Self-Compassion Predicts Less Boredom: The Role of Meaning in Life

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[This manuscript was accepted for publication in

***Personality and Individual Differences*]**

Abstract

Boredom is a prevalent experience linked to poor well-being and negative societal outcomes. Building on the notion that sources of meaning in life can mitigate boredom, we examined whether self-compassion would be negatively associated with boredom and whether the elevated sense of meaning in life that self-compassion offers could explain this negative association. We tested these predictions at the trait and state level using self-report measures with three correlational studies. Specifically, in Study 1 ($N = 49$), we tested if trait self-compassion correlated negatively with boredom proneness. In Study 2 ($N = 265$), we investigated if this relationship was mediated by presence of meaning in life. In Study 3 ($N = 191$), we tested this mediational model for state experiences of self-compassion, meaning in life, and boredom. Correlational (SPSS) and mediational analyses (AMOS) were used to analyze the data. Consistently, we found negative associations between self-compassion and boredom (Studies 1-3). Further, presence of meaning in life mediated the relationship between self-compassion and boredom (Study 2 and 3). We conclude that self-compassionate individuals are less likely to experience boredom and that this is partially attributable to the elevated meaning in life they experience. The findings add to the notion that self-compassion, offering meaning in life, reduces boredom.

Keywords: boredom, self-compassion, meaning, well-being

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"The compassionate mind is like an elixir: It has the strength to turn adverse situations into beneficial circumstances" (Dalai Lama XIV)

1. Introduction

Boredom is a pervasive experience (Chin et al., 2017) that people try to avoid (Mikulas & Vodanovich, 1993; Moynihan et al., 2020). An established body of research conceptualizes boredom as a psychological meaning threat (Fahlman et al., 2009; Van Tilburg & Igou, 2012), reflecting that people tend to feel bored when they perceive what they are doing as meaningless (Chan et al., 2018). Recently, research has begun to demonstrate the benefits of drawing on sources of meaning in life (e.g., religiosity) to prevent and reduce boredom (Coughlan et al., 2019; Igou et al., 2021; Van Tilburg et al., 2019).

1.1 The Psychological Threat of Boredom

Boredom has been defined by Eastwood et al. (2012, p. 484) as an "aversive state of wanting but being unable to engage in satisfying activity." While the exact antecedents of the boredom experience remain uncertain, it is thought to arise due to a combination of cognitive and affective factors (Isacescu et al., 2017), in particular attentional (Eastwood et al., 2012; Danckert & Merrifield, 2018) but also motivational (Van Tilburg & Igou, 2012; Bench & Lench, 2013) factors. These factors can stem from both internal (e.g., sensation seeking) and external (e.g., a repetitive task) task characteristics (Fisher, 1993). Boredom can be conceptualized as a state or a trait (Fahlman et al., 2013; Farmer & Sundberg, 1986). State boredom refers to the transient experience of boredom in a given moment (Fahlman et al.,

2013; Van Tilburg & Igou, 2012). Trait boredom, typically referred to as boredom proneness, can be characterized as the frequency and intensity of which one is bored and especially the degree to which an individual perceives their life as boring (Farmer & Sundberg, 1986; Tam et al., 2021a; Vodanovich et al., 1991).

Initially, boredom was unduly dismissed as a trivial experience in scientific research (as discussed in Eastwood et al., 2012; Van Tilburg & Igou, 2017a), but has recently been elucidated as a complex construct that plays an important role in psychological and physical well-being (e.g., Sommers & Vodanovich, 2000). Boredom is an undesirable experience with an aversion so powerful that it can motivate the pursuit of negative experiences to escape it (Bench & Lench, 2019). If negative coping strategies successfully reduce state boredom (e.g., overeating; Moynihan et al., 2015), they can be positively reinforced through operant conditioning and evolve into a generalized response with damaging long-term consequences (Tam et al., 2021b).

Unresolved boredom can also become problematic. The trait-like experience of boredom proneness is associated with a myriad of objectionable psychological, physiological, and societal outcomes (Sommers & Vodanovich, 2000; Tam et al., 2021a) including, but not limited to, depression (Goldberg et al., 2011), impulsivity (Moynihan et al., 2017), aggression (Rupp & Vodanovich, 1997; Van Tilburg et al., 2019b), sadism (Pfattheicher et al., 2020), lack of physical exercise (Wolff et al., 2020), risk-taking (Kılıç et al., 2020), binge drinking (Biolcati et al., 2016), and loneliness (Chin et al., 2017). Boredom can lead to negative consequences in achievement settings (Pekrun et al., 2010; Pekrun et al., 2014) and clinical settings where it can impede successful rehabilitation from psychiatric and neurological conditions (Isacesu & Danckert, 2018; Newell et al., 2012).

Boredom is a distinct negative emotion involving a perceived lack of meaning and challenge (Van Tilburg & Igou, 2012). Lack of meaning has been consistently elucidated as a

typical characteristic of boredom (Barbalet, 1999; Van Tilburg & Igou, 2011, 2012). Consistent with the notion that humans have an innate need to maintain meaning (e.g., Heine et al., 2006), the lack of perceived meaning that boredom can evoke is a psychological threat to the self and thus motivates a desire to compensate for this perceived lack of meaning (e.g., Van Tilburg et al., 2013). There is a growing body of evidence to suggest that experiences that augment perceptions of meaning in life—such as positive perceptions of heroes, gratitude, and religiosity—can mitigate boredom experiences (Coughlan et al., 2017; Igou et al., 2021; Van Tilburg et al., 2019a). Consistently, a study in an educational setting found that creating personal meaning through a self-transcendent purpose can promote resilience and persistence to a boring learning task (Yeager et al., 2014). These studies build on the notion of fluid compensation (Heine et al., 2006), which states that strengthening meaning through psychological resources can buffer against psychological threats to the self, even if they do not address the threat directly. Emphasizing the relationship between boredom and meaning, this research will examine the role of self-compassion as a meaning source against boredom.

