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'If you're uncomfortable, go outside your comfort zone': A novel behavioral 'stretch' intervention supports the well-being of unhappy people

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ABSTRACT

An increasingly large body of research in social psychology has underscored the power of brief situational interventions in promoting purposeful change. The present research contributes to the literature on positive psychology interventions (PPIs) by testing a novel volitional intervention that encourages people to engage in activities 'outside their comfort zone.' Participants were randomly assigned either to a condition that encouraged them to engage in an activity outside of their comfort zone over the following two weeks or to a control condition that encouraged them to keep a record of their daily activities. The intervention boosted the life satisfaction of people who were relatively less happy at baseline, with exploratory analyses tentatively suggesting benefits strongest among people who went outside their comfort zone by helping others. Discussion centers on the potential of behavioral 'stretch' interventions to promote positive change and well-being among people dissatisfied with their life.

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Introduction

The pioneer of humanistic psychology, Abraham Maslow, once wrote that growth can be 'seen as an endless series of daily choices and decisions, in each of which one can choose to go back toward safety or forward toward growth' (Maslow, 1966, p. 22). How and when people make changes in their lives to move toward growth is an important practical and scholarly puzzle. Some personal change processes are volitional, such as in psychotherapy (e.g., Prochaska, 1999), while others are less intentional, such as radical or intense change due to conversion (Zinnbauer & Pargament, 1998) and what has been referred to as *quantum change*, a radical and profound personal transformation triggered by an insightful realization (Miller & C'de Baca, 2001) or trauma (Tedeschi & Calhoun, 1996). In addition, life transitions and adversities can catalyze changes in individuals' beliefs and values (Laura A King et al., 2000) and may serve, for some, as turning points that alter their trajectory (Fiori et al., 2004; Russo-Netzer & Davidov, 2020). Positive experiences, such as peak or flow experiences, in which people lose a sense of self because they are fully integrated in an activity or mission, can also function as life-altering events (e.g., Calhoun & Tedeschi, 2006; Csikszentmihalyi, 1990). Whatever the cause, the possibility of lasting and far-reaching change is a recurrent hope in the psychological literature. What seems to be a common theme, however, is that nearly all cases of personal transformation require some act of courage, even small, in order to 'move forward toward growth.' Understanding the situational triggers for such acts of courage and subsequent transformation will aid in the development of interventions that help people in need, in particular those who are dissatisfied with how they are currently leading their lives.

An increasingly large body of research in social psychology has demonstrated the power of brief situational interventions in promoting purposeful change (see, Cohen et al., 2017; Walton & Wilson, 2018). For example, randomized experiments have shown that short activities, such as reflecting on core values, can lessen the destructive effects of stress on performance and improve achievement (Cohen & Garcia, 2008; Garcia & Cohen, 2013; Walton & Wilson, 2018). A large body of evidence also shows that a wide range of activities inspired by social psychological theory can instigate enduring improvements in life satisfaction (Ko et al., 2021; Lyubomirsky & Layous, 2013; Lyubomirsky et al., 2005; Margolis & Lyubomirsky, 2020). Specifically, positive psychology interventions (PPIs) are purposeful

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Supplemental data for this article can be accessed here

activities designed to increase people's life satisfaction and flourishing (Seligman et al., 2005). They often help people to overcome the phenomenon of 'hedonic adaptation' (Frederick & Loewenstein, 1999), the tendency to habituate to positive (and negative) life circumstances and experiences (Lyubomirsky, 2011; Lyubomirsky et al., 2005; Sheldon & Lyubomirsky, 2004, 2006). PPIs include a wide range of interventions, such as replaying positive life events (Lyubomirsky et al., 2006), focusing on character strengths (Seligman et al., 2005), practicing gratitude (Emmons & McCullough, 2004), performing acts of kindness (e.g., Dunn et al., 2008; Layous et al., 2012; Lyubomirsky et al., 2011), writing about and affirming core values (Cohen & Sherman, 2014), and practicing self-reflection (King, 2001; Lyubomirsky et al., 2006). People who undertake such activities tend to show improvements in life satisfaction that persist for weeks or even months, relative to people who complete neutral control activities. Many of the positive effects of PPIs can be seen as emerging from their tendency to broaden the perceived psychological resources of the self, which then permits greater exploration and challenge seeking (Cohen & Sherman, 2014; Fredrickson, 2001).

