured as the perception that stressors related to studying were anticipated to overwhelm the participant's coping capacity at T1: we expected the critical effects to emerge for those who were more overwhelmed at T1. The anticipation of being overwhelmed by study related stressors also functioned as the wellbeing outcome variable measured at T2, where acceptance and identity were expected to improve wellbeing at T2, controlling for T1. Thus, cognitive acceptance of stressors as well as psychology student identity centrality were measured at T1 and T2. In line with our theorizing present in the introduction, we tested the following hypothesis:

**H1:** T1 perceived stressor intensity, T1 stressor acceptance, and T1 identity centrality will predict T2 perceived stressor intensity in a three-way interaction. The nature of the interaction will be such that:

a) Greater acceptance will reduce stressor intensity, but when T1 perceived stressor intensity and identity centrality are both high, the negative relationship between T1
stressor acceptance and T2 perceived stressor intensity will be stronger, compared to when T1 perceived stressor intensity is high and student identity centrality is low.

b) When T1 perceived stressor intensity is low, T1 stressor acceptance will have no significant relationship to T2 perceived stressor intensity irrespective of T1 identity centrality.

Method

Participants and design

The present research was a two-wave repeated-measures online survey conducted among undergraduate psychology students commencing their studies. Time 1 (T1) data were collected during the students’ initial tutorials within the first week of university study. Time 2 (T2) data collection occurred six weeks later. By six weeks participants had experienced stressors intrinsic to their group of psychology students, specifically completion of one assessment task and exam preparation. The survey was intentionally conducted 1-week prior to mid-semester exams in order to capture responses during a heightened stressor period. At T1, 794 responded. Of these, 180 participants (22.67%) completed the T2 survey. Among these, 154 participants (19.40%) provided surveys with less than 5% missing data and were included in the final analyses (80% female; \( M_{age} = 19.60; SD_{age} = 5.05 \)).

Independent samples t-tests were conducted to explore whether there were differences between participants who completed only T1 and those who completed both T1 and T2 on our variables of interest. On all measures, there were no systematic differences on T1 perceived stressor intensity (\( p = .50 \)), T1 identity centrality (\( p = .80 \)), or T1 stressor acceptance (\( p = .26 \)).
Measures

*Psychology student identity centrality.* The centrality sub-scale of social identification (Cameron, 2004; Leach et al., 2008) was specifically employed to assess the psychological importance and chronic salience of the psychology student group membership. The three items from the centrality sub-scale (Leach et al., 2008) were used to measure identity centrality. Items were adapted for use with students and included: “I often think about the fact that I am a psychology student”, “The fact that I am a psychology student is an important part of my identity”, “Being a psychology student is an important part of how I see myself”). Participants responded on a seven-point scale 1 (*strongly disagree*) to 7 (*strongly agree*). The scale demonstrated internal reliability at both time points ($\alpha_{T1}=.90$, $\alpha_{T2}=.86$).

*Stressor acceptance.* The 3-item scale used by Britt et al. (2016) was modified and adapted for use with psychology students for this study. Stressor acceptance has been demonstrated to be conceptually distinct from other measures of coping strategies (Britt et al. 2016). The items were: “I accept the reality of studying psychology”; “I accept the way things are in psychology”; and “I focus on my goal of completing my degree”. Participants responded on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal reliability was satisfactory at T1 ($\alpha_{T1}=.79$), but low at T2 ($\alpha_{T2}=.46$).

*Perceived stressor intensity.* Perceived stressor intensity was measured using three items adapted from Iyer, Jetten, Tsivrikos, Postmes, and Haslam’s (2009) scale assessing concern about anticipated academic stressors. This measure attempts to capture the degree to which situational demands are perceived to overwhelm the coping system. This measure has a demonstrated relationship to poor mental health outcomes and lower self-esteem in the population of interest (Iyer et al., 2009). Items were: “I worry that I will not be able to keep up with the work”, “I am anxious about how well I will cope with study”, and “I am concerned that other students will know much more than me”. Participants indicated their
responses on a scale from 1 (strongly disagree) to 5 (strongly agree). The scale demonstrated internal reliability at both time points ($\alpha_{T1}=.83$, $\alpha_{T2}=.78$).