1.2 Self-Compassion as a Source of Meaning

Meaning in life has been defined as the extent to which one's life is perceived to be significant, purposeful, and coherent (King et al., 2006; King & Hicks, 2020; Martela & Steger, 2016). Studies have repeatedly shown that meaning in life is important to positive psychological functioning (Seligman, 2018). People strive to maintain and reestablish meaning through a variety of sources (Baumeister 1991; Heine et al., 2006; Steger et al., 2008). Conversely, experiences of meaninglessness impair psychological health (Mirowsky & Ross, 2003), and interventions that boost meaning in life are often used to reduce depressive symptoms (Breitbart et al., 2015), reiterating the importance of meaning for well-being.

The concept of compassion has existed in both Eastern and Western philosophies for centuries, from Aristotle's early writings (Aristotle, 1984) to Buddhism (Sangharakshita, 1991). In recent years, the notion of self-compassion, that is, compassion directed towards one's suffering, received increased attention (Neff, 2003b; Neff et al., 2019). According to Neff (2003a), self-compassion involves "being open to and moved by one's own suffering, experiencing feelings of caring and kindness toward oneself, taking an understanding, non-judgmental attitude toward one's inadequacies and failures, and recognizing that one's experience is part of the common human experience" (p. 224). This definition of self-compassion conceptualizes the construct into three components—self-kindness, common humanity, and mindfulness—that interact to enhance and engender a self-compassionate frame of mind (Dreisoerner et al., 2020; Neff, 2003a).

A growing body of research supports the psychological benefits of a self-compassionate disposition (MacBeth & Gumley, 2012; Zessin et al., 2015 for reviews). By treating one's setbacks and failures with kindness and understanding, people high in self-compassion are less likely to experience the psychological detriments of negative and self-threatening events (Leary et al., 2007). For example, self-compassion can weaken the depressive effects of long-term ostracism by protecting and promoting a sense of meaning in life (Jiang & Chen, 2020).

Self-compassion is associated with greater perceptions of meaning in life (Homan, 2018; Neely et al., 2009), presumably through various domains. The needs for belongingness and self-worth are central to maintaining a meaningful life (Baumeister, 1991; Heine et al., 2006). Self-compassion addresses these core needs by boosting one's self-image and increasing feelings of love and connection (Neff, 2003a; Lindsay & Creswell, 2014). Self-compassion is a more stable predictor of self-worth than self-esteem, another core need

(Heine et al., 2006), as it involves unconditional positive self-regard, where self-worth is assumed rather than evaluated (Neff & Von, 2008).

Importantly, self-compassion not only enriches the relationship with the self but with others too (Neff & Pommier, 2013). Treating oneself with compassion can mobilize helpful behavior towards others (Lindsay & Creswell, 2014), and having successful social connections is strongly linked to a meaningful existence (Baumeister & Leary, 1995; Post, 2011; Van Tongeren et al., 2016). Recent research suggests that magnifying perceptions of meaning in life can be efficacious in mitigating boredom, a meaning threat (Fahlman et al., 2009; Igou et al., 2021; Van Tilburg et al., 2019a). As self-compassion can minimize the effects of self-threatening events (Neff, 2003a; Leary et al., 2007) and bolster perceptions of meaning in life, we conceptualize it as a source of meaning that predicts lower levels of boredom. This is important as self-compassion is a malleable personality trait that can be adopted through different therapies, exercises, and meditations (Ferrari et al., 2019; Wilson et al., 2018) as a potential boredom mitigation strategy.

Based on this relationship between self-compassion and meaning in life, we pose that people who are high in self-compassion, through their bolstered sense of meaning in life, are less likely to experience boredom. Given the ample negative and widespread consequences of boredom (Sommers & Vodanovich, 2000; Tam et al., 2021a), this novel research aims to establish the malleable positive personality trait of self-compassion (Ferrari et al., 2019; Wilson et al., 2019) as a potential resource to increase meaning and mitigate boredom and its detriments to well-being.

1.3. The Present Research

We examined the relationship between self-compassion and boredom at the level of individual differences, both for traits and states. We expected a negative relationship between self-compassion and boredom and that it would be partly attributable to perceptions of

meaning in life. We hypothesized that self-compassion would negatively predict boredom (Hypothesis 1) and that this association would be statistically explained by a greater presence of meaning in life (Hypothesis 2) among those comparatively high in self-compassion. We tested these hypotheses in three correlational, cross-sectional studies. Specifically, in Study 1, we tested whether self-compassionate individuals are less prone to boredom, reflecting a negative association between self-compassion and boredom proneness. Study 2 looked at the role of the presence of meaning in life as an explanatory variable for the negative relationship between dispositional self-compassion and boredom proneness. In Study 3, we tested if state self-compassionate was negatively correlated with state boredom and if this relationship was mediated by greater state meaning presence. We assumed and tested that these psychological variables are functionally equivalent across the trait and state level. Data for the studies were collected in the period of December 2020 to March 2021. All studies received ethical approval from the Education and Health Sciences Research Committee at the University of Limerick.

2. Study 1

2.1 Method

2.1.1. Participants and Design

We performed a priori power analysis using G*Power (Faul et al., 2007). We required a sample of 46 participants to detect moderate correlations of $\rho = .35$, adopting a Type-I error $\alpha = .05$ (two-tailed), aiming for power $(1 - ß) = .80$. Moderate correlations were hypothesized between the variables in line with prior research on boredom as a function of a positive psychological strength (gratitude; Igou et al., 2021). Given the risk of potential dropouts and incomplete data associated with online studies (e.g., Arechar et al., 2018), we collected data from a larger participant pool. Accordingly, 59 undergraduate students at the University of Limerick were recruited via the psychology department's research participation system,

SONA, in return for one of three required course credits. Participants needed to be over the age of 18 and enrolled in a 1st year psychology module at the university to participate in the study.

