

INDIVIDUAL DIFFERENCES IN ATTACHMENT ORIENTATION, SOCIAL GOAL
ORIENTATION, AND MEANING IN LIFE

By

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THESIS ABSTRACT

Individual Differences in Attachment Orientation, Social Goals, and Meaning in Life

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Previous research suggests that individuals with insecure attachment orientations experience deficits in meaning in life. The current research investigates whether an individual's relationship goal orientation can help to explain the relation between attachment insecurity and meaning in life. I hypothesized three indirect pathways. The first two pathways link attachment-related anxiety to lower presence of meaning, but higher search for meaning via greater deficit reduction goals. The third pathway links attachment-related avoidance to lower presence of meaning via reduced growth-oriented goals. The pathways were tested non-experimentally (Studies 1 and 2) by measuring trait attachment orientations, two types of social goals (growth-oriented and deficit-reduction), and two dimensions of meaning in life (presence of meaning and search for meaning), and experimentally (Study 2) by manipulating attachment and measuring the two types of social goals, and the two dimensions of meaning in life. There was consistent non-experimental support that attachment-related anxiety is associated with greater search for meaning indirectly via more commitment to deficit reduction goals. Additionally, there was consistent non-experimental support that attachment-related avoidance is associated with lower presence of meaning via less commitment to growth-oriented social goals.

However, there was not strong support for the pathway linking attachment-related anxiety to presence of meaning via deficit reduction goals. Moreover, there was no experimental support for the three hypothesized pathways. Thus, this research can only provide preliminary evidence that social goals may explain the link between insecure attachment and deficits in meaning in life.

Individual Differences in Attachment Orientation, Social Goal Orientation, and Meaning in Life

Meaning in life, defined as a sense that one's life is significant, purposeful, and coherent, is a fundamental psychological need (Abeyta & Routledge, 2018; Steger & Frazier, 2005). People are driven to discover and maintain a sense of personal meaning (Frankl, 1959; Heintzelman & King, 2014; Van Tongeren, DeWall, Green, Cairo, Davis, & Hook, 2018). Research indicates that perceptions of meaning in life are linked to psychological health and well-being (Zika & Chamberlain, 1987) as well as physical health (Hooker, Masters, & Park, 2017). Because of the benefits that a sense of meaning in life provides, it is important to investigate potential sources of meaning. For example, research indicates that people derive meaning in life from religion and culture (Newton & McIntosh, 2013), positive affective experiences (King, Hicks, Krull, & Del Gaiso, 2006), and overcoming personal challenges (Frankl, 1985; Machell, Kashdan, Short, & Nezlek, 2015), to name a few. However, one particularly robust source of meaning in life are social relationships (Hicks & King, 2009; King, Heintzelman, & Ward, 2016; Nelson, Abeyta, & Routledge, 2019). For one, research indicates that social relationships are an important component of what makes religion meaningful (Chan, Michalak, Ybarra, 2018; Ladd & McIntosh, 2008). Additionally, people rely less on positive emotional experiences to inform their sense of meaning in life when their social belonging needs have been met (Hicks & King, 2009), and evidence suggests that social relationships are the most frequently discussed domain when people are asked what makes their life meaningful (Nelson, Abeyta, & Routledge, 2019). Moreover, when people feel excluded

or that they do not belong, meaning in life is actually decreased as a result (Stillman et al., 2009).

There are a number of ways social relationships support perceptions of meaning in life. When engaging in relationships, people may get the sense that they become a part of something larger and more transcendent (Aron, Aron, & Norman, 2001). Additionally, the simple act of being loved or cared for by someone else contributes to a sense of personal importance (Leary & Baumeister, 2000). Interpersonal relationships also promote meaning in life through providing a sense of purpose. Close relationship partners often encourage each other to set and achieve goals (Feeney & Collins, 2015), and the pursuit of personally important goals contributes to a sense of purpose or meaning in life (Emmons, 2005; McGregor & Little, 1998). An important aspect of meaning in life is having a coherent sense of the self in relation to the outside world (Heine, Proulx, & Vohs, 2006), and close relationships provide people with a sense of coherence by promoting depth and diversity of the self-concept (Aron, Paris, & Aron, 1995), as well as by clarifying their place in social groups and society in general (Dekovic & Meeus, 1997). Finally, relationships provide a sense of psychological security that helps people to maintain perceptions of meaning in the context of threat. According to attachment theory (Bowlby, 1907-1990; Bretherton, 1985), interpersonal relationships, initially in the form of primary caregivers in childhood and then in the form of romantic partners in adulthood, provide a foundation of psychological security (Hazan & Shaver, 1987). People can rely on relationships to provide support and security when going through tough times. Indeed, research indicates that threats to meaning motivate affiliation

(Maner et al., 2007), and that people with secure relationships are better able to adjust to existential threat (Vehling et al., 2019).

An important factor that can affect how successful a person is in their relationships, and potentially whether they can successfully rely on interpersonal relationships to provide and maintain meaning in life, is their attachment orientation. According to attachment theory, experiences in early childhood with a primary caregiver affect people's interpersonal lives in terms of how they relate to others and whether they rely on relationships for psychological security (Bretherton, 1985; Grossman & Grossman, 2005; McElwain, Booth-LaForce, & Wu, 2011). These foundational relationship experiences become internalized and form a mental schema, called an internal working model or attachment orientation, for how people think about their relationships, feel about their relationships, and behave in or function within their relationships. Having an available, responsive caregiver is thought to promote a secure attachment orientation. Individuals with a secure attachment orientation feel supported by others, view themselves as worthy of affection, and feel comfortable relying on close relationship partners in times of need, as well as when engaging in exploration behaviors.

In contrast, having a caregiver that is not consistently responsive or available to provide psychological support is thought to contribute to the development of an insecure attachment orientation. Insecure attachment orientations are conceptualized along two orthogonal dimensions: attachment-related avoidance and attachment-related anxiety (Brennan, Clark, & Shaver, 1998). Attachment-related anxiety is defined by feeling unworthy of love, worry about the lack of availability of their relationship partners, and the overwhelming desire for closeness and intimacy as a way to affirm worth (Collins &

Allard, 2001). Individuals high in attachment-related anxiety tend to engage in hyperactivation behaviors, such as seeking unrealistic closeness and constant concern for social acceptance and belonging. The avoidant attachment orientation is characterized by a lack of trust and a desire to seek distance within relationships. Individuals high in attachment-related avoidance are then likely to engage in detachment behaviors, such as avoiding disclosure and intimacy within their relationships (Bowlby, 1970; Hazan & Shaver, 1994).

Hazan and Shaver (1987) found that attachment orientations characterize relationships throughout the lifespan. Specifically, they found evidence that individuals high in attachment-related avoidance tended to have relationships characterized by fear of intimacy, jealousy, and a mixture of emotional highs and lows. In contrast, individuals high in attachment-related anxiety tended to have relationships characterized by obsession, jealousy, a mixture of emotional highs and lows, and a desire for reciprocation. Because attachment orientations are relatively stable over time (Fraley, Vicary, Brumbaugh, & Roisman, 2011), it is clear that anxious and avoidant attachment orientations can negatively affect people's relational outcomes. Specifically, individuals high in attachment-related avoidance and anxiety tend to report lower levels of relationship quality (Homan, 2018), less perceived closeness (Lee & Gillath, 2016), and deficits in well-being (Yen, 2014). Importantly, insecure attachment orientations may affect an individual's ability to derive a sense of meaning in life from their relationships. Research has found strong links between attachment orientations and meaning in life (Bodner, Bergman, & Cohen-Fridel, 2014; Lopez et al., 2015; Reizer, Dahan, & Shaver, 2013). Specifically, Bodner and colleagues (2014) found that fearful (i.e., individuals

high in attachment-related anxiety but low in avoidance) and preoccupied (i.e., individuals high in attachment-related anxiety and avoidance) attachment styles were related to greater search for meaning in life, but lower presence of meaning in life. Additionally, a dismissive attachment style (i.e., individuals low in attachment-related anxiety but high in avoidance) was related to less search for meaning and lower presence of meaning. Similarly, a study by Reizer, Dahan, and Shaver (2013) found these same general trends: attachment-related anxiety was associated with lower presence of meaning and greater search for meaning, and attachment-related avoidance was associated with lower presence of meaning in life.