**Analysis strategy**

Missing data was negligible with only 4 missing data points (<.001%). Little’s MCAR test demonstrated that the missingness was completely at random ($\chi^2(116) =126.99$, $p=.23$). Missing values were replaced with maximum likelihood (ML) estimation using the expectation-maximization algorithm (Enders, 2001). Two univariate outliers demonstrating extreme values for T1 acceptance ($z$ score >3) were removed. A hierarchical linear regression was used in the prediction of T2 perceived stressor intensity. The corresponding predictors from both time points were included in the model to control for their effects. Step 1 included the control variables: sex, age, T2 stressor acceptance, and T2 identity centrality. Step 2 included the main effects of the focal predictors: T1 identity centrality, T1 stressor acceptance, and T1 perceived stressor intensity. Step 3 included all the two-way interactions between focal predictors, and Step 4 included the predicted three-way interaction between: T1 identity centrality, T1 stressor acceptance, and T1 perceived stressor intensity. Interaction terms were calculated from the product of the relevant mean-centered variables. The simple slopes (+/- 1 SD above and below the mean) were explored using the PROCESS Macro, Model 3 (Hayes, 2012).

**Results**

Table 1 presents the descriptive statistics and correlations for our measured variables. Psychology student identity centrality at T1 and T2 were positively related, as was T1 and T2 perceived stressor intensity. Older age was associated with lower perceived stressor intensity at both time points. Moreover, being male was associated with lower perceived stressor intensity at both time points. There was also a positive relationship between T1 psychology

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student identity centrality and T1 and T2 stressor acceptance. Given that at T1, the students were at the commencement of their psychology studies, we examined the response distributions for all measures, but were particularly concerned about floor effects for centrality. Both T1 and T2 centrality were normally distributed and the complete range of the scale (1-5) was used indicating no evidence of floor effects.

[TABLE 1]

T2 analysis of perceived stressor intensity

Results of the hierarchical linear regression are presented in Table 2. Model change statistics indicated that the three-way interaction included in Step 4 contributed significantly to explaining the variance in T2 perceived stressor intensity ($F\Delta(1,140)=6.01, p=.02$). There were significant direct effects for age ($t=-3.24, p=.01; \beta=-.20; spr^2=.03; 95\% CI [-.05,-.01]$) and T1 perceived stressor intensity ($t=9.39, p<.01; \beta=.63; spr^2=.30; 95\% CI [.42, .65]$). There were no significant direct effects for either T1 identity centrality or T1 stressor acceptance. The predicted (H1) three-way interaction between T1 perceived stressor intensity, T1 stressor acceptance, and T1 identity centrality was significant ($t=-2.45, p=.02; \beta=-.16; spr^2=.02; 95\% CI [-.41,-.04]$). The interaction is presented graphically in Figure 1 (standard errors appear in all Figures).

[TABLE 2]

As illustrated in Figure 1, when T1 perceived stressor intensity and T1 identity centrality were both high, T1 stressor acceptance was beneficial, showing a significant negative relationship with T2 perceived stressor intensity ($B=-.36, p=.05; 95\% CI [-.71,-.01]$). In contrast, when T1 perceived stressor intensity was high, but T1 identity centrality was low, the relationship between T1 stressor acceptance and T2 perceived stressor intensity was not statistically significant ($p=.22$). Likewise, when T1 perceived stressor intensity was
low (-1 SD), there was no statistically significant relationship between T1 stressor acceptance and T2 perceived stressor intensity irrespective of T1 identity centrality (high $p=.20$; low $p=.82$). These results support H1.

[FIGURE 1]

Discussion

The hypothesized three-way interaction was generally supported. The findings from Study 1 demonstrated that under conditions of initially high perceived stressor intensity when we might expect a greater risk to wellbeing, T1 stressor acceptance predicted a decline in T2 perceived stressor intensity, but only when T1 social identity centrality was high. These students initially perceived that the university course would be highly demanding and had concerns about their resources to cope with the demands; however, if they reported that being a psychology student was highly central to their identity they were able to use stressor acceptance more effectively becoming more confident in their ability to meet study demands.