Five participants were excluded for failing the initial attention check, four dropped out after completing demographic details, and one only completed the boredom measures, leaving 49 participants (35 female, 14 male) between the ages of 18 and 23 (M_{age} = 19.20, SD_{age} = 12.30) to complete the study. The study was hosted online by Qualtrics (www.qualtrics.com) and took approximately 5 minutes to complete. The majority of participants were Irish (85.8%), but other nationalities were also represented: American (n = 1), English (n = 1), Polish (n = 2), Portuguese (n = 1), and Ukrainian (n = 2). Participants were randomly assigned to one of two order conditions to control for the potential order effects of the measures[1].

2.1.2. Procedure and Materials

After giving informed consent, participants worked on an attention check in which they had to choose between two options of what they were being asked to do in the study ("*Read an article about the impact of nature on fitness"* or *"Ask questions about your experiences"*). Those who successfully passed the attention check ("*Ask questions about your experiences"*) reported their demographics relating to age, gender, and nationality. Participants who unsuccessfully completed the attention check were excluded from the study. They then filled out the self-compassion and boredom measures, which were presented in random order. Dispositional self-compassion was measured using the Self-Compassion Scale (Neff, 2003a; α = .89), a 26-item scale that covers self-kindness, common humanity, and mindfulness (e.g., "I try to be loving towards myself when I'm feeling emotional pain"; 1 = *almost never*, 5 = *almost always*). Thirteen of the items were reverse-scored (e.g., "I'm disapproving and judgmental about my own flaws and inadequacies"). Higher scores on this scale reflect higher levels of dispositional self-compassion (Neff, 2003a). The scale has good

internal validity and reliability (Finaulahi et al., 2021), and generalizability theory demonstrates that it reliably measures trait characteristics (Medvedev et al., 2021).

Boredom proneness was measured using two scales to ensure that any relationship with self-compassion was robust across measures (Van Tilburg et al., 2019). Participants worked on the Short Boredom Proneness Scale (BPS Short Form; Struk et al., 2017; α = .86), an 8-item scale (e.g., "I find it hard to entertain myself"; 1 = *strongly disagree*, 7 = *strongly agree*), followed by the Harthouse Boredom Proclivity Scale (HBPS; Van Tilburg et al., 2019a; α = .93), a four-item scale (e.g., "How prone are you to feeling bored?"; 1 = *never*, 7 = *all the time*). The final item differed in response by asking "Specifically, how often do you feel bored?" (1 = *once or twice a year*, 7 = *at least once a day*). High scores on both of these boredom measures reflect a high level of boredom proneness. The BPS Short Form and the HBPS, r = .77, p < .001, were combined to form one boredom proneness index (BPI) based on the rationale of Van Tilburg et al. (2019). Lastly, participants were thanked, debriefed, and rewarded with one course credit. Pearson correlation coefficients were employed to identify the correlations between our key variables using the statistical software package IBM SPSS Statistics.

2.2. Results and Discussion

Self-compassion was negatively correlated with BPI, r = -.47, p = .001, and both individual boredom proneness measures: BPS Short Form, r = -.45, p < .001, and HBPS, r = -.42, p = .003. These results indicate that boredom proneness is moderately, yet robustly, negatively associated with self-compassion. These correlations support our hypothesis that self-compassionate individuals experience less boredom. We applied sequential Holm-Šídák post-hoc corrected p-values to these results and all of the correlations remained significant (p < .05). Consistent with our general framework, the second study investigated if perceptions of meaning in life could account for this negative relationship.

3. Study 2

3.1. Method

3.1.1. Participants and Design

We required 163 participants to have a power of $(1 - \beta) = 0.90$ to detect indirect effects with a serial mediator (Schoeman et al., 2017) for moderate correlations of $r = .35$ (based on Igou et al., 2020), estimated with 1,000 replications using 20,000 Monte-Carlo draws and assuming a Type-I error of $\alpha = .05$ (two-tailed). We exceeded that sample size in accounting for potential dropouts associated with online studies. Participants had to be over the age of 18 and English speaking to be eligible to partake in the study. Three hundred and eighteen individuals were recruited via Amazon's Mechanical Turk (MTurk; www.mturk.com), a participant recruitment site that offers reasonably representative population samples (McCredie & Morey, 2019).

Fifty-three participants were excluded for failing the initial attention check, leaving 265 participants who completed an approximately 10-minute-long online questionnaire hosted on Qualtrics. Participants were awarded $0.36 for their participation, which we deemed appropriate for a brief correlational study based on M-Turk's standards of payments (Buhrmester et al., 2016). Of these participants (134 male, 129 female, 2 'other'), 97% identified as US American (remaining 3%: African American ($n = 1$), Asian American ($n = 1$), Canadian ($n = 1$), Iranian ($n = 1$), European American ($n = 1$), Native American ($n = 1$)) and were between the ages of 19 and 75 years ($M_{age} = 41.83$, $SD = 12.46$). The variables of interest were trait self-compassion (predictor), presence of meaning in life (mediator), and boredom proneness (criterion). Positive and negative affect were included as covariates.

3.1.2. Procedure and Materials

After giving informed consent, participants worked on the identical attention check as in Study 1. Successful participants then gave demographics details regarding their age,

gender, and nationality. Next, they completed the Self-Compassion Scale (Neff, 2003a) as in Study 1. Meaning in life was measured using the Presence of Meaning in Life subscale taken from the Meaning in Life Questionnaire (MLQ; Steger et al., 2006; α = .89), a 5-item scale (e.g., "I understand my life's meaning"), with one reverse-scored item, in which participants responded from 1 (*absolutely untrue*) to 5 (*absolutely true*). High scores on the subscale reflect greater levels of meaning in life. Boredom proneness was measured using the same two scales to form the BPI outlined in Study 1. BPS Short and HBP scores were highly correlated and were again combined to create the BPI.

We measured participants' positive and negative affect using the PANAS (Watson et al., 1988; α = .88), a 20-item scale with ten items relating to positive affect (e.g., "Indicate the extent to which you feel interested"; 1 = *very slightly or not at all,* 5 = *extremely*) and the latter relating to negative affect (e.g., "Indicate the extent to which you feel upset"; 1 = *very slightly or not at all,* 5 = *extremely*). Higher scores on each subscale present high levels of that type of affect. Lastly, participants were debriefed, thanked, and financially compensated for their participation.