Individual differences in attachment-related anxiety and avoidance shape interpersonal outcomes through goal pursuit. As discussed previously, attachment theory conceptualizes attachment orientations as stable dispositions for how people think about and approach interpersonal relationships. Attachment-related security involves the pursuit of interpersonal closeness without worry or fear of loss. In contrast, attachment-related avoidance is an action tendency that involves distancing oneself from others to avoid interpersonal closeness, whereas attachment-related anxiety is an action tendency that involves the pursuit of interpersonal closeness to avoid interpersonal loss. According to the hierarchical model of motivation (Elliot & Church, 1997), dispositional action tendencies, referred to as motivations, predict the adoption of distinct short-term goals. Research supporting the hierarchical model in the interpersonal domain provided evidence that individuals dispositionally high in the *hope for affiliation* were more likely to adopt short-term approach-oriented social goals, which are goals that generally focus on achieving positive social outcomes such as interpersonal closeness (Gable, 2006). In

contrast, the research provided evidence that individuals dispositionally high in a *fear of rejection* were more likely to adopt short-term avoidance-oriented social goals, which are goals that are generally focused on avoiding negative social outcomes such as preventing social conflict (Gable, 2006).

In general, research on attachment theory is consistent with the hierarchical model of motivation's (Elliot & Church, 1997; Gable, 2006) proposal that dispositional motivation tendencies shape unique goal orientations. For example, Lavigne, Vallerand, and Crevier-Braud (2011) modeled how attachment styles uniquely predict interpersonal goals. They found that a secure attachment style (low in attachment-related anxiety and avoidance) was predictive of a stronger commitment to growth-oriented goals, whereas a fearful-avoidant attachment style (high attachment-related anxiety and high attachment-related avoidance) was inversely associated with commitment to interpersonal growth goals. Further, they found that a preoccupied attachment style (low in attachment-related avoidance, but high in anxiety) was associated with greater commitment to social goals of reducing belonging deficits, whereas a dismissing-avoidant attachment style (low in attachment-related anxiety, but high in avoidance) was inversely associated with commitment to belonging deficit-reduction goals (Lavigne et al., 2011). Separate research has provided evidence that, consistent with their tendency to worry about interpersonal closeness and to feel unworthy of love, individuals high in attachment-related anxiety are likely to prioritize deficit-reduction social goals of avoiding or reducing loss/loneliness more than securely attached individuals (Dandurand, Bouaziz, & Lafontaine, 2013). Additionally, this research found that, consistent with their desire to avoid interpersonal closeness, individuals high in attachment-related avoidance are less

likely to adopt social goals related to interpersonal growth and intimacy compared to securely attached individuals (Dandurand et al., 2013).

Ultimately, the hierarchical model of motivation suggests that growth-oriented goals should lead to more psychologically adaptive outcomes, whereas deficit-reduction goals should lead to less desirable outcomes. In support of this, research indicates that adopting a growth goal orientation towards relationships tends to be associated with less loneliness and less social anxiety (Lavigne et al., 2011), as well as greater social relationship satisfaction (Elliot, Gable, and Mapes, 2006; Gable, 2006). On the other hand, the deficit-reduction goal orientation is associated with increased social anxiety (Lavigne et al., 2011), negative biases within social interactions (Nikitin & Freund, 2015; Strachman & Gable, 2006), and increased loneliness and relationship insecurity (Gable, 2006).

Thus, less adaptive goal orientations should help explain the association between attachment dimensions and relational outcomes. To the extent that interpersonal relationships are an important domain for meaning in life, this tendency to adopt less adaptive social goals should have implications for meaning. Specifically, goal orientations may help explain the aforementioned associations between individual differences in attachment-related avoidance and lower presence of meaning, and individual differences in attachment-related anxiety and lower presence of meaning and greater search for meaning, respectively (Reizer et al., 2013).

The purpose of this research was to test this potential across two studies. In Studies 1 and 2, I tested this potential non-experimentally by measuring participants' attachment orientations, commitment to interpersonal growth/deficit-reduction goals, and

perceptions of presence and search for meaning in life. In line with previous research findings on the relation between attachment orientations and meaning in life (e.g., Bodner et al., 2014; Reizer et al., 2013), I predicted that attachment-related anxiety would be associated with greater search for meaning in life and lower presence of meaning in life. Critically, I hypothesized that these relations would be mediated by greater commitment to deficit-reduction goals (See *Figures 1 and 2*). I also expected that attachment-related avoidance would be associated with lower presence of meaning in life. I hypothesized that this relation would be mediated by less commitment to growth-oriented goals (See *Figure 3*).

In Study 2 I also tested this potential experimentally, by randomly assigning participants to a secure attachment prime condition, an anxious attachment prime condition, or an avoidant attachment prime condition, and measuring commitment to interpersonal growth/deficit-reduction goals, and perceptions of presence and search for meaning in life. I hypothesized that individuals in the attachment anxiety prime condition would exhibit stronger commitment to deficit-reduction goals relative to participants in the secure prime condition, and in turn increased search for meaning in life and decreased presence of meaning in life, respectively. I also hypothesized that individuals in the attachment avoidance condition would exhibit decreases in growth-oriented goals relative to the secure condition, and in turn lower presence of meaning in life.

Finally, because I measured and manipulated attachment-related anxiety and avoidance in Study 2, I explored whether measured individual differences in attachment anxiety or avoidance moderated the effect of the attachment primes. Attachment theory suggests that attachment orientations are generally stable throughout the lifespan (e.g.,

Fraley et al., 2011) which could make it difficult for participants to overcome their trait attachment orientation and adopt the attachment orientation from the condition they are placed in. Instead of changing individuals' attachment orientation, I thought it possible that the attachment primes might strengthen existing trait differences in attachment-related avoidance and anxiety. Indeed, past research indicates that threats to relationships activate attachment-related schemas (e.g., Maner et al., 2007). The effect of the attachment primes may be similar to an interpersonal threat, since they involved having the participants take the perspective of a person receiving news that their relationship partner wanted to address changes to the level of intimacy in the relationship (i.e., "slow things down" or "get more serious"). Thus, the effect of the anxious attachment prime compared to the secure attachment prime may be strongest at high, compared to low, levels of attachment-related anxiety. Similarly, the effect of the avoidant attachment prime compared to the secure attachment prime may be strongest at high, compared to low, levels of attachment-related avoidance.

Study 1

Past research has either looked at the associations between individual differences in attachment anxiety and avoidance, and meaning in life (e.g., Reizer et al., 2013), or at the association between individuals' differences in attachment and social-goal orientations (e.g., Lavigne et al., 2011). The purpose of Study 1 was to assess these variables in a single study to test whether social goal orientations (i.e., a deficit reduction goal orientation, and a growth goal orientation) help explain the associations between individual differences in attachment-related anxiety and avoidance, and meaning in life. Based on this past research, I hypothesized three indirect pathways. First, past research

has evidenced that attachment-related anxiety is negatively associated with presence of meaning, but positively associated with search for meaning (e.g., Reizer et al., 2013). Separate research suggests that individuals high in attachment-related anxiety are more strongly committed to interpersonal goals aimed at deficit reduction compared to individuals lower in attachment-related anxiety, but that individuals high in attachment-related anxiety are not more or less committed to growth oriented interpersonal goals compared to less anxious individuals (Lavigne et al., 2011). Indirect Pathway 1 assessed the relationship between attachment-related anxiety and presence of meaning via commitment to deficit-reduction goals. Indirect Pathway 2 assessed the relationship between attachment-related anxiety and search for meaning via commitment to deficit-reduction goals. Similar to attachment-related anxiety, attachment-related avoidance has been found to be inversely associated with presence of meaning (Reizer et al., 2013). Separate research indicates that attachment-related avoidance is inversely associated with a growth orientation (Dandurand et al., 2013). Indirect Pathway 3 assessed the relationship between attachment-related avoidance and presence of meaning via commitment to growth goals. Unlike attachment-related anxiety, previous research has not found strong evidence of an association between attachment-related avoidance and search for meaning (Reizer et al., 2013). Therefore, there is no prediction of significance for an indirect pathway linking attachment-related avoidance to search for meaning in life. Finally, past research indicates that attachment-related avoidance is not significantly associated with deficit-reduction goals (Dandurand et al., 2013). Therefore, I did not hypothesize attachment avoidance pathways with deficit reduction serving as a mediator.