In H1, we suggested that stressor acceptance would continue to predict lower perceived stressor intensity when identity centrality was low, but that this relationship would be attenuated. However, interestingly, acceptance was not related to lower perceived stressor intensity when identity centrality was low. This was somewhat surprising and was considered to possibly relate to the way stressor intensity was measured. The measure of perceived stressor intensity combines the experience of worry and anxiety with perceptions of stressor magnitude to get a sense of an individual’s perception that stressor demands would overwhelm the coping system (Jose & Ratcliffe, 2004). In this way, the measure reflects the individual’s interpretation of the stressors as overwhelming coping resources and therefore may reflect dispositions that are stable over time (e.g., low general self-efficacy). The dispositional nature of this measure may have limited our capacity to detect weaker
relationships. Moreover, the measure may also be limited in construct validity by capturing anxiety-related cognitions or maladaptive thinking related to personality styles like impostorism. In Study 2, stressor frequency was therefore used to capture the level of demand faced by an individual. Although, stressor frequency is not a direct measure of stressor intensity it does address the two above issues by separating the occurrence of events from the appraisal of those events or related dispositions. The intention of measuring stressors in these studies is to capture the level of demand faced by the individual given that the potential for psychological distress is understood to increase with increasing demands (e.g., Bakker, Demerouti & Verbeke, 2004; Crawford, LePine, & Rich, 2010; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and stressor frequency is a commonly used measure of level of demand (e.g., Jose & Ratcliffe, 2004). A second limitation, was the unsatisfactory reliability of the stressor acceptance measure at T2. This measure was modified slightly in Study 2 in order to improve reliability. A further limitation to the generalization of results is the examination of a student sample over a comparatively short (six week) time frame. In Study 2, we explored the robustness of these effects in an occupational group of Australian veterinarians over a 12-month period.

**Study 2**

Study 2 was a two-wave repeated-measures study conducted in a sample of currently employed veterinarians. Exploring whether acceptance of job-related stressors is an effective coping strategy is particularly relevant to veterinarians, given that compared to the general population, veterinarians are more likely to experience mood disorders and to commit suicide (e.g., Blair & Hayes, 1982; Jones-Fairnie, Ferroni, Silburn, & Lawrence, 2008; Mellanby, 2005; Miller & Beaumont, 1995; Platt, Hawton, Simkin, & Mellanby, 2012). Possible reasons for this include several sources of occupational stress (e.g., loss of interest, poor
remuneration, and a lack of career opportunities; Bartram & Baldwin, 2008; Michie & Williams, 2003).

Study 2 assessed the frequency that participants encountered occupational stressors. The two dimensions of burnout (i.e., exhaustion and disengagement) were used as measures of occupationally-related psychological distress (Demerouti & Nachreiner, 1996; Halbesleben & Demerouti, 2005). As noted previously, psychological distress symptoms, such as burnout, are unlikely to emerge when stressors are at a low frequency. Thus, stressor acceptance and identity centrality are only anticipated to reduce burnout when stressor frequency is high. Formally we predicted:

H2: T1 stressor frequency, T1 stressor acceptance, and T1 identity centrality will predict T2 burnout dimensions in a three-way interaction. The nature of the interaction will be such that:

a) When T1 stressor frequency is high, the negative relationship between T1 stressor acceptance and the T2 burnout dimensions will be strongest when T1 identity centrality is also high. The negative relationship between T1 stressor acceptance and T2 burnout dimensions will be attenuated when T1 identity centrality is low.

b) When T1 perceived stressor frequency is low, T1 stressor acceptance will have no relationship to T2 burnout symptoms irrespective of T1 identity centrality.

Methods

Participants and design

The data for Study 2 were obtained from Times 2 and 3 of a 3-wave longitudinal study broadly examining mental health and burnout in the veterinary profession. The initial data collection occurred between May-June 2014, with the second and third waves collected 12 and 24 months later. Recruitment of veterinarians across Australia occurred via the
Australian Veterinary Association’s e-journal and was promoted by the various state Veterinary Practitioners Boards. There were 462 respondents to the initial survey, and of these 333 (72.10%) agreed to be followed up 12 months later. However, only 194 (58.26%) commenced the second survey, with 161 (82.99%) providing usable data and indicated that they would be willing to be followed up again 12 months later. At the final survey, 143 (88.82%) participated. In this analysis, we use the second and third time points of data (referred to hereon in as T1 and T2) because the focal variables for this research were measured at these time points. After deleting those with substantial missing data, the final sample consisted of 92 participants, reflecting a retention rate of 20% from the initial survey respondents, but 64% of the second survey.

Participants were 64% females and 36% males, aged between 26-68 years old ($M = 46.13$, $SD = 10.88$). These veterinarians had practiced for a range of 2 to 43 years ($M = 21.45$, $SD = 11.49$). They worked in a range of practices including small animals (59.78%, $n = 55$), large animals (4.30%, $n = 4$), exotic species and wildlife (7.60%, $n = 7$), mixed practice (13.00%, $n = 12$), specialist (e.g., cardiology 8.70%, $n = 8$ and equine 12.00%, $n = 11$), research and laboratory (2.2%, $n = 2$) and 10.90% ($n = 10$) who felt their job-role also contained elements not captured in the designated categories (e.g., teaching, government).