Correlational analyses were conducted akin to Study 1. To evaluate if the negative association between self-compassion and boredom proneness can be statistically explained by presence of meaning in life, we conducted mediational analysis using AMOS structural equation modeling software (Arbuckle, 2014) with 5,000 bias-corrected bootstraps. We fitted a saturated structural equation model (SEM) to test our predicted model and account for variations in positive and negative affective states as separate processes.

3.2. Results and Discussion

3.2.1. Hypothesis 1: Self-Compassion and Boredom

As reflected in Table 1, self-compassion scores were negatively correlated with both BPS Short and HBP scores. There was a moderately strong negative correlation between

boredom proneness and self-compassion. Replicating the findings of Study 1, presence of meaning in life was moderately negatively associated with boredom proneness. Additionally, presence of meaning in life had a strong positive relationship with self-compassion.

Table 1

Correlation Matrix of Measures in Study 2

Variable	1	2	3	4	5	6	7
1 SC	1	.59**	-.46**	-.48**	-.38**	.40**	-.46**
2 MP-MLQ		1	-.38**	-.35**	-.35**	.53**	-.34**
3 BPI			1	.94**	.94**	-.06	.70**
4 BPS Short				1	.77**	-.04	.71**
5 HPS Scale					1	-.08	.60**
6 PA						1	-.03
7 NA							1

Note. SC = Self-Compassion Scale; MP-MLQ = Presence of Meaning in Life subscale from the Meaning in Life Questionnaire; BPI = aggregate score of BPS Short and HPS scale; BPS Short = Shortened Boredom Proneness Scale; HPS scale = Harthouse Boredom Proclivity Scale; PA = Positive Affect; NA = Negative Affect.

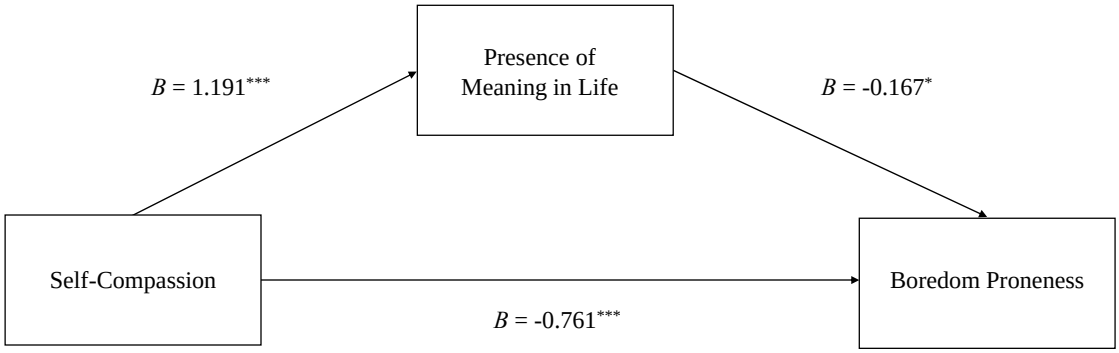
*p <.05, **p <.001. We applied sequential Holm-Šídák post-hoc corrected p-values to these results, and all of the significant correlations remained.

3.2.2. Hypothesis 2: Self-Compassion and Boredom via Meaning

Self-compassion significantly positively predicted meaning presence, *B* = 1.191, *SE* = 0.100, *p* <.001, 95% CI [1.004, 1.379]. Meaning presence was significantly negatively associated with boredom proneness, *B* = -0.167, *SE* =0.070, *p* = .022, 95% CI [-0.314, -0.024]. The total effect of self-compassion on boredom proneness was significant, *B* = -0.961, *SE* = 0.116, *p* =.001, 95% CI [-1.175, -0.721]. It was comprised of a significant direct effect of self-compassion on boredom proneness, *B* = -0.761, *SE* = 0.147, *p* <.001, 95% CI [-1.055, -0.478] and a significant indirect effect through meaning presence, *B* = -0.199, *SE* = 0.084, *p* = .019, *95*% CI [-0.366, -0.032] (see Figure 1). We conclude that self-compassionate individuals are less prone to boredom as they experience greater meaning in life. We also ran alternative models with our key variables[2].

Figure 1

Path Model for Study 2



Note. Self-compassion, presence of meaning in life, and boredom proneness.

Sequential indirect effect: B = -0.199, SE = 0.084, p = .019, 95% CI [-0.366, -0.032].

$^{*}p \leqslant .05$, $^{**}p \leqslant .01$, $^{***}p \leqslant .001$.

3.2.3. The Role of Affect

We added affect as a variable in the model to determine that boredom in particular benefits from the meaning that self-compassion imbues, rather than negative affect, due to their high correlation (r = .70). Self-compassion was entered as the predictor variable, meaning presence as the mediator variable and boredom proneness, negative affect, and positive affect as parallel and correlated outcome variables. The SEM analysis conducted with AMOS 5,000 bias-corrected bootstraps revealed that self-compassion predicted boredom proneness through meaning presence, B = -0.199, SE = 0.086, p = .023, 95% CI [-0.363, -0.033] as expected. Self-compassion also predicted positive affect through meaning presence in the opposite direction, B = 0.302, SE = 0.057, p < .001, 95% CI [0.202, 0.422]. However, there was a non-significant association between self-compassion and negative affect through

meaning presence, B = -0.087, SE = 0.056, p = .083, 95% CI [-0.195, 0.010]. It appears that boredom specifically benefits from the perception of meaning presence that self-compassion imbues, rather than negative affect (see Figure A, Appendix A). We conclude that the relationship between self-compassion and boredom is unlikely explained by affective components. We applied post-hoc corrections to these results[3].