Method

Participants

A total of 433 participants from a convenience sample of undergraduate psychology students completed the survey (297 female, $M_{age} = 19.81$, $SD_{age} = 4.23$). As compensation, participants received partial course credit towards their undergraduate psychology courses.

Procedure and Materials

Participants completed the questionnaire online. First, participants completed a measure of attachment orientation. Participants then completed a measure of social goal orientations, followed by a measure of meaning in life.

Attachment Orientation

A brief version of the Experiences in Close Relationships Scale (Wei et al., 2007) was used to measure attachment-related anxiety and avoidance (See Appendix). Participants were asked to rate how much they agree with 12 statements on a scale from 1, “*strongly disagree*”, to 7, “*strongly agree*.” Sample items from the attachment anxiety subscale include “*I need a lot of reassurance that I am loved by my partner*” and “*I worry that romantic partners won’t care about me as much as I care about them.*” Sample items from the attachment avoidance subscale include “*I try to avoid getting too close to my partner*” and “*I am nervous when partners get too close to me*” (Wei et al., 2007). Reliability of the ECR-S in this sample was fair, with coefficient alphas of .68 for the anxiety subscale ($M = 3.78$, $SD = 1.00$) and .74 for the avoidance subscale ($M = 2.90$, $SD = 0.96$).

Social Goal Orientation

As a measure of social goal orientation, I used the Belongingness Orientation Scale (See Appendix; Lavigne et al., 2011). The Belongingness Orientation Scale (BOS) includes two subscales designed to measure two distinct goal orientations (growth and deficit-reduction) that serve to guide an individual's interactions in the social world. Participants were asked to rate how much they agree with ten different statements of "*My relationships are important to me because...*", using a scale from 1, "*strongly disagree*", to 6, "*strongly agree*". Sample items from the growth orientation subscale include "*I find it exciting to discuss with people on numerous topics*" and "*I have a sincere interest in others*", whereas sample items from the deficit-reduction orientation subscale include "*I need to feel accepted*" and "*I don't want to be alone.*" Reliability of both subscales was good, with coefficient alphas of .88 for the growth subscale ($M = 4.64$, $SD = 0.97$) and .74 for the deficit-reduction subscale ($M = 4.06$, $SD = 1.02$).

Meaning in Life

Meaning in life was assessed with Steger and colleagues' (2006) Meaning in Life Questionnaire (MLQ; See Appendix). The MLQ assesses meaning in life along two scales: presence of meaning (MLQ-P) and search for meaning (MLQ-S) (Steger et al., 2006). Participants were asked to what extent ten statements are true on a scale from 1, "*absolutely untrue*", to 7, "*absolutely true*". Sample items from the presence of meaning scale include "*I understand my life's meaning*" and "*My life has a clear sense of purpose.*" Sample items from the search for meaning subscale include "*I am always looking to find my life's purpose*" and "*I am always searching for something that makes my life feel significant.*" Both subscales had high internal consistency for this sample,

with coefficient alphas of .85 for the presence scale ($M = 4.61$, $SD = 1.28$) and .87 for the search scale ($M = 4.97$, $SD = 1.31$).

Results

First, a correlation matrix was conducted among all variables, as shown in *Table 1*. Generally, correlations supported the predicted associations. In support of the hypotheses, attachment-related anxiety was positively and significantly associated with deficit-reduction goals and search for meaning, and negatively and significantly associated with presence of meaning. While not predicted, attachment-related anxiety was also positively and significantly associated with growth-oriented goals. In further support of the hypotheses, deficit-reduction goals were significantly associated with search for meaning. However, contrary to the hypotheses, deficit-reduction goals were not significantly associated with presence of meaning, although the direction of the relationship is negative as predicted. Attachment-related avoidance was negatively and significantly associated with growth-oriented goals and presence of meaning, in support of the third predicted indirect pathway. Also as predicted, attachment-related avoidance was not significantly associated with deficit-reduction goals or search for meaning. Growth-oriented goals were positively and significantly associated with presence of meaning, as predicted. While not predicted, growth-oriented goals were also positively and significantly associated with search for meaning.

Then, I used Hayes's (2013) PROCESS macro for SPSS to test the significance of the three predicted indirect pathways. Generally, this method involves conducting two hierarchical linear regressions, and estimating and testing the significance of an indirect pathway linking a predictor variable to an outcome via a mediating variable. The first

regression assessed the relationship between the attachment predictor variable and the social goal mediation variable, while controlling for the opposing attachment and social goal variables. The second regression assessed the relationship between the attachment predictor variable and the meaning outcome variable with the mediator included in the model, while again controlling for the opposing attachment and social goal variables. Finally, a resampling bootstrap methodology with 95% confidence interval based on 5,000 iterations was used to estimate and test the statistical significance of an indirect effect.

Indirect Pathway 1: Attachment anxiety → deficit-reduction → presence of meaning

The first indirect pathway model links attachment-related anxiety to presence of meaning via deficit-reduction goals, while controlling for attachment-related avoidance and growth-oriented goals. As hypothesized, attachment-related anxiety was positively and significantly associated with deficit-reduction goals in the first regression analysis, $b = 0.36$, $SE = 0.04$, $t = 8.19$, $p < .001$, 95% $CI [0.27, 0.45]$. Attachment-related avoidance was not significantly associated with deficit reduction goals, $b = -0.004$, $SE = 0.05$, $t = -0.09$, $p = .93$, 95% $CI [-1.00, 0.09]$, but growth-oriented goals were positively and significantly associated with deficit-reduction goals, $b = 0.40$, $SE = 0.04$, $t = 9.34$, $p < .001$, 95% $CI [0.32, 0.49]$. As hypothesized, attachment-related anxiety was negatively and significantly associated with presence of meaning in the second regression analysis, $b = -0.21$, $SE = 0.07$, $t = -3.05$, $p = .003$, 95% $CI [-0.34, -0.07]$. Also as hypothesized, deficit-reduction goals were negatively associated with presence of meaning, however this relationship did not reach statistical significance, providing evidence against the

mediation hypothesis, $b = -0.09$, $SE = 0.07$, $t = -1.27$, $p = .21$, 95% $CI [-0.23, 0.05]$.

Attachment-related avoidance was negatively and significantly associated with presence of meaning, $b = -0.13$, $SE = 0.07$, $t = -2.01$, $p < .05$, 95% $CI [-0.27, -0.003]$, whereas growth-oriented goals were positively and significantly associated with presence of meaning, $b = 0.21$, $SE = 0.07$, $t = 3.12$, $p = .002$, 95% $CI [0.08, 0.35]$. Finally, the test of the indirect effect was not statistically significant, providing further evidence against the mediation hypothesis, $M_{indirect} = -0.03$, $SE = 0.03$, 95% $CI [-0.09, 0.02]$.

Indirect Pathway 2: Attachment anxiety → deficit-reduction → search for meaning

The second indirect pathway assessed the model linking attachment-related anxiety to search for meaning via deficit-reduction goals, while controlling for attachment-related avoidance and growth-oriented goals. As reported in the previous model, attachment-related anxiety was positively and significantly associated with deficit-reduction goals, $b = 0.36$, $SE = 0.04$, $t = 8.19$, $p < .001$, 95% $CI [0.27, 0.45]$, attachment-related avoidance was not significantly associated with deficit-reduction goals, $b = -0.004$, $SE = 0.05$, $t = -0.09$, $p = .93$, 95% $CI [-1.00, 0.09]$, and growth-oriented goals were positively and significantly associated with deficit-reduction goals, $b = 0.40$, $SE = 0.04$, $t = 9.34$, $p < .001$, 95% $CI [0.32, 0.49]$ as predicted. In the second regression, attachment-related anxiety was positively and significantly associated with search for meaning as predicted, $b = 0.25$, $SE = 0.07$, $t = 3.64$, $p < .01$, 95% $CI [0.11, 0.38]$. As hypothesized, deficit-reduction goals were positively and significantly associated with search for meaning, $b = 0.31$, $SE = 0.07$, $t = 4.55$, $p < .001$, 95% $CI [0.18, 0.45]$. Attachment-related avoidance was not significantly associated with search for meaning, $b = -0.009$, $SE = 0.07$, $t = -0.14$, $p = .89$, 95% $CI [-0.14, 0.12]$, and growth-oriented goals

were also not significantly associated with search for meaning, $b = 0.08$, $SE = 0.07$, $t = 1.16$, $p = .25$, 95% $CI [-0.06, 0.21]$. Finally, the test of the indirect effect was significant in support of the hypothesis, $M_{indirect} = 0.11$, $SE = 0.03$, 95% $CI [0.06, 0.17]$.