Meta-analyses of PPIs show that they can be effective at improving life satisfaction and even decreasing depressive symptoms. PPIs can serve in both clinical and nonclinical settings as preventive, accessible, and non-stigmatizing tools (Bolier et al 2013; Sin & Lyubomirsky, 2009). Other insights gained from recent meta-analyses point to the importance of moderators that facilitate the effectiveness of PPIs, such as the type and duration of the intervention, its timing, and the degree to which the intervention is tailored to participants' motivations, needs, and constraints (Carr et al.,2020; Cohen et al., 2017; Sin & Lyubomirsky, 2009).

The present research contributes to the literature on PPIs by testing a novel volitional intervention that encourages people to engage in activities 'outside their comfort zone,' thus directly fostering the kind of volitational courage that Maslow described. We refer to it as a *behavioral stretch intervention* because it prompts people to engage in activities that they would normally be reluctant to do, in effect stretching themselves beyond their normal comfort zone. We hypothesized that engaging in brief activities outside one's comfort zone would be psychologically beneficial, enhancing life satisfaction. By engaging in an activity at the edge of their comfort, and realizing that it is within their capacity, people may gain confidence in their ability to thrive in challenging circumstances. The mechanisms through which such benefits occur include mechanisms based in self-perception theory (Bem, 1972) and self-affirmation theory (Steele, 1988; see also, Cohen & Sherman, 2014). By freely choosing to act in a courageous manner, people may perceive themselves to *be* courageous. This self-perception may, further, affirm self-integrity – people's view of themselves as 'morally and adaptively adequate' (Steele, 1988). Such self-affirmations have been shown to be psychologically empowering (Steele, 1988; see also, Cohen & Sherman, 2014). Additionally, insofar as people successfully navigate a challenging circumstance by going outside their comfort zone, they may feel a heightened sense of self-efficacy about overcoming novel challenges in their lives (Bandura, 1997). They may also come to endorse a growth mindset, a belief that their abilities can be expanded through effort and practice. A growth mindset has been shown to be beneficial to resilience and well-being (Dweck, 2006). Finally, people who go outside their comfort zone may discover new opportunities in their environment for experiencing positive affect and coping with adversity, including social support (Cohen et al., 2017).

The idea of comfort zones is prevalent in social discourse, popular media, and literature, as well as in therapeutic settings and change models. Yet, in the scientific literature, it has yet to be explored and operationalized empirically. One of the few lines of inquiry to address the idea of comfort zones is research on outdoor education or survival programs such as Outward Bound. Research in this context suggests, 'Through involvement in experiences that are beyond one's comfort zone, individuals are forced to move into an area that feels uncomfortable and unfamiliar – the groan zone. By overcoming these anxious feelings and thoughts of self-doubt while simultaneously sampling success, individuals move from the groan zone to the growth zone' (Luckner & Nadler, 1997, p. 20).

But transcending one's perceived comfort zone involves uncertainty and discomfort. People are strongly motivated to feel in control and competent (Becker, 1964; Frankl, 1963), and they prefer clarity and predictability over ambiguity and uncertainty (e.g., Heine et al., 2006; see also, Gordon, 2003; Van Den Bos, 2001). They are threatened by the experience of unpredictable happenings, especially those that pose a challenge to their needs for competence, control, and predictability (Heine et al., 2006; Proulx & Heine, 2008; Ryan & Deci, 2017). Indeed, uncertainty and unpredictability can threaten self-integrity (Steele, 1988; see also, Cohen & Sherman, 2014). Extensive research suggests that when individuals are faced with decisions, they tend to maintain the status quo and to refrain from enacting new courses of action (Samuelson & Zeckhauser, 1988). Maintaining the default requires less mental effort and entails less psychological threat than does change (Eidelman & Crandall, 2009). Aversion

to going outside one's comfort zone may also result from other processes well-known to cognitive and social psychologists, such as loss aversion and regret avoidance (Anderson, 2003; Kahneman et al., 1991). According to this research, people tend to prefer the status quo to potential change, because the potential costs of a change often loom psychologically larger than its potential benefits (Moshinsky & Bar-Hillel, 2010).