4. Study 3

4.1. Method

4.1.1. Participants and Design

We required 166 participants to have a power of $(1 - \beta) = 0.90$ to detect indirect effects with one mediator (Schoeman et al., 2017) for moderate correlations of r = .35 (see Study 2), estimated with 1,000 replications using 20,000 Monte-Carlo draws and assuming a Type-I error of α = .05 (two-tailed). To control for potential measurement order effects, participants were randomly assigned to one of six order conditions[4]. We exceeded the sample size given the order variation and anticipated dropouts. One hundred and ninety-six participants were recruited via MTurk, with the same eligibility criteria as Study 2. Five participants were excluded for failing the initial attention check leaving 191 participants to complete an online questionnaire on Qualtrics, taking approximately 10 minutes to complete. Participants who successfully completed the survey received $0.41, in line with standard M-Turk payments (see Study 2). Of these participants (100 female, 91 male), 95.6% identified as US American (remaining 4.4%: Bahamian (n = 1), Asian Indian (n = 1), English (n = 1), African American (n = 1), Singaporean (n = 1), Native American (n = 1), Asian American (n = 1)), and were between the ages of 20 and 79 (M_{age} = 42.01, SD =13.80).

4.1.2. Procedure and Measures

After giving informed consent, participants reported their age, gender, and nationality. They completed an attention check (see Study 1) and consequently filled out scales

measuring state self-compassion, boredom, and meaning in life. Participants completed the State Self-Compassion Scale Long Form (SSCS-L; Neff et al., 2021), a measure of global state self-compassion based on the Self-Compassion Scale (Neff, 2003a) consisting of 18-items (e.g., "I'm being kind to myself", 1 = *not at all true for me*, 5 = *very true for me*) with nine reverse-scored items (e.g., "I'm feeling all alone right now"). The scale had good reliability (α = 0.78) and validity (Neff et al., 2021). We measured the state form of presence of meaning in life with a modified version of the 5-item subscale from the MLQ (Steger et al., 2006; see Igou et al., 2021; e.g., "In this moment, I understand my life's meaning"; 1 = *absolutely untrue*, 7 = *absolutely true*; α = 0.96).

Participants completed the Hunter et al. (2016) 8-item short version of the Multidimensional State Boredom Scale (MSBS-SF; Fahlman et al., 2013; e.g., "Time is passing slower than usual"; 1 = *strongly disagree*, 2 = *strongly* agree) which has high validity (Donati et al., 2019) and reliability (α = .91). To ensure we explicitly measured state boredom we added a 3-item measure by Van Tilburg et al. (2013; "How bored do you feel at the moment?", "How boring would you consider the tasks you just completed?", "Do you experience boredom right now?"; 1 = *not at all*, 7 = *very much*; α = 0.93). We created an index for state boredom (SBOR-I; α = 0.93) by combining these two highly correlated measures (see Table 2; Igou et al., 2021). High scores on these state measures represent high levels of state self-compassion, meaning, and boredom. Participants lastly completed positive and negative affect items using the PANAS (Watson et al., 1988; see Study 2) and were fully debriefed, thanked, and financially compensated for their participation.

Correlational analyses were conducted in the same manner as Study 1 and 2. Akin to Study 2, to evaluate if the negative association between state self-compassion and state boredom can be statistically explained by state presence of meaning in life, we conducted a mediational analysis and an SEM analysis using AMOS (Arbuckle, 2014) with 5,000 bias-

corrected bootstraps. The SEM analysis allowed us to examine the role of positive and negative affect.

4.2. Results and Discussion

4.2.1. Hypothesis 1: Self-Compassion and Boredom

As shown in Table 2, correlational analyses revealed that state self-compassion was negatively associated with both of our state boredom measures, MSBS-SF and our 3-item state boredom measure (OurSB). State self-compassion was strongly negatively associated with SBOR-I. State presence of meaning in life was strongly positively associated with state self-compassion, and negatively associated with SBOR-I. The results of Study 3 add to the findings of Study 1 and 2 by suggesting that the negative relationship between self-compassion and boredom holds not only on the trait level but also on the state level.

Table 2

Correlation Matrix of Measures in Study 3

Variable	1	2	3	4	5	6	7
1 SSCS-L	1	.52**	-.62**	-.43**	-.64**	.41**	-.60**
2 SMP-MLQ		1	-.58**	-.37**	-.62**	.67**	-.40**
3 SBOR-I			1	.85**	.97**	-.49**	.63**

4 OurSB	1	.71**	-.38**	.63**
5 MSBS-SF		1	-.49**	.64**
6 PA			1	-.28**
7 NA				1

Note. SSCS-L = State Self-Compassion Scale Long Form; SMP-MLQ = State Meaning Presence subscale adapted from the Meaning in Life Questionnaire; SBOR-I = aggregate score of OurSB and MSBS-SF; OurSB = Our State Boredom Scale; MSBS-SF = Multidimensional State Boredom Scale-Short Form; PA = Positive Affect; NA = Negative Affect.

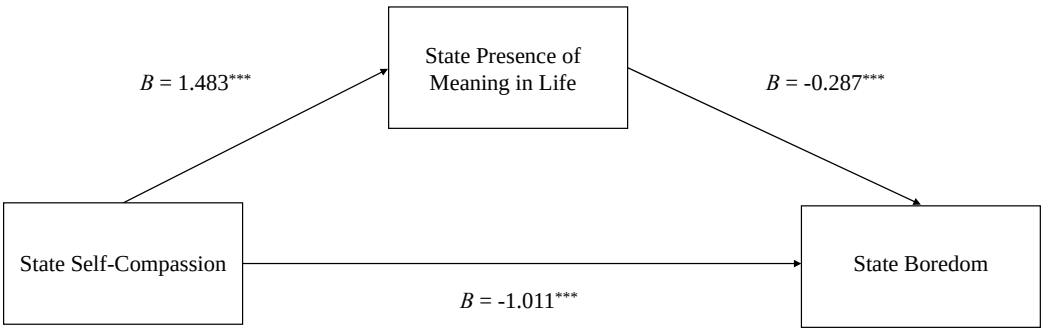
*p <.05, **p <.001. We applied sequential Holm-Šídák post-hoc corrected p-values to these results, and all of the significant correlations remained.