Indirect Pathway 3: Attachment avoidance → growth → presence of meaning

The third indirect pathway assessed the model linking attachment-related avoidance to presence of meaning via growth-oriented goals, while controlling for attachment-related anxiety and deficit-reduction goals. In the first regression analysis, attachment-related avoidance was negatively and significantly associated with growth-oriented goals as predicted, $b = -0.16$, $SE = 0.05$, $t = -3.51$, $p < .01$, 95% $CI [-0.25, -0.07]$. Attachment-related anxiety was not significantly associated with growth-oriented goals, $b = -0.02$, $SE = 0.05$, $t = -0.45$, $p = .65$, 95% $CI [-0.12, 0.07]$, however deficit-reduction goals were positively and significantly associated with growth-oriented goals, $b = 0.42$, $SE = 0.05$, $t = 0.34$, $p < .001$, 95% $CI [0.33, 0.51]$. In the second regression analysis, attachment-related avoidance was negatively and significantly associated with presence of meaning as hypothesized, $b = -0.13$, $SE = 0.07$, $t = -2.01$, $p < .05$, 95% $CI [-0.27, -0.003]$. As predicted, growth-oriented goals were positively and significantly associated with presence of meaning, $b = .22$, $SE = 0.07$, $t = 3.12$, $p < .01$, 95% $CI [0.08, 0.35]$. Attachment-related anxiety was negatively and significantly associated with presence of meaning, $b = -0.21$, $SE = 0.07$, $t = -3.05$, $p = .003$, 95% $CI [-0.34, -0.07]$, however deficit-reduction goals were not significantly associated with presence of meaning, $b = -0.09$, $SE = 0.07$, $t = -1.27$, $p = .21$, 95% $CI [-0.23, 0.05]$. In support of the hypothesis, the test of the indirect effect was statistically significant, $M_{indirect} = -0.03$, $SE = 0.02$, 95% $CI [-0.07, -0.01]$.

Discussion

Overall, Study 1 provided evidence supporting two of the three hypothesized pathways linking attachment to meaning via social goal orientations. While previous research has linked attachment to meaning (e.g., Reizer et al., 2013), attachment to social goals (Lavigne et al., 2011), and social goals to relational outcomes (e.g., Gable, 2006) respectively, this study extends the previous research by including measures for all three within one study. This provided the opportunity to directly assess the relationships between attachment and meaning, attachment and social goals, and social goals and meaning, respectively, as well as to investigate the indirect effect of social goals in the relationship between attachment and meaning. Overall, two out of the three predicted pathways were significant. In Indirect Pathway 1, attachment-related anxiety was significantly associated with less presence of meaning, however increased commitment to deficit-reduction goals did not significantly mediate this relationship. An interesting finding in this pathway is that the predicted relationship appears to be there, but does not reach significance. One possible explanation for this finding is that the relationship is very small, and this could be due to another factor being involved in the relationship that was not assessed here. However, Indirect Pathway 2 was significant, in which attachment-related anxiety was significantly associated with greater search for meaning via increased commitment to deficit-reduction goals. Indirect Pathway 3 was also significant, in which attachment-related avoidance was significantly associated with less presence of meaning via decreased commitment to growth goals.

Study 2

The purpose of Study 2 was to extend the findings of Study 1 by using an alternate research design. Specifically, Study 2 sought to manipulate attachment. By manipulating attachment, this would provide greater insight into the predicted pathways by determining an order to the relationships, as well as providing greater control over the correlation between trait attachment orientations. This design also allowed me to explore moderation of trait differences in attachment-related anxiety and avoidance. Additionally, including trait measures of attachment in Study 2 gave the potential to test and attempt to replicate the measured pathways found in Study 1.

Method

Participants

A total of 356 undergraduate psychology students participated in the study (252 female, $M_{age} = 19.77$, $SD_{age} = 2.975$). As compensation, participants received partial course credit towards their undergraduate psychology courses.

Procedure and Materials

Participants completed a questionnaire online. First, participants completed a measure of attachment-related anxiety and avoidance. Then, participants completed an attachment security/insecurity manipulation task. Specifically, participants were randomly assigned to complete a writing task meant to prime attachment security, attachment avoidance, or attachment anxiety (Green & Campbell, 2000). Finally, participants completed a measure of social goal orientations and a measure of meaning in life.

Attachment Orientation

The same measure from Study 1 of attachment-related anxiety and avoidance was used (Wei et al., 2007; See Appendix). Reliability was good, with coefficient alphas of .75 for the attachment-related anxiety subscale ($M = 4.01$, $SD = 1.13$) and .75 for the attachment-related avoidance subscale ($M = 3.11$, $SD = 1.04$).

Attachment Manipulation

As a manipulation of attachment security/insecurity, participants completed a writing task inspired by Green and Campbell's (2000) attachment priming task (See Appendix). In the original version created by Green and Campbell (2000), participants were primed with attachment through a sentence memorization task, in which participants were given a list of 10 sentences and asked to memorize them by continuously reading through them until instructed to stop. Three of the sentences were filler items, while the remaining seven sentences focused on core themes of either attachment-related anxiety, attachment-related avoidance, or attachment-related security, depending on what condition participants were assigned to (Green & Campbell, 2000). In the modified version used in the current research, participants were instructed to read a sentence prompt derived from the sentences used in the original Green and Campbell (2000) task that described a same-sex target person in a threatening interpersonal situation (e.g., changes in the level of intimacy in a romantic relationship). To match participants with a same-sex target person, participants were asked to indicate their gender earlier in the survey, and the survey then directed the participants to the prompt that reflected their selected gender. Once given the attachment prompt, participants were instructed to reflect on the prompt and write four keywords describing how the target person may feel in the scenario. Then, participants were asked to write for approximately five minutes, using the

keywords they wrote, about how the target person might feel and approach the situation, and what the outcome of the situation may be. The attachment security condition focused on an individual who trusts their partner and is comfortable with interpersonal closeness/growth (e.g., “[Target name] is comfortable with and completely trusts his/her romantic partner. One day, [target name]’s partner communicates that there need to be changes in their relationship”). The attachment anxiety condition focused on an individual who is concerned about rejection and abandonment (e.g., “[Target name] is constantly worried that his/her romantic partner will leave him/her. One day, [target name]’s partner tells him/her they want to slow things down in the relationship”). The attachment avoidance condition focused on an individual who seeks to avoid commitment and dependency (e.g., “[Target name] is reluctant to make a long-term romantic commitment. One day, [target name]’s partner communicates that they want the relationship to get more serious”).

Social Goal Orientation

The same measure from Study 1 was used to assess social goal orientations (Lavigne et al., 2011). Reliability for the BOS in this sample was good, with coefficient alphas of .76 for the deficit-reduction subscale ($M = 3.99$, $SD = .95$) and .88 for the growth subscale ($M = 4.69$, $SD = .92$).

Meaning in Life

Meaning in life was assessed using the same measure as in Study 1 (Steger et al., 2006). Reliability for the MLQ was high in this sample, with coefficient alphas of .85 for the presence of meaning subscale ($M = 4.5$, $SD = 1.23$) and .89 for the search for meaning subscale ($M = 4.79$, $SD = 1.27$).

Results

Primary Experimental Analyses

I conducted conditional process analyses (Hayes, 2013) to test 1) the effects of the attachment priming conditions on the meaning of life outcomes and the social goal mediators, 2) moderation by individual differences in attachment-related avoidance and anxiety, respectively, and 3) the significance of the hypothesized experimental indirect pathways in Study 1 at low and high values of attachment-related avoidance and anxiety, respectively, using the PROCESS macro for SPSS.