Independent samples $t$-tests were conducted to explore whether there were differences between participants who completed only T1 and those who completed both T1 and T2. There were no systematic differences on any of the T1 measured variables: T1 Stressor frequency ($p = .17$), T1 identity centrality ($p = .42$), T1 disengagement ($p = .56$), T1 exhaustion ($p = .89$), and T1 stressor acceptance ($p = .90$).
**Measures**

**Burnout.** Burnout was measured at both time points using the Oldenburg Burnout Inventory (OLBI; Halbesleben & Demerouti, 2005). The OLBI is a 16-item measure of burnout designed to assess burnout based on two dimensions: (1) exhaustion, consisting of eight items (e.g., “There are days when I feel tired before I arrive at work”, “After work, I tend to need more time than in the past in order to relax and feel better”) and (2) disengagement, also eight items (e.g., “I feel more and more engaged in my work” (R), “When I work, I usually feel energized” (R)). Participants were asked to indicate whether these statements applied to them in the past month on a five-point, Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate a higher level of burnout. Internal reliability for both dimensions at both time points was satisfactory: exhaustion ($\alpha_{T1}=.83$, $\alpha_{T2}=.82$) and disengagement ($\alpha_{T1}=.77$, $\alpha_{T2}=.81$).

**Stressor frequency.** Stressor frequency was measured via the frequency of stressors encountered over the previous 12 months. The stressor list was derived from focus groups conducted in 2014 prior to the commencement of T1 (reference omitted for review). The list includes six key stressors related to veterinary practice (e.g., “How often do you have to perform euthanasia?”, “How often do you interact with human clients who expect too much from you?”). Participants were asked to indicate how often they experienced each of these potential stressor events on a five-point scale from 1 (never) to 5 (always). The scale internal reliability was satisfactory at both time points ($\alpha_{T1}=.86$, $\alpha_{T2}=.70$).

**Veterinarian identity centrality.** The identity centrality measure used in Study 1 was modified to refer to the veterinary profession (e.g., “I often think about the fact that I am a veterinarian”, “The fact that I am a veterinarian is an important part of my identity”, and “Being a veterinarian is an important part of how I see myself”). Participants responded on a
seven-point scale 1 (strongly disagree) to 7 (strongly agree). Internal reliability was satisfactory (α_{T1}=.81, α_{T2}=.84).

**Stressor acceptance.** The stressor acceptance measure used in Study 1 was modified in two ways: (1) to refer to the profession (veterinary) and (2) the third item previously describing a focus on goals was changed to measure stressor acceptance more directly (“I try to accept the realities of the job”, “I just learnt to live with the stressors in my profession”, “I accept that these stressors are just part of the job”). Participants were asked to indicate their use of such strategies in the previous month on a scale from 1 (did not do this at all) to 4 (did this a lot). The internal reliability was satisfactory at both time points (α_{T1}=.70, α_{T2}=.95).

**Analysis strategy**

Little’s MCAR test revealed that data were missing completely at random (χ²(383) =368.33, p=.70). Of the data used in this study, there were only 9 missing data points (0.01%). Maximum likelihood (ML) estimation using the expectation-maximization algorithm (Enders, 2001) was used to replace missing data points for scale items.

Two hierarchical linear regressions were used in the prediction of the burnout dimensions: T2 disengagement and T2 exhaustion. Two univariate outliers were removed demonstrating high z-scores (>3) for T2 exhaustion. As before, the corresponding predictors from both time points were included in the model to control for their effects. In both models, we also controlled for the T2 version of the predictor variables to ensure that covariation between the predictor variables at T2 and the T2 burnout dimension were accounted for. Control variables were entered into Step 1: T1 burnout dimension predicted, T2 stressor acceptance, T2 stressor frequency, T2 identity centrality, age, and sex. Step 2 included the direct effects for the focal predictors; i.e., T1 stressor frequency, T1 stressor acceptance, and T1 identity centrality. The two-way interactions between the T1 focal predictors were
included in Step 3. Finally, in Step 4 the three-way interaction between T1 stressor frequency, T1 stressor acceptance, and T1 identity centrality was included. All predictor variables and control variables included in the analyses were centered. The interactions were decomposed using the PROCESS Macro, Model 3 (Hayes, 2012).

Results

Preliminary analysis

Table 3 presents the descriptive statistics and correlations for all variables. Males tended to report marginally lower stressors and lower identity centrality at T2 than their female colleagues. There were significant correlations between age and T1 stressor acceptance, T2 exhaustion, and T2 disengagement. As would be expected, greater stressor frequency was related to increased burnout symptoms across both time points. There were moderately strong cross time relationships for disengagement and exhaustion ($r=.62$ and $r=.53$) and both were related to each other cross-sectionally and over time.