4.2.2. Hypothesis 2: Self-Compassion and Boredom via Meaning

State self-compassion predicted greater state presence of meaning in life, B = 1.483, SE = 0.175, p = .001, 95% CI [1.124, 1.802] and less state boredom when state meaning was controlled for, B = -1.011, SE = .144, p < .001, 95% CI [-1.320, -0.681]. State meaning presence also predicted less state boredom, B = -0.287, SE = 0.051, p < .001, 95% CI [-0.395, -0.179]. The total effect between state self-compassion and state boredom was significant, B = -1.437, SE = 0.146, p = .001, 95% CI [-1.714, -1.141]. Importantly, there was a significant indirect effect between state boredom and state self-compassion through state meaning presence, B = -0.426, SE = 0.095, p < .001, 95% CI [-0.644, -0.265] (see Figure 2). We also ran alternative models with our key variables[5]. In addition, we controlled for order to account for any priming effects (see Appendix B). Consistent with our predictions, state self-compassionate predicts lower levels of state boredom through greater momentary perceptions of meaning in life.

Figure 2

Path Model for Study 3



Note. State self-compassion, state presence of meaning in life, and state boredom. Sequential indirect effect: B = -0.426, SE = 0.095, 95% CI [-0.644, -0.265].

$^{*}p \leqslant .05$, $^{**}p \leqslant .01$, $^{***}p \leqslant .001$.

4.2.3. The Role of Affect

Using the SEM analysis, self-compassion was entered as a predictor, meaning presence as the mediator, and state boredom, positive affect, and negative affect were included as separate outcome variables. The analysis revealed that state self-compassion significantly predicted less state boredom through state meaning presence as predicted, B = -0.426, SE = 0.095, p < .001, 95% CI [-0.644, -0.265]. State self-compassion predicted greater positive affect through state meaning presence, B = 0.462, SE =0.079, p < .001, 95% CI [0.079, 0.321]. Consistent with Study 2 findings, there was a non-significant association between state self-compassion and negative affect through state meaning presence, B = -0.086, SE = 0.059, p = .121, 95% CI [-.0213, 0.023]. We conclude that specifically state

boredom benefits from the meaning in life that state self-compassion imbues, not negative affect, consistent with Study 2 (see Figure B, Appendix A). We applied post-hoc corrections to these results[3].

5. General Discussion

Boredom involves a perceived lack of meaning and challenge (Van Tilburg & Igou, 2012) whilst self-compassion is an inherently meaningful experience and can transform a potentially negative experience into a positive one (Neff, 2003b). We hypothesized that by imbuing life with meaning, self-compassion would predict lower levels of boredom. Specifically, we tested whether self-compassion was associated with less boredom (Hypothesis 1) and if this relationship was mediated by meaning in life (Hypothesis 2). We operationalized these variables on both the trait (Study 1 and 2) and state (Study 3) level and tested these proposed relationships accordingly.

In Study 1, confirming our predictions, dispositional self-compassion was associated with lower levels of boredom proneness. Study 2 replicated and added to these findings by showing that meaning presence partially accounted for the relationship between self-compassion and boredom proneness. That is, self-compassionate individuals appear to be less prone to boredom as they experience a greater presence of meaning in life. Study 2 also demonstrated that specifically boredom proneness benefits from the presence of meaning in life that self-compassion imbues, rather than negative affect. Study 3 confirmed that state self-compassion is negatively associated with state boredom through state meaning presence. Even transient experiences of self-compassion have the potential to lessen momentary experiences of boredom. Across measures and contexts, the relationship between self-compassion and boredom was consistent, independent of order, and is unlikely explained by affective components. Together, the studies support our central theoretical argument that by increasing perceptions of meaning in life, self-compassion is linked to lower boredom

experiences. Self-compassionate individuals can accurately appraise situations and life events (Leary et al., 2007). Still, it appears that through the kindness and understanding they offer to themselves, they do not experience the feelings of meaninglessness that others might and consequently experience less boredom.

5.1. Contributions and Implications

People long for and infuse their lives with meaning in many ways (Heine et al., 2006; King & Hicks, 2020; Van Tilburg & Igou, 2013), with self-compassion being one potential avenue. Our findings strengthen the notion that obtaining and protecting a sense of meaning is a common, everyday practice (Heine et al., 2006; King & Hicks, 2020) relevant to the regulation of boredom (Van Tilburg & Igou, 2012; Van Tilburg et al., 2019a). The present research contributes to a deeper understanding of the functionality of boredom in the context of meaning-regulation. It strengthens the theoretical perspective that treats boredom as a threat to meaning (Moynihan et al., 2020; Van Tilburg & Igou, 2012) and the consequent notion that sources of meaning can ameliorate boredom (Coughlan et al., 2017; Van Tilburg et al., 2013; Van Tilburg & Igou, 2017b). This work supports the previously validated theoretical research that posits that sources of meaning in life can reduce and prevent boredom (Coughlan et al., 2017; Igou et al., 2021; Van Tilburg et al., 2019a). Van Tilburg et al. (2019) found that religious individuals experience less trait and state boredom as they experience greater meaning in life. Similarly, in Coughlan et al. (2017) positive perceptions of heroes were linked to less boredom proneness through meaning. The present studies suggest that self-compassion, a malleable quality, also has the potential to dampen boredom experiences on both the state and trait level. Importantly, this work goes beyond previous research not only by looking at a different source of meaning than previously examined but also by demonstrating that these effects hold when all variables are operationalized at the trait and state level.

Our finding that self-compassion acts as a psychological resource against boredom adds to the body of literature that posits that self-compassion is beneficial for well-being (Zessin et al., 2015) and for coping with psychological threats to the self (Lindsay & Creswell, 2014). Given the lamentable association between boredom proneness and well-being, their negative relationship may be a mechanism through which self-compassion enhances well-being. Consistent with previous literature, self-compassion weakens the effects of negative experiences, in this case, boredom (MacBeth & Gumley, 2012; Neff et al., 2007).