To test the overall effects of the attachment primes on the meaning in life outcomes and the social goal mediators, as well as whether those effects were moderated by individual differences in attachment, each meaning outcome and social-goal mediator was regressed on the attachment prime conditions (dummy coded), trait attachment-related anxiety (centered), trait attachment-related avoidance (centered), the condition x attachment-related anxiety interaction terms and the condition x attachment-related avoidance interaction terms, and finally the condition x attachment-related anxiety x attachment-related avoidance interaction terms. Specifically, I entered two dummy coded variables (D1 = anxiety prime v secure prime, D2 = avoidance prime v secure prime), attachment-related anxiety, and attachment-related avoidance in the first step of the regression. In the second step of the regression, I entered the D1 x attachment-related anxiety, the D1 x attachment-related avoidance, the D2 x attachment-related anxiety, the D2 x attachment-related avoidance, and the attachment-related anxiety x attachment-related avoidance interactions. Finally, in the third step, I entered the D1 x attachment-related anxiety x attachment-related avoidance, and the D2 x attachment-related anxiety x

attachment-related avoidance to assess three-way interactions. Statistics for each of the full regression models is presented in *Tables 2 and 3*. Below are the results with respect to the hypothesized indirect pathways.

Indirect Pathway 1: Anxiety prime → deficit-reduction → presence of meaning

Contrary to the hypothesis that the anxiety prime would decrease presence of meaning relative to the secure prime condition, the main effect of D1 was not statistically significant. However, there was a significant main effect of trait attachment-related anxiety and presence of meaning in life, such that greater levels of attachment-related anxiety were associated with lower levels of meaning in life. There was also no evidence in support of moderation by attachment-related anxiety or attachment-related avoidance, since the two-way D1 x attachment-related anxiety and D1 x attachment-related avoidance interactions on presence of meaning did not reach statistical significance. Additionally, there was no evidence of a three-way interaction, since the D1 x attachment-related anxiety x attachment-related avoidance interaction on presence of meaning was not statistically significant.

Contrary to the hypothesis that the anxiety prime would increase deficit-reduction goal commitment, the main effect of D1 was not statistically significant. However, there was a statistically significant main effect of trait attachment-related anxiety, such that greater attachment-related anxiety was associated with stronger commitment to deficit-reduction goals. There was also no evidence in support of moderation by attachment-related anxiety or attachment-related avoidance, since the two-way D1 x attachment-related anxiety and D1 x attachment-related avoidance interactions on deficit-reduction goals did not reach statistical significance. Further, there was no evidence of a three-way

interaction, since the D1 x attachment-related anxiety x attachment-related avoidance interaction on deficit-reduction goals was not statistically significant.

Based on the lack of significant main and interaction effects on presence of meaning and deficit-reduction goals, I did not proceed in estimating and testing the significance of the experimental indirect effects.

Indirect Pathway 2: Anxiety prime → deficit-reduction → search for meaning

Contrary to the hypothesis that the anxiety prime would increase search for meaning relative to the secure prime condition, the main effect of D1 was not statistically significant. However, there was a significant main effect of trait attachment-related anxiety and search for meaning in life, such that greater levels of attachment-related anxiety were associated with higher levels of search for meaning. There was no evidence in support of moderation by attachment-related anxiety or attachment-related avoidance, since the two-way D1 x attachment-related anxiety and D1 x attachment-related avoidance interactions on search for meaning was not statistically significant. There was also no evidence of a three-way interaction, since the D1 x attachment-related anxiety x attachment-related avoidance interaction on search for meaning was not statistically significant.

As stated previously, results were contrary to the hypothesis that the anxiety prime would increase commitment to deficit-reduction goals. While there was no significant main effect of D1 on deficit-reduction goals, there was a significant main effect of trait attachment-related anxiety, such that greater attachment-related anxiety was associated with stronger commitment to deficit-reduction goals. Again, there was no evidence in support of moderation by attachment-related anxiety or attachment-related

avoidance, and there was no significant three-way interaction. Due to the lack of significant main and interaction effects on search for meaning and deficit-reduction goals, I once again did not proceed in investigating the significance of the experimental indirect effects.

Indirect Pathway 3: Avoidance prime → growth → presence of meaning

Contrary to the hypothesis that the avoidance prime would decrease presence of meaning relative to the secure prime condition, the main effect of D2 was not statistically significant. There was also no main effect of trait attachment-related avoidance on presence of meaning. Further, there was no evidence in support of moderation by attachment-related anxiety or attachment-related avoidance, since the two-way D2 x attachment-related anxiety and D2 x attachment-related avoidance interactions on presence of meaning were not statistically significant. Additionally, there was no evidence of a significant three-way interaction, since the D2 x attachment-related anxiety x attachment-related avoidance interaction on presence of meaning was not statistically significant.

Contrary to the hypothesis that the avoidance prime would decrease commitment to growth goals, there was no significant main effect of D2 on growth goals. However, there was a significant main effect of trait attachment-related avoidance, such that greater attachment-related avoidance was associated with less commitment to growth goals. Once again, there was no evidence in support of moderation by attachment-related anxiety or attachment-related avoidance, as well as no significant three-way interaction on growth goals. Due to the lack of significant main and interaction effects on presence

of meaning and growth goals, I therefore did not proceed in further investigating the significance of the experimental indirect effects.

Analysis of Measured Variables

Results summarized in the previous section indicated that the attachment manipulation did not have a significant main effect on any of the four outcomes, and that there was no significant moderation of either attachment-related anxiety or attachment-related avoidance. Therefore, I continued my analyses using the measured levels of trait attachment orientation, the meaning in life outcomes, and the social goal orientations. First, correlations were conducted to assess the relationships among the measured variables, as shown in *Table 1*. Results generally supported the direct predicted relationships within the three predicted indirect pathways. Specifically, attachment-related anxiety was positively and significantly associated with deficit-reduction goals and search for meaning, and negatively and significantly associated with presence of meaning. Also as predicted, attachment-related anxiety was not significantly associated with growth-oriented goals. Deficit-reduction goals were positively and significantly associated with search for meaning, and negatively and significantly associated with presence of meaning, as predicted. In support of the third predicted indirect pathway, attachment-related avoidance was negatively and significantly associated with growth-oriented goals and presence of meaning. Also as predicted, attachment-related avoidance was not significantly associated with search for meaning or deficit-reduction goals. In further support of the hypothesis, growth-oriented goals were positively and significantly associated with presence of meaning, as predicted. While not predicted, growth-oriented goals were also positively and significantly associated with search for meaning. Finally, I

explored the three hypothesized pathways using the same method as in Study 1.

Specifically, I used Hayes's (2013) PROCESS macro for SPSS to test the significance of the mediated pathways.

Indirect Pathway 1: Attachment anxiety → deficit-reduction → presence of meaning

The first indirect pathway model assessed the link between attachment-related anxiety and presence of meaning via deficit-reduction goals, while controlling for attachment-related avoidance and growth-oriented goals. As hypothesized, attachment-related anxiety was positively and significantly associated with deficit-reduction goals in the first regression analysis, $b = 0.31$, $SE = 0.04$, $t = 7.65$, $p < .001$, 95% $CI [0.23, 0.39]$. Attachment-related avoidance was not significantly associated with deficit reduction goals, $b = -0.05$, $SE = 0.04$, $t = -1.11$, $p = .27$, 95% $CI [-0.14, 0.04]$, however, growth-oriented goals were positively and significantly associated with deficit-reduction goals, $b = 0.35$, $SE = 0.05$, $t = 7.33$, $p < .001$, 95% $CI [0.26, 0.45]$. In the second regression analysis, attachment-related anxiety was negatively and significantly associated with presence of meaning as predicted, $b = -0.28$, $SE = 0.06$, $t = -4.60$, $p < .001$, 95% $CI [-0.40, -0.16]$. Deficit-reduction goals were negatively associated with presence of meaning as predicted, however this relationship was not statistically significant, $b = -0.12$, $SE = 0.08$, $t = -1.64$, $p = .10$, 95% $CI [-0.27, 0.03]$. Attachment-related avoidance was not significantly associated with presence of meaning, $b = -0.09$, $SE = 0.06$, $t = -1.46$, $p = .15$, 95% $CI [-0.21, 0.31]$, whereas growth-oriented goals were positively and significantly associated with presence of meaning, $b = 0.25$, $SE = 0.07$, $t = 3.46$, $p < .001$, 95% $CI [0.11, 0.39]$. Finally, contrary to the hypothesis, the test of the indirect effect was not statistically significant, $M_{indirect} = -0.04$, $SE = 0.03$, 95% $CI [-0.09, 0.01]$.