[TABLE 3]

Analysis of T2 disengagement

A hierarchical linear regression, as described above, was used in the prediction of T2 disengagement. One multivariate outlier was removed due to unusually elevated Cook’s and leverage values (>1). As reported in Table 4, Step 4 explained a significantly greater amount of variance in T2 disengagement as compared to the more parsimonious models ($\Delta R^2 = .03$; $\Delta F (1,77) =5.26, p=.02$). In Step 4, T1 disengagement and T2 stressors ($t= 4.47, p < .01$; $\beta=.48$; $spr^2= .12$; 95% CI [.24,.62] and $t= 2.19, p =.03$; $\beta=.26$; $spr^2=.03$; 95% CI [.01,.11], respectively) were significantly related to T2 disengagement. The predicted two-way interactions were not significant. However, there was a significant three-way interaction between T1 stressor frequency, T1 stressor acceptance, and T1 identity centrality ($t= -2.29,$

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An examination of simple slopes was conducted using the PROCESS Macro Model 3 (Hayes, 2012). When T1 stressor frequency was low (Figure 2a), T1 stressor acceptance was not related to T2 disengagement regardless of identity centrality. However, when T1 stressor frequency and identity centrality were both high (Figure 2b), T1 acceptance was associated with lower T2 disengagement ($B = -.48$, $p = .02$; 95% CI [-0.87, -0.09]). In contrast, when T1 identity centrality was low, there was no significant relationship between T1 acceptance and T2 disengagement ($p = .58$).
also a marginally significant two-way interaction between T1 stressor frequency and T1 stressor acceptance ($t=-1.99$, $p=.05$; $\beta=-.17$; $spr^2=.02$; 95% CI [-.13, >.01]). This two-way interaction was further qualified by the predicted three-way interaction (H2) between T1 stressor frequency, T1 stressor acceptance, and T1 identity centrality ($t=-2.22$, $p=.03$; $\beta=-.19$; $spr^2=.03$; 95% CI [-.13, -.01]). The three-way interaction is illustrated in Figure 3.

**[FIGURE 3]**

An examination of simple slopes indicated that when both T1 stressor frequency and identity centrality were high, there was a predicted negative relationship between T1 stressor acceptance and T2 exhaustion ($B=-.54$, $p=.01$; 95% CI [-0.94,-0.13]). Thus, exhaustion declined as acceptance increased. All other slopes were not statistically significant.

**Discussion**

The hypothesized three-way interaction (H2) was supported across both burnout dimensions. Stressor acceptance was effective in reducing burnout symptoms over 12 months when the stressor frequency and identity centrality were both high. The results highlight that in a professional sample of veterinarians, professional (veterinarian) identity centrality enabled stressor acceptance to reduce burnout symptoms when occupational stressors were high. As anticipated, under conditions of relatively lower occupational stressors, there was no relationship between acceptance and subsequent burnout.

When comparing Figures 2 and 3, the role of identity centrality in enabling the effectiveness of stressor acceptance when stressor frequency was high, was most evident for the disengagement burnout dimension. For disengagement, stressor acceptance was only effective when identity centrality was high. The differences in the clarity of these patterns may reflect the way the different burnout dimensions relate to identity processes. Given that, disengagement is a coping strategy that embodies increasing psychological distance from the
workplace (Halbesleben & Demerouti, 2005), identity centrality is perhaps more likely to enhance the negative relationship between acceptance and disengagement. However, for the purposes of our analysis, the principal finding is the replication of the significant effect of identity centrality in moderating the relationship between stressor acceptance and burnout in the context of relatively high stressor frequency. Specifically, stressor acceptance was most beneficial among participants with higher identity centrality. This finding across a twelve-month period for a professional sample that is exposed to stressful working conditions lends confidence to the robustness of the findings.

**General discussion**

We initially suggested that when people say ‘it’s all just part of a day’s work’ that perhaps they are saying something important about what makes them resilient to the stressors consistent with their social group membership. We proposed that stressor acceptance is most effective in supporting wellbeing when it occurs in the context of important and salient group memberships. In fact, the findings generally suggested that stressor acceptance may only be effective at buffering distress from group-based stressors when identity centrality is high. In Study 1, support for the predicted three-way interaction was found. Stressor acceptance amongst first year psychology students was only related to a reduction in T2 perceived stressor intensity when both T1 stressor intensity and T1 identity centrality were high, but not when T1 identity centrality was low. Interestingly, in Study 1, identity centrality moderated the effectiveness of stressor acceptance even when the outcome measure (i.e., perceived capacity to cope with stressors) is likely to be related to relatively stable dispositional factors not measured in this study (e.g., maladaptive belief systems). Thus, the combination of the use of cognitive stressor acceptance and high identity centrality may even enhance the confidence of those individuals who initially perceive their coping capacities as low.