However, overcoming a challenge outside of one's comfort zone, rather than avoiding it, can strengthen self-integrity as people attain greater competence and confidence in navigating uncertainty and unpredictability (see, Cohen & Sherman, 2014; Lepper & Woolverton, 2002; Vygotsky, 1978). Although going outside one's comfort zone may be stressful, it is unlikely to be as aversive as people imagine it will be (Gilbert, 2009). Moreover, if people are guided to create their own challenge, they are likely to choose activities that are psychologically safe and feasible for them. Accordingly, participants in our intervention did not engage in a predefined activity outside their comfort zone. Rather, they created their own personalized activity that was consistent with their goals and constraints. Thus, they tailored the content of the intervention themselves.

Our study experimentally tests, for the first time, an intervention aimed at facilitating people's ability to go outside their comfort zone. The intervention provides people with the impetus and opportunity to manifest courage and 'move forward toward growth' in their ordinary lives.

Our primary dependent measure is life satisfaction. We acquired baseline levels of this variable, permitting us to assess both change in life satisfaction and whether the effects of the intervention differed as a function of baseline life satisfaction. We predicted that our behavioral stretch intervention would benefit the well-being of people relatively low in baseline life satisfaction. People high in life satisfaction may already be engaging in activities that support their happiness, thus limiting their ability to benefit further from such intervention (cf., Lyubomirsky & Layous, 2013; Sheldon & Lyubomirsky, 2020). Having more psychological resources, they may also be engaging already in activities that stretch themselves beyond their comfort zone (cf, Cohen & Sherman, 2014; Fredrickson, 2001). Ceiling effects may also limit the extent to which they benefit from novel PPIs.

Additionally, because participants in our intervention self-tailored their activity and reported on what they did, we were able to examine, on an exploratory basis, the types of activities they chose to engage in and which ones, if any, were associated with the greatest benefit.

Method

Participants

A heterogeneous community sample consisting of 167 adults (73.7% female) from varied locations across Israel were recruited for the study. Their age ranged from 18 to 67 years (M = 29.0, SD = 8.8).

The final sample used for the quantitative analysis ranged from 141 to 146 participants depending on the specific outcome and time point see, (Figure 1). We recruited as many participants as we could, given our resources. The final sample provided roughly 75% power to detect an effect of d = .5, a medium effect size by conventional benchmarks. This effect size seemed reasonable given that our outcome was not absolute level of life satisfaction (which would be subject to a great deal of noisiness) but *change* in life satisfaction, which, in effect, allows us to use each participant as his or her control, reducing the error term on which the estimated effect size is based.

To obtain a broad diversity of participants, we advertised in different forums and social networks on the internet (e.g., Drozd et al., 2014), inviting people to participate in a study aimed at exploring human experiences over a period of several weeks. The sample was diverse in terms of age, allowing the study to extend beyond previous reliance on undergraduate samples, which often have limited age and education ranges.

The final sample of 146 participants who provided *either* time 2 (t2) or time 3 (t3) outcome data ranged in age from 18 to 67 years (M = 29, SD = 8.8). Additionally,74% identified as female, 26% as male; 93% were Jewish; and 78% identified as secular.

Unrestricted randomization was employed by tossing a fair coin for each participant to determine their condition assignment, with no dependence or restrictions based on prior allocations. Each participant had an equal probability of being assigned to the intervention or to the control group. Participants who completed the study received as compensation an online gift voucher valued at approximately $15.

Procedure

Given the task involved in the present study (performing activities outside of one's perceived comfort zone), the study was conducted online, in order to allow participants to take part in the comfort of their own 'natural habitat' rather than in a laboratory. The observation period for the experiment was three weeks. All instructions and questionnaires were administered in Hebrew. The concept of 'out of your comfort zone' is commonly used and understood in Hebrew.