Indirect Pathway 2: Attachment anxiety → deficit-reduction → search for meaning

The second indirect pathway model links attachment-related anxiety to search for meaning via deficit-reduction goals, while also controlling for attachment-related avoidance and growth-oriented goals. In the first regression analysis, attachment-related anxiety was positively and significantly associated with deficit-reduction goals, $b = 0.31$, $SE = 0.04$, $t = 7.65$, $p < .001$, 95% CI [0.23, 0.39], attachment-related avoidance was not significantly associated with deficit reduction goals, $b = -0.05$, $SE = 0.04$, $t = -1.11$, $p = .27$, 95% CI [-0.14, 0.04], and growth-oriented goals were positively and significantly associated with deficit-reduction goals, $b = 0.35$, $SE = 0.05$, $t = 7.33$, $p < .001$, 95% CI [0.26, 0.45], as hypothesized. In the second regression analysis, attachment-related anxiety was positively and significantly associated with search for meaning, $b = 0.14$, $SE = 0.06$, $t = 2.18$, $p < .05$, 95% CI [0.13, 0.26]. Deficit-reduction goals were also positively and significantly associated with search for meaning as predicted, $b = 0.26$, $SE = 0.08$, $t = 3.46$, $p < .001$, 95% CI [0.11, 0.42]. Attachment-related avoidance was not significantly associated with search for meaning, $b = 0.08$, $SE = 0.06$, $t = 1.29$, $p = .20$, 95% CI [-0.04, 0.21], however growth-oriented goals were positively and significantly associated with search for meaning, $b = 0.32$, $SE = 0.07$, $t = 4.36$, $p < .001$, 95% CI [0.18, 0.47]. In support of the hypothesis, the test of the indirect effect was statistically significant, $M_{indirect} = 0.08$, $SE = 0.03$, 95% CI [0.03, 0.14].

Indirect Pathway 3: Attachment avoidance → growth → presence of meaning.

The third indirect pathway model assessed the link from attachment-related avoidance to presence of meaning via growth-oriented goals, controlling for attachment-related anxiety and deficit-reduction goals. In the first regression analysis, attachment-

related avoidance was negatively and significantly associated with growth goals as predicted, $b = -0.12$, $SE = 0.05$, $t = -2.53$, $p < .001$, 95% $CI [-0.20, -0.03]$. Attachment-related anxiety was not significantly associated with growth goals, $b = -0.05$, $SE = 0.05$, $t = -1.01$, $p = .31$, 95% $CI [-0.13, 0.04]$, however deficit-reduction goals were positively and significantly associated with growth-oriented goals, $b = 0.38$, $SE = 0.05$, $t = 7.33$, $p < .001$, 95% $CI [0.28, 0.48]$.

In the second regression analysis, attachment-related avoidance was not significantly associated with presence of meaning, contrary to the hypothesis, $b = -0.09$, $SE = 0.06$, $t = -1.46$, $p = .14$, 95% $CI [-0.21, 0.03]$. Growth-oriented goals were positively and significantly associated with presence of meaning, $b = 0.25$, $SE = 0.07$, $t = 3.46$, $p < .001$, 95% $CI [0.11, 0.39]$. Attachment-related anxiety was negatively and significantly associated with presence of meaning, $b = -0.28$, $SE = 0.06$, $t = -4.60$, $p < .001$, 95% $CI [-0.40, -0.16]$, however deficit-reduction goals were not significantly associated with presence of meaning, $b = -0.12$, $SE = 0.08$, $t = -1.64$, $p = .10$, 95% $CI [-0.27, 0.02]$. In support of the hypothesis, the test of the indirect effect was statistically significant, $M_{indirect} = -0.03$, $SE = 0.01$, 95% $CI [-0.06, -0.01]$.

Discussion

While the goal of Study 2 was to assess the predicted indirect effects of social goals on the relationship between attachment and meaning using an experimental design, results indicated that the experimental manipulation of attachment was unsuccessful. Reading and writing about a threatening interpersonal scenario from the mindset of a given attachment framework did not significantly affect participants' commitment to deficit-reduction goals, growth goals, presence of meaning, or search for meaning.

Therefore, the experimental evidence from Study 2 did not support any of the hypotheses regarding either the direct or indirect pathways. While the attachment manipulation was unsuccessful in achieving any significant main effects, I was, however, able to conduct further analyses using measured levels of trait attachment. Overall, the results from measured levels of trait attachment in Study 2 successfully replicated the findings from Study 1. Generally, the same results were found as in Study 1, where two out of the three hypothesized mediation models were supported. In Indirect Pathway 1, trait levels of attachment-related anxiety were significantly associated with presence of meaning, but this relationship was not mediated by increased commitment to deficit-reduction goals as predicted. Attachment-related anxiety was, however, significantly associated with greater search for meaning via increased commitment to deficit-reduction goals in Indirect Pathway 2. Attachment-related avoidance was significantly associated with less presence of meaning via decreased commitment to growth goals in Indirect Pathway 3.

General Discussion

Over the course of two studies, I have found evidence to partially support the notion that social goals may help to explain why individuals with insecure attachment orientations may experience deficits in meaning. Specifically, support was found in studies 1 and 2 for the second predicted indirect pathway, in which trait levels of attachment-related anxiety were significantly associated with greater search for meaning via a greater commitment to deficit-reduction social goals. Support was also found in studies 1 and 2 for the third predicted indirect pathway, in which attachment-related avoidance was significantly associated with less presence of meaning via decreased commitment to growth social goals. However, no strong support was found for the first

indirect pathway, in which I expected attachment-related anxiety to be significantly associated with less presence of meaning via greater commitment to deficit-reduction social goals. In both studies, attachment-related anxiety was significantly and inversely associated with presence of meaning as predicted. However, deficit-reduction goals were not significantly associated with presence of meaning as predicted. Still, the overall model including attachment-related anxiety and deficit-reduction goals was significantly associated with presence of meaning in both studies. This could indicate that the predicted indirect effect does exist, but the effect is very small. Together, the results from studies 1 and 2 provide partial support for the role that social goals may play in the relationship between attachment orientations and meaning in life.

Generally, this research provides some support for the idea that individual differences in relational approaches may be a key factor in the meaning people derive from their relationships. Specifically, the results of these studies suggest that individuals high in attachment-related anxiety may be more likely to adopt deficit-reduction social goals, and individuals high in attachment-related avoidance may be less likely to adopt growth social goals. Through these differences in social goal pursuit, individuals may approach their relationships differently or function differently within their relationships. Critically, this may then impact the meaning they derive from their relationships, which are generally an important source of perceptions of meaning in life.

These results have implications spanning the domains of attachment, relationships, and meaning in life. Within attachment research, there has been much research establishing the association between insecure attachment orientations and deficits in meaning (e.g., Reizer et al., 2013). The results of these two studies replicate

those previous associations, as well as extend those findings by providing a first look at social goals as a possible explanation for those associations. This is an important step in attachment research, as it demonstrates that relational approaches influenced by an individual's attachment orientation may be a key aspect of why individuals with insecure attachment orientations may be more likely to experience deficits in meaning. Within the domain of relationships, these results provide further support for how social goals can impact meaning derived from relationships. Relationships confer many benefits and are important to well-being through the meaning they provide (e.g., Feeney & Collins, 2015). It is important to understand what may impact a person's abilities to derive those benefits from their relationships, and this research finds that social goals may be a key factor. Therefore, social goals may have far-reaching consequences on the relationship and the benefits it may provide.

Research within the domain of meaning in life has provided strong evidence of the importance of meaning in life for well-being and a variety of positive outcomes (e.g., Zika & Chamberlain, 1987). Relationships have also been established to be a key resource for meaning in life (e.g., Nelson, Abeyta, & Routledge, 2019). The results of these two studies not only provide further support for the role that relationships play in perceptions of meaning, but also suggest that individual differences in relational approaches may impact this relationship. Because social goals are involved in day-to-day functioning in the relationships and interactions all around us, it is important to understand what individual differences may be impacting these social goals and therefore the meaning derived from these relationships and interactions. This research finds that

attachment orientation is one such individual difference that has implications for social goals and, ultimately, meaning in life.