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The predicted three-way interaction was replicated in a group of working professionals (veterinarians; Study 2). It was only when both T1 stressor frequency and identity centrality were high that T1 stressor acceptance was related to reduced symptoms of burnout at T2. These findings are important because they suggest that social identities, in particular the degree to which social identities are representative of, and internalized, as part of the self-concept, may be able to improve the effectiveness of cognitive coping approaches. The study thus contributes to a growing body of research highlighting the importance of social identities for physical and mental health (e.g., Cruwys et al., 2013; 2014; Greenaway et al., 2016; Hopkins & Reicher, 2017).

**Theoretical implications: Why does identity centrality make stressor acceptance effective?**

The present findings support the suggestion that identity centrality facilitates the efficacy of an adaptive cognitive response to stressor events, through cognitive acceptance of stressors. We proposed that identity centrality facilitates stressor acceptance via the connections that form between the group membership and the stressors that are characteristic of the group. This occurs similarly to the way certain behaviors or values are viewed as group-defining (Turner et al., 1987). We argue that stressors can be considered meaningful to the identity of the group and the acceptance of their existence is internalized as part of what it means to be a group member. This connection between the stressor events and the group-relevant opportunities or objectives therefore encourage the willingness to accept these events.

In light of the present findings, an important area of future theoretical work and research is to generate a better understanding of the meaning that group memberships may give to stressors. When stressful events occur as part of membership in an important social
group, these events may be interpreted as having meaning, perhaps in the service of a group goal. Accumulating research is demonstrating the importance of meaning-making efforts to cope with stressor events and adversity in one’s life (for reviews see: Lightsey, 2006; Park & George, 2013). Across studies, meaning-making occurs in a variety of ways. The meaning-making that an individual may derive from social groups may best be captured in what is referred to as global meaning (Park & Folkman, 1997). Global meaning involves a combination of order (i.e., beliefs about the world, one’s self and the relationship between the world and the self) and purpose (i.e., beliefs that organize, motivate and orientate goal striving). Group membership may provide a salient context for meaning to be derived from stressor events and possibly even potentially traumatic events.

An example of the way a group membership may provide meaning to suffering is religion. Religion is considered to provide a framework for understanding one’s life experiences and the suffering that may occur in it (Wuthnow, Christiano, & Kuzlowski, 1980; for review see: Ysseldyk, Matheson, & Anisman, 2010). Previous work has demonstrated that religious high identifiers tend to use less avoidant coping (Ysseldyk, Matheson, & Anisman, 2009). Beyond religion, we argue that the norms, values, and beliefs of other groups can imbue meaning in stressors associated with those group memberships. For example, stressors associated with a professional group (e.g., animal euthanasia in the case of veterinarians) may be viewed as a necessary part of achieving an important professional goal (e.g., easing suffering). In this way, the stressor has an important purpose and is thus meaningful. When stressors have meaning and relevance to an important social identity, and thereby the goals and values of that identity, there may be willingness among individuals to accept stressors as part of a broader purpose.

Conversely, it is important to reflect upon situations in which stressors could be inconsistent with professional values or beliefs. Bureaucracy, or other workplace stressors
that are considered to hinder goals and lack meaning are good examples of such stressors (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). The work of Levine and Reicher (1996) reflects this point. These researchers demonstrated that perceived injury severity was higher if the injury threatened a salient professional identity. For stressors that threaten group-based goals or are inconsistent with group values, future research could directly test if attempts at acceptance may be the least effective for highly identifying group members and therefore hinder their wellbeing. Thus, in certain circumstances, high levels of identity centrality may impair the function of acceptance.