Self-compassion is thought to offer the benefits of self-esteem without its pitfalls, i.e., it offers a stable sense of self-worth (Neff & Von, 2008). Nevertheless, self-esteem is closely tied to people's perceptions of meaning in their lives (Heine et al., 2006) and is likely to play a role here. We expect that low self-esteem individuals would benefit the most from practicing self-compassion and consequently experience less boredom as individuals who are high in self-esteem are likely to have a strong perception of meaning in their lives. However, because self-compassionate individuals do not need to engage in social comparison or self-evaluation to maintain a sense of self-worth (Neff, 2011), we expect that self-compassion leads to more stable and long-term benefits on boredom than self-esteem.

Our studies employed different sampling strategies by sampling undergraduate students at an Irish university (Study 1) and two representative US samples (Study 2 and 3). Given the diversity of the samples and the wide age ranges represented across the studies, we believe that these are robust associations that can be generalized across populations. Furthermore, we were mindful to account for the potential confounding effects of the order of measures and affect across studies. By modeling positive and negative affect as separate processes, we showed that the psychological processes that we propose are not influenced by affect. In addition, by controlling for the order of the measures, we successfully demonstrated that these associations hold regardless of order.

5.2. Limitations and Future Directions

Despite boredom's prevalence and strong inverse relationship with well-being, society is paying the consequences of psychological literature trivializing the concept until recent years (Eastwood et al., 2012; Van Tilburg & Igou, 2017a), resulting in a lack of general interventions or proactive mitigation strategies to deal with boredom, despite ample pleas (e.g., Fahlman et al., 2009; LePera, 2011; Weybright et al., 2020). Now that the negative consequences of chronic boredom, which are severe and plentiful, are apparent (e.g., Goldberg et al., 2011), a coherent framework of how people cope with boredom in healthy and productive ways is overdue. While we acknowledge that this research only offers evidence for the benefits of self-compassion on boredom at the level of individual difference, self-compassion is a modifiable personality trait (Ferrari et al., 2019), meaning that individuals can acquire a self-compassionate disposition through various meditations and exercises (Germer & Neff, 2013; Wilson et al., 2018; e.g., https://self-compassion.org).

We examined the relationships of self-compassion, meaning in life and boredom as dispositional and temporary individual differences. It is important to note that the conclusions we draw from the present work are based on correlational designs. One must practice caution in drawing causal conclusions about the effects of self-compassion on boredom. Further research would benefit from using experimental inductions of self-compassion. Similarly, longitudinal studies investigating the effects of self-compassion interventions (e.g., Smeets et al., 2014) on boredom and meaning could be fruitful to mitigate boredom but also boost meaning in life, a technique often used for treating depression and enhancing well-being (e.g., Breitbart et al., 2015) — this will be the focus of our ongoing research efforts in this domain.

The current work contains participants who are mainly from Western countries (Ireland, Study 1; USA, Study 2 & 3). Self-compassion is derived based on Buddhist thought

(Neff, 2003a), naturally making it an Eastern philosophical concept. Research suggests that self-compassion is not tied to individualistic or collectivistic orientations, but may vary in strength due to specific cultural features of countries, e.g., high levels of negative self-relevant emotions (Neff et al., 2008). Future studies could incorporate a more culturally diverse sample to distinguish the role culture may play in the relationship between boredom and self-compassion.

In Study 1 participants were awarded course credit for their participation, whilst in Study 2 and 3 participants were financially compensated via MTurk. We acknowledge that there may have been differences in engagement between Study 1 and Study 2 and 3 due to greater accountability (i.e., necessary credit to complete the module) and reduced anonymity in Study 1 as it draws on a relatively small pool of undergraduate psychology students. Nonetheless, the negative correlation between dispositional self-compassion and boredom proneness found in Study 1 was replicated in Study 2. Thus, it seems unlikely the nature of compensation had a significant impact on the findings.

Notably, all three studies took place during the Covid-19 pandemic. Covid-19 restrictions, such as stay-at-home orders and social distancing mandates, lead to a significant decrease in social interaction with ample consequences for people's health and well-being (Pfefferbaum & North, 2020). The experience of boredom increased globally during the pandemic (Westgate et al., 2021) and self-compassion appeared to play an important role as a buffer to Covid-related stressors (e.g., Andel et al., 2021). Nevertheless, all of the current findings are in line with our theoretical predictions and similar research conducted before the Covid-19 pandemic (Igou et al., 2021; Van Tilburg et al., 2019). Furthermore, increases in mean levels of boredom do not necessitate a difference in correlation between boredom and other variables. We are confident that the associations between self-compassion and boredom

identified in these studies would be replicated outside of a pandemic setting; however, future research may endeavor to investigate these results in a post-pandemic era.

6. Conclusion

We proposed and found that self-compassion predicts less boredom through greater perceptions of meaning in life. In three studies, we consistently found that self-compassion is negatively associated with boredom, and this relationship was mediated by meaning in life. We conclude that self-compassionate individuals are less likely to experience boredom, and even a momentary experience of self-compassion might serve as beneficial in lessening state experiences of boredom. Importantly, state and trait measures of boredom are consistently related to self-compassion through meaning. This research underlines the centrality of meaningful experiences for people who are otherwise vulnerable to boredom and the situations that typically facilitate the boredom experience.

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Footnotes

[1] Order 1: Boredom, Self-Compassion (n = 31). Order 2: Self-Compassion, Boredom (n = 19).

[2] For Study 2, we tested alternative models of our key variables using SEM in AMOS to test which order of predictors explained the most variance. First, we tested dispositional self-compassion as the predictor, meaning presence as the mediator, and boredom proneness as the outcome variable, r^2 = .228. The model with boredom proneness as the predictor, self-compassion as the mediator, and meaning presence as the outcome had an r^2 of .364. The model with boredom proneness as the predictor, meaning presence of the mediator, and self-compassion as the outcome explained the most variance, r^2 = .415. As our proposed model explained less than alternative models, we used PROCESS (Hayes, 2018) to control for affect. When we entered positive and negative affect as covariates our model had an r^2 of .520. Alternatively, r^2 = .462 for the boredom proneness, meaning presence, self-compassion model and .480 for the boredom proneness, self-compassion, meaning presence model when affect was controlled for. We can conclude that our model best explains the variance when affect is considered.