Some limitations of this research can serve to inform future research in this domain. Specifically, a more representative sample and alternative methodologies to the online questionnaire format would be beneficial in future research. Additionally, alternate research designs could provide more information about social goals as a mediator in the relationship between attachment orientations and meaning in life. For example, a longitudinal design would provide the opportunity to infer temporal order in the relationship. Alternative data collection methods such as ecological momentary assessment or daily diaries could also be beneficial in revealing how these pathways take place in the more natural context of day-to-day life. In the current research, the attachment prime manipulation was not successful in predicting any of the outcomes. While it was predicted that the attachment prime manipulation would be successful, I did not pre-test the manipulation prior to conducting the current research. The manipulation was created for this research by basing the attachment primes on a similar attachment manipulation created by Green and Campbell (2000). While the manipulation of attachment was successful in their research, the changes that were made to modify the attachment primes for the use in the current research may have played a role in making the manipulation less successful within the context of these two studies. For example, it may have been the particular sentence prompts that were chosen out of the seven that were used in the original version, or it could have been the change from a memorization task to a writing prompt. Participants may not have been as engaged by a writing prompt as they were by Green and Campbell's (2000) memorization task, thereby reducing the

effectiveness of the manipulation. Another obstacle in manipulating attachment is that trait attachment orientations may be difficult to overcome for the duration of the study. By using prompts based on a threatening interpersonal situation, participants' trait attachment orientations might have been activated, making the prompt less effective if the attachment condition differed from the participants' trait attachment orientation. It may be useful to pretest participants on attachment-related anxiety and avoidance, respectively. However, in the current research, participants' trait attachment orientations were measured and there was no evidence of moderation. Therefore, finding an alternate way to test these relationships experimentally would be beneficial to extending the results found in the current research.

More broadly, future research may seek to investigate some of the questions that the current research raises. The results of both studies presented here indicate that attachment-related anxiety and increased commitment to deficit-reduction goals predict greater search for meaning in life. However, it is unknown whether the search for meaning in this context is a positive or negative outcome. It could be argued that a search for meaning could be an adaptive response to perceptions of lacking meaning, or that a search for meaning could be maladaptive in that it is a constant search for more meaning regardless of perceptions of meaning. More research is needed to better understand the context and functions of this relationship. Another important question that results from this research is why the link between deficit-reduction goals and presence of meaning in life did not reach significance in the mediation model. Deficit-reduction goals and presence of meaning in life were significantly correlated with each other in the second study, but not in the first, indicating that there may be other factors impacting the

relationship. Further investigation is needed to understand what other factors may be impacting the link between deficit-reduction goals and presence of meaning in life, and whether the inclusion of those factors in the hypothesized mediation model would produce different results than those reported in the current research.

In conclusion, the current research is an important step in providing a possible explanation for the link between attachment orientations and meaning in life. These findings point to an important link in the domain of relationships and meaning in life: social goals. By investigating how social goals may link attachment orientations and meaning outcomes, we can more deeply understand how relationships and meaning are related. Given the importance of meaning in life and relationships to well-being (e.g., Zika & Chamberlain, 1987; Feeney & Collins, 2015), future research should seek to extend these findings and further investigate the direct and indirect links between attachment, social goals, and meaning in life.

Appendix

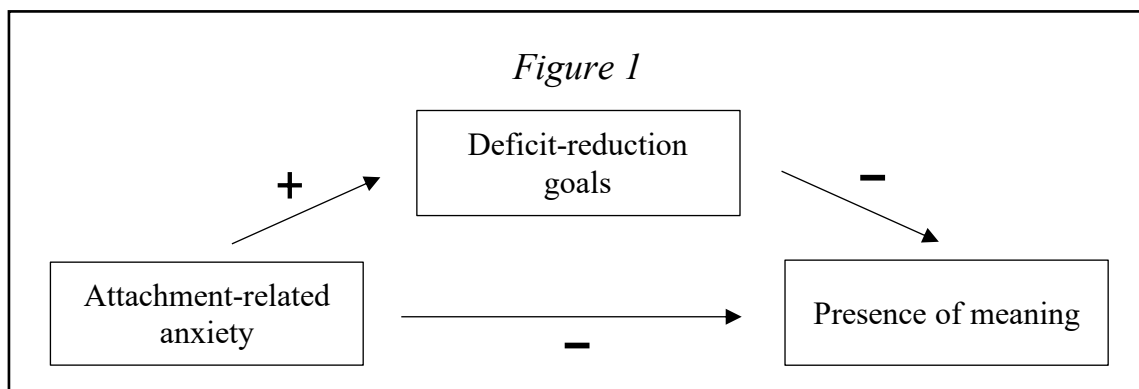


Figure 1. Depiction of the proposed mediation model for the effect of the attachment-related anxiety prime on presence of meaning via greater commitment to deficit-reduction social goals.

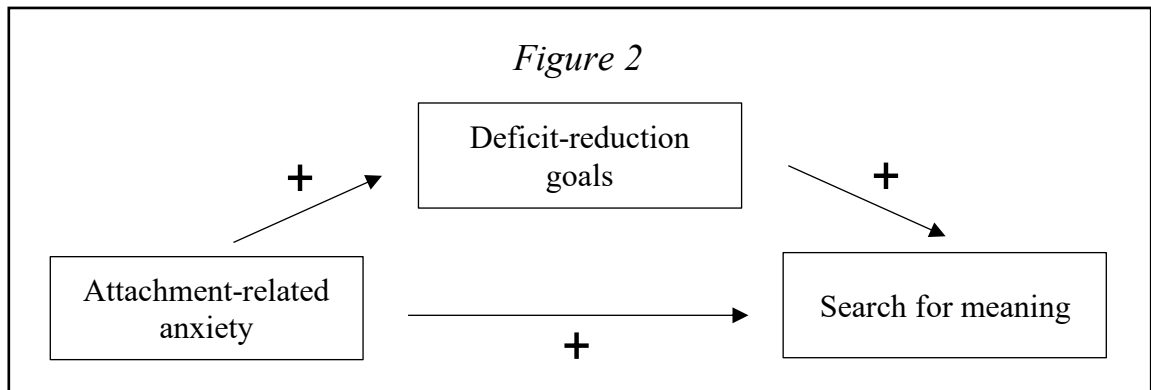


Figure 2. Depiction of the proposed mediation model for the effect of the attachment-related anxiety prime on search for meaning via greater commitment to deficit-reduction social goals.

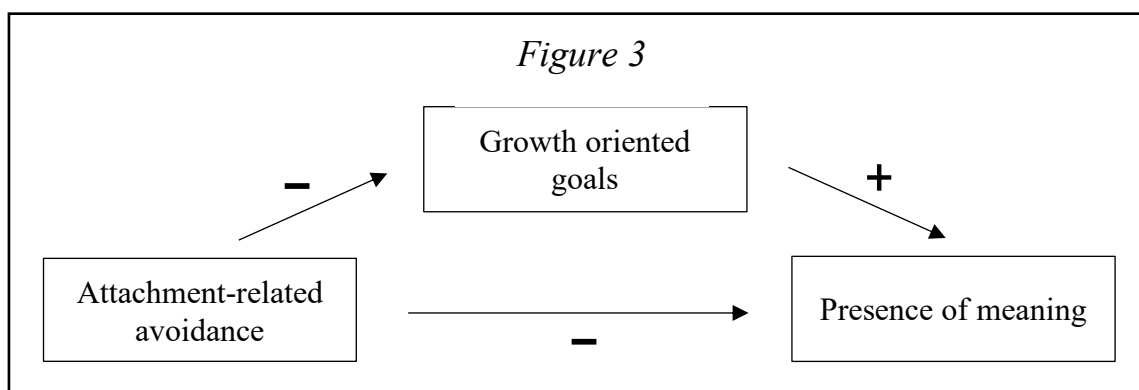


Figure 3. Depiction of the proposed mediation model for the effect of the attachment-related avoidance prime on presence of meaning via decreased commitment to growth-oriented social goals.