**Applied implications**

The present research has demonstrated that the function of stressor acceptance is enhanced by identity centrality. In contrast, the present research demonstrated that if acceptance of a group-based stressor was attempted in the absence of an important and salient identity related to the stressor, acceptance is likely to be ineffective. As is known, social identities may play a positive role in coping by promoting control (Greenaway et al., 2015) and by facilitating social support (Cruwys et al., 2014; Haslam et al., 2005; Walsh, Muldoon, Gallagher, & Fortune, 2015). In terms of the resilience literature, the present research contributes to our understanding of a critical and understudied coping strategy. Several authors describe the importance of flexible coping for resilience (e.g., Bonanno, Pat-Horenczyk, & Noll, 2011). Coping flexibility involves the flexible use of adaptive coping strategies that are appropriate for the stressor context. However, the flexible use of strategies depends in part on the individual’s coping repertoire. Research by Britt et al., (2016) highlights the importance of acceptance coping particularly in low control settings. In their work, acceptance was a more adaptive coping strategy, than problem-solving or support seeking, in a low control and low autonomy occupational context. This research helps to
build our understanding of a coping strategy that is essential for adapting resiliently to uncontrollable stressors.

In the workplace setting, highlighting important professional identities, and the relevance of stressors that occur in the context of these identities, may help employees accept and respond effectively to workplace stressors (Steffens, Haslam, Kerschreiter, Schuh, & van Dick, 2014). Managers in particular play an important role in framing stressor events in the workplace (omitted for review). Leaders of people may not only be able to develop a cohesive shared sense of ‘us’ by crafting their social identity (Steffens et al., 2014), but also ensure that incoming stressors are given meaning by framing those events in the context of the broader group-identity and related goals. This underscores an important role and responsibility for managers in facilitating resilience and occupational wellbeing.

Therapeutic interventions for assisting people to accept stressors may find benefit in the use of salient social identities as a way of enhancing the effectiveness of adaptive coping strategies during times of high stressor demand. For practitioners of Acceptance Commitment Therapy (ACT), perhaps the clearest implications are for clients who present with concerns about uncontrollable work-based stressors. Through the therapeutic conversation these stressors may be aligned with an important professional identity in order to facilitate the conditions for stressor acceptance. A second possible implication relates to the practitioners themselves and their approach to therapy. Hayes et al., (1999) identifies that harmful moments in treatment can happen if the therapist is describing acceptance, but is not able to accept themselves. Clients can present with challenging stressors that can cause fright or concern in therapists. Modelling non-acceptance can occur in a diverse set of ways according to Hayes et al., (1999) whereby the ACT therapist can selectively reinforce certain behaviours or thoughts that are socially desirable or choose language that is judgmental. ACT practitioners may benefit from aligning the reality of difficult client content with the
professional identity as a psychologist in order to enhance acceptance of challenging psychological and behavioural content from clients. This can be achieved through personal reflection or in the process of supervision and professional development.

Not all stressors are likely to lend themselves to the use of group-based identities. For stressors that are more individual in nature (e.g., health-related stressors), such approaches may not be likely to facilitate the enhanced functionality of stressor acceptance. Having noted this, as noted above we propose what group-memberships allow is a process of meaning making which could perhaps be otherwise achieved at an individual level. For example, meaning-orientated approaches have been used to support patients diagnosed with cancer (Lee, Cohen, Edgar, Laizner, & Gagnon, 2006).

Our work also has implications for harm-doing behavior within organizations such as bullying, unethical practice, or incivility. The enhanced effectiveness of group-based stressor acceptance when identity centrality is high, may account for why engaging in group harm-doing against others (e.g., bullying in the workplace) does not always lead to a decline in wellbeing, or why people may willfully expose themselves to stressors as part of a group membership (e.g., through hazing; Ferris, Jetten, Molenberghs, Bastian, & Karnadewi, 2016; Platow, et al., 2007). Indeed, previous work has suggested that the internalization and the autonomous endorsement of group norms in favor of harm-doing may buffer against a decline in wellbeing (Amiot, Sansfaçon, & Louis, 2013). Recent findings also suggest that higher organizational identification can also lead to unethical pro-organizational behavior (Chen, Chen, & Sheldon, 2016). Internalized acceptance of such harm or wrong-doing behaviours may mean that the experience of discomfort, typically accompanied by harm-doing, no longer occurs, and may even mean that the harm-doing is associated with more wellbeing. Thus, when harm-doing such as bullying or unethical behavior becomes synonymous with
the group identity, identity centrality may enhance the effectiveness of stressor acceptance in moderating the negative psychological impacts of harm-doing.