[3]We applied post-hoc corrections for multiple testing to the results of the SEM model, including positive and negative affect. We used sequential Holm-Šídák post-hoc corrected p-values (for 5 tests; Abdi, 2007). All significant effects remained significant following this post-hoc correction (p < .05).

[4] Order 1: State Self-Compassion, State Meaning Presence, State Boredom (n = 35). Order 2: State Self-Compassion, State Boredom, State Meaning Presence (n = 30). Order 3: State Meaning Presence, State Self-Compassion, State Boredom (n = 41). Order 4: State Meaning Presence, State Boredom, State Self-Compassion (n = 19). Order 5: State Boredom,

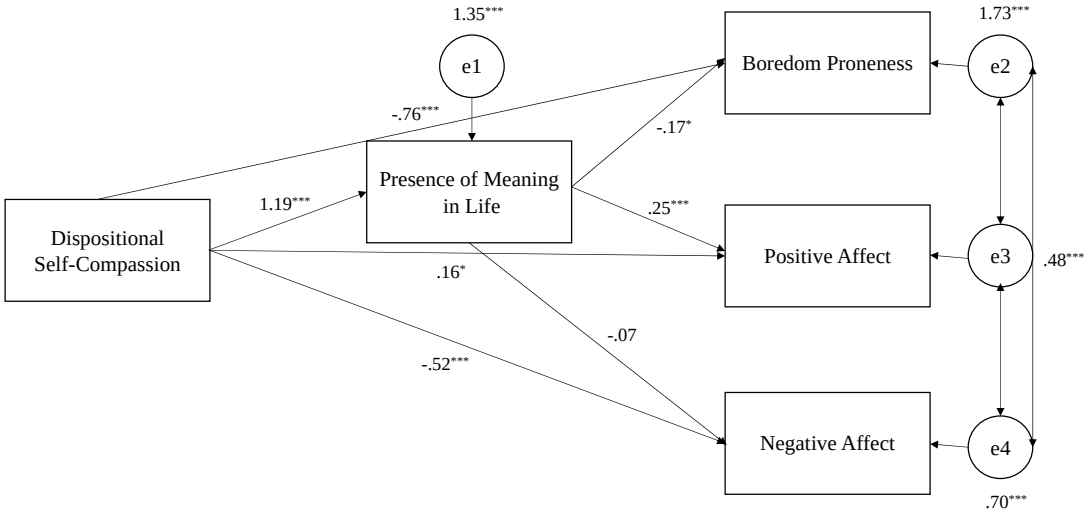
State Self-Compassion, State Meaning Presence (n = 34). Order 6: State Boredom, State Meaning Presence, State Self-Compassion (n = 32).

[5] We tested alternative models using SEM in AMOS to identify which order of predictors explained the most variance for Study 3. Our model with state self-compassion as the predictor, state meaning presence as the mediator, and state boredom as the outcome variable explained the most variance, r^2 = .472. We also tested the model with state boredom as the predictor, state meaning presence as the mediator, and state self-compassion as the outcome variable, r^2 = .425. Lastly, we tested the model with state boredom as the predictor, state self-compassion as the mediator, and state meaning presence as the outcome variable, r^2 = .379.

Appendix A

Figure A

Study 2 Structural Equation Model with Positive and Negative Affect

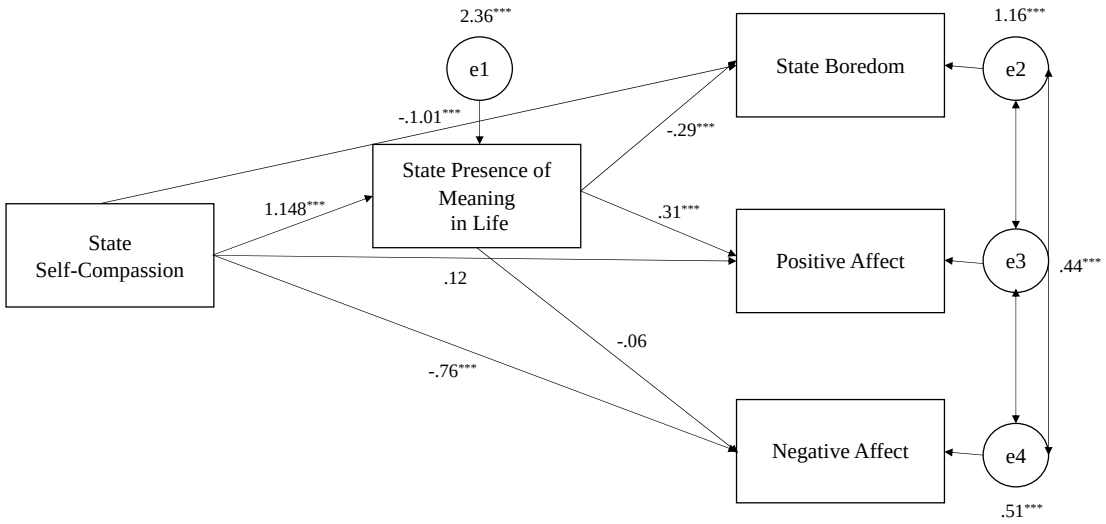


Note. This structural equation model predicts boredom proneness, positive affect, and negative affect from dispositional self-compassion with mediating effects of presence of meaning in life.

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

Figure B

Study 3 Structural Equation Model with Positive and Negative Affect



Note. This structural equation model predicts state boredom, positive affect, and negative affect from state self-compassion with mediating effects of state presence of meaning in life. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Appendix B

Order

The order of the measures did not confound our specified model. Order did not have a significant effect on state meaning presence, B = -0.075, SE = 0.064, p = .239, nor state boredom B = -0.031, SE = 0.045, p = .492. We also used PROCESS by Hayes (2018; Model 4) with 10,000 bootstraps to test the indirect association between state self-compassion and state boredom through state meaning presence, which remained even when order was included as a covariate, B = -0.430, SE = 0.096, 95% CI [-0.639, -0.357].