Table 1. Correlation matrix for all measured variables collected in Study 1 and Study 2.

Measure	Study 1					Study 2				
	1	2	3	4	5	1	2	3	4	5
1. Attachment – related anxiety	—					—				
2. Attachment-related avoidance	.32**	—				.28**	—			
3. Growth goals	.10*	-.14**	—			.05	-.15**	—		
4. Deficit-reduction goals	.39**	.05	.42**	—		.37**	-.001	.37**	—	
5. Presence of meaning	-.21**	-.18**	.13**	-.07	—	-.31**	-.18**	.15**	-.12*	—
6. Search for meaning	.29**	.06	.18**	.34**	-.08	.22**	.07	.30**	.33**	.02

Note. ** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

Table 2. Hierarchical Regressions on the Impact of Attachment Priming Conditions and Trait Individual Differences in Attachment-Related Anxiety and Avoidance on Meaning Outcomes in Study 2

Step	Predictor	Presence of Meaning						Search for Meaning					
		<i>B</i>	<i>SE</i>	<i>p</i>	ΔR^2	<i>F</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>	ΔR^2	<i>F</i>	<i>p</i>
1					.11	10.17	< .001				.05	4.68	.001
	D1 (Anxiety v Secure Prime)	0.11	0.15	.47				-0.04	0.16	.83			
	D2 (Avoidance v secure prime)	0.02	0.15	.89				-0.08	0.16	.61			
	Trait Attachment Anxiety	-0.30	0.06	< .001				0.25	0.06	< .001			
	Trait Attachment Avoidance	-0.12	0.06	.06				.005	0.07	.94			
2					.04	2.78	.02				.008	0.57	.72
	D1 X attachment anxiety	0.04	0.14	.80				0.02	0.15	.89			
	D1 X attachment avoidance	0.19	0.16	.24				0.10	0.17	.55			
	D2 X attachment anxiety	-0.08	0.14	.56				0.04	0.15	.79			
	D2 X attachment avoidance	0.19	.16	.24				-0.11	0.17	.52			
	Attachment X avoidance	0.17	.05	.002				0.07	0.06	.25			
3					.001	0.11	.89				.002	0.45	.64
	D1 X attachment anxiety X attachment avoidance	.01	.14	.10				-0.01	0.15	.95			
	D2 X attachment anxiety X attachment avoidance	.06	.13	.44				-0.12	0.14	.42			

Table 3. Hierarchical Regressions on the Impact of Attachment Priming Conditions and Trait Individual Differences in Attachment-Related Anxiety and Avoidance on Social-Goal Mediators in Study 2

Step	Predictor	Deficit-Reduction Goals						Growth-Oriented Goals					
		<i>B</i>	<i>SE</i>	<i>p</i>	ΔR^2	<i>F</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>	ΔR^2	<i>F</i>	<i>p</i>
1					.15	15.40	< .001				.04	3.45	.009
	D1 (Anxiety v Secure Prime)	-0.06	0.12	.62				0.14	0.12	.23			
	D2 (Avoidance v secure prime)	0.03	0.12	.82				-0.03	0.12	.83			
	Trait Attachment Anxiety	0.33	0.04	< .001				0.09	0.05	.05			
	Trait Attachment Avoidance	-0.10	0.05	.03				-0.16	0.05	.001			
2					.02	1.35	.24				.002	0.11	.99
	D1 X attachment anxiety	0.07	0.11	.51				0.03	0.11	.79			
	D1 X attachment avoidance	0.15	0.12	.19				0.04	0.12	.76			
	D2 X attachment anxiety	0.21	0.11	.05				0.003	0.11	.98			
	D2 X attachment avoidance	-0.01	.12	.91				-0.02	0.13	.87			
	Attachment X avoidance	0.01	.04	.77				0.02	0.04	.72			
3					.002	0.41	.66				.003	0.53	.59
	D1 X attachment anxiety X attachment avoidance	.005	.10	.96				0.08	.11	.47			
	D2 X attachment anxiety X attachment avoidance	.06	.13	.47				0.11	.10	.31			

Attachment Prime Manipulation

“We are interested in how creative people are when it comes to writing about others’ relationships. Below is a scenario describing a person’s relationship with their romantic partner. Take a minute to reflect on the following relationship scenario:”

Attachment-related anxiety condition:

[Target name] is constantly worried that his/her romantic partner will leave him/her. One day, [Target name]’s partner tells him/her they want to slow things down in the relationship.

Attachment-related avoidance condition:

[Target name] is reluctant to make a long-term romantic commitment. One day, [Target name]’s partner communicates that they want the relationship to get more serious.

Attachment-related security condition:

[Target name] is comfortable with and completely trusts his/her romantic partner. One day, [Target name]’s partner communicates that there need to be changes in their relationship.

“Next, write 4 keywords describing how [Target person] may feel in this scenario.”

“Now, using the keywords you wrote on the previous page, write for approximately 5 minutes about what you think might happen in the scenario. Specifically, describe [Target person]’s feelings, how [Target person] might approach the situation, and the outcome of the situation.”

Sentence prompts derived from:

Green, J. D., & Campbell, W. K. (2000). Attachment and exploration in adults: Chronic and contextual accessibility. *Personality and Social Psychology Bulletin*, 26(4), 452-461.

Belongingness Orientation Scale

The following measure is about your relationships with other people. Please rate the extent to which you agree with each statement.

1	2	3	4	5	6
Strongly	Moderately	Slightly	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Agree	Agree	Agree

My interpersonal relationships are important to me because...

- 1) ...I find it exciting to discuss with people on numerous topics.
- 2) ...I have a sincere interest in others.
- 3) ...I consider that the people I meet are fascinating.
- 4) ...they allow me to discover a lot about others.
- 5) ...they allow me to learn about myself.
- 6) ...it appeases me to feel accepted.
- 7) ...I need to feel accepted.
- 8) ...I don't want to be alone.
- 9) ...it gives me a frame of reference for the important decisions I have to make.
- 10) ...they fill a void in my life.

Lavigne, G. L., Vallerand, R. J., Crevier-Braud, L. (2011). The fundamental need to belong: On

the distinction between growth and deficit-reduction orientations. *Personality and Social Psychology Bulletin*, 37(9), 1185-1201.

Meaning in Life Questionnaire

Please take a moment to think about what makes your life and existence feel important and significant to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely	Mostly	Somewhat	Can't Say	Somewhat	Mostly	
Absolutely						
Untrue	Untrue	Untrue	True or False	True	True	True
1	2	3	4	5	6	7

1. I understand my life's meaning.
2. I am looking for something that makes my life feel meaningful.
3. I am always looking to find my life's purpose.
4. My life has a clear sense of purpose.
5. I have a good sense of what makes my life meaningful.
6. I have discovered a satisfying life purpose.
7. I am always searching for something that makes my life feel significant.
8. I am seeking a purpose or mission for my life.
9. My life has no clear purpose.
10. I am searching for meaning in my life.

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life

Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53, 80–93.

Experiences in Close Relationships Inventory (Short Form)

The following statements concern how you generally feel in relationships. We are interested in how you generally experience relationships, not just what is happening in a current relationship. Respond to each sentence by indicating how much you agree or disagree with it. Write the number in the space provided, using the following rating scale:

1 = if you strongly disagree with the statement.

2 = if you moderately disagree with the statement.

3 = if you slightly disagree with the statement.

4 = if you are neutral with the statement.

5 = if you slightly agree with the statement.

6 = if you moderately agree with the statement.

7 = if you strongly agree with the statement.

_____ 1. It helps to turn to my romantic partner in times of need.

_____ 2. I need a lot of reassurance that I am loved by my partner.

_____ 3. I want to get close to my partner, but I keep pulling back.

_____ 4. I find that my partner(s) don't want to get as close as I would like.

_____ 5. I turn to my partner for many things, including comfort and reassurance.

_____ 6. My desire to be very close sometimes scares people away.

_____ 7. I try to avoid getting too close to my partner.

_____ 8. I do not often worry about being abandoned.

_____ 9. I usually discuss my problems and concerns with my partner.

- _____ 10. I get frustrated if romantic partners are not available when I need them.
- _____ 11. I am nervous when partners get too close to me.
- _____ 12. I worry that romantic partners won't care about me as much as I care about them.

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