**Limitations and future research**

A limitation of the current research is the use of self-report for all measures. Reliance on self-report means that respondent characteristics may be present and contribute to the moderating relationships found in the study. Future research could seek to use alternative measures, such as physiological markers of stress, in an experimental setting where identity salience is manipulated in the presence of group-related stressors. A further potential limitation was the sample size of both studies. A post hoc power analysis was performed using the G*Power program (Erdfelder, Faul, & Buchner, 1996). The focal three-way interaction generated small effect sizes in each case ($f^2=.02$, Study 1; $f^2=.03$, Study 2). Statistical power to detect the interaction in Step 4 was therefore low across both studies (.16, Study 1; .12, Study 2). Although the significant interactions mean by definition Type II error was not present, and the pattern of interaction effects was generally consistent in both studies, the power analysis suggests that larger samples sizes would be advisable in future research ($Ns > 850, 607$). Future research could also give consideration to other factors that may impact both acceptance and wellbeing outcomes. For example, Hayes et al., (1999) suggest that the willingness to accept may, in part, be trait-like. Certain personality dimensions also account for one’s capacity to use acceptance effectively. System-related factors could also be considered such as perceived organizational support or the approach to leadership. Moreover, the nature of the work (e.g., service climate) may influence the level of acceptance. The exclusion of such variables may account for why the model explained very little variance in the outcome measures. Having noted this, the intention of these studies was to explore the capacity of identity centrality to enhance the function of acceptance, rather than provide an overarching model of occupational wellbeing. To this end, we have met our objective, but

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there would be value in future research that examines other additional factors that influence the acceptance process.

Although the present research confirmed the role of identity centrality in effective stressor acceptance, the mechanisms explaining why identity centrality enhances the positive function of acceptance requires further exploration. We describe several possibilities including the role of group identities in imbuing meaning in stressors and enabling the acceptance of certain stressors to become internalized. However, this is an area for future research. A further area of research is in defining the relationship between identity centrality and the stressor. In this research, we have not examined the extent to which the stressor needs to be consistent with the group goals or values, this has only been implied based on previous research. For example, for a professional group like veterinarians, the difference between compassionate versus convenience euthanasia may be a good example of this distinction. Compassionate euthanasia involves easing animal suffering, whereas convenience euthanasia involves a pet owner requesting animal euthanasia for lifestyle or other reasons related to convenience (e.g., travel). Both forms of euthanasia are stressful events related to the veterinarian profession, but convenience euthanasia could be considered inconsistent or misaligned with professional values. A question for future research is therefore whether the alignment between stressors and group-based values is important to allow identification to strengthen acceptance as a positive coping strategy, or whether it is sufficient for stressors to be viewed as ubiquitous with group membership and something all group members face.

**Conclusion**

In these studies, we sought to investigate the role of identity centrality in enhancing the effectiveness of acceptance of stressors as a way of reducing psychological distress. Results suggest that cognitive acceptance of group-based stressors is principally effective in
reducing psychological distress when stress occurs in the context of a shared sense of us (a shared social identity). These findings have implications for assisting people to accept external stressors in a way that enhances their wellbeing. More broadly, the results contribute to a growing body of work on social identity and resilience, and allow us to understand how the social self is constructed in difficult, stressful circumstances in a way that protects group members’ ongoing motivation for group functioning and wellbeing.

References


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during cognitive behavioral stress management intervention and distress outcomes in symptomatic human immunodeficiency virus (HIV)-seropositive gay men. *Psychosomatic medicine, 60*, 204-214. ISSN: 0033-3174


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Table 1. Correlations and descriptive statistics (Study 1)

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**p<.01; *p<.05
Table 2. Hierarchical linear regression analysis predicting T2 perceived stressor intensity (Study 1)

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**p<.01; *p<.05
Table 3. Correlations and descriptive statistics (Study 2)

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*p<.01; *p<.05; †p<.07
Table 4. Hierarchical linear regression analysis predicting T2 disengagement (Study 2)

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Table 5. Hierarchical linear regression analysis predicting T2 exhaustion (Study 2)

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**p<.01; *p<.05; †p<.06

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Figure 1. Three-way interaction between T1 stressor acceptance, T1 identity centrality, and T1 perceived stressor intensity in the prediction of T2 perceived stressor intensity. High and low are values +/- 1SD above and below the mean. Error bars are 1 SE (Study 1).

Figure 2. Study 2: Three-way interaction between T1 stressor acceptance, T1 identity centrality, and T1 group-based stressors in the prediction of T2 disengagement. High and low are values +/-1SD above and below the mean. Error bars are 1 SE (Study 2).

Figure 3. Three-way interaction between T1 stressor acceptance, T1 identity centrality, and T1 group-based stressors in the prediction of T2 exhaustion. High and low are values +/-1SD above and below the mean. Error bars are 1 SE (Study 2).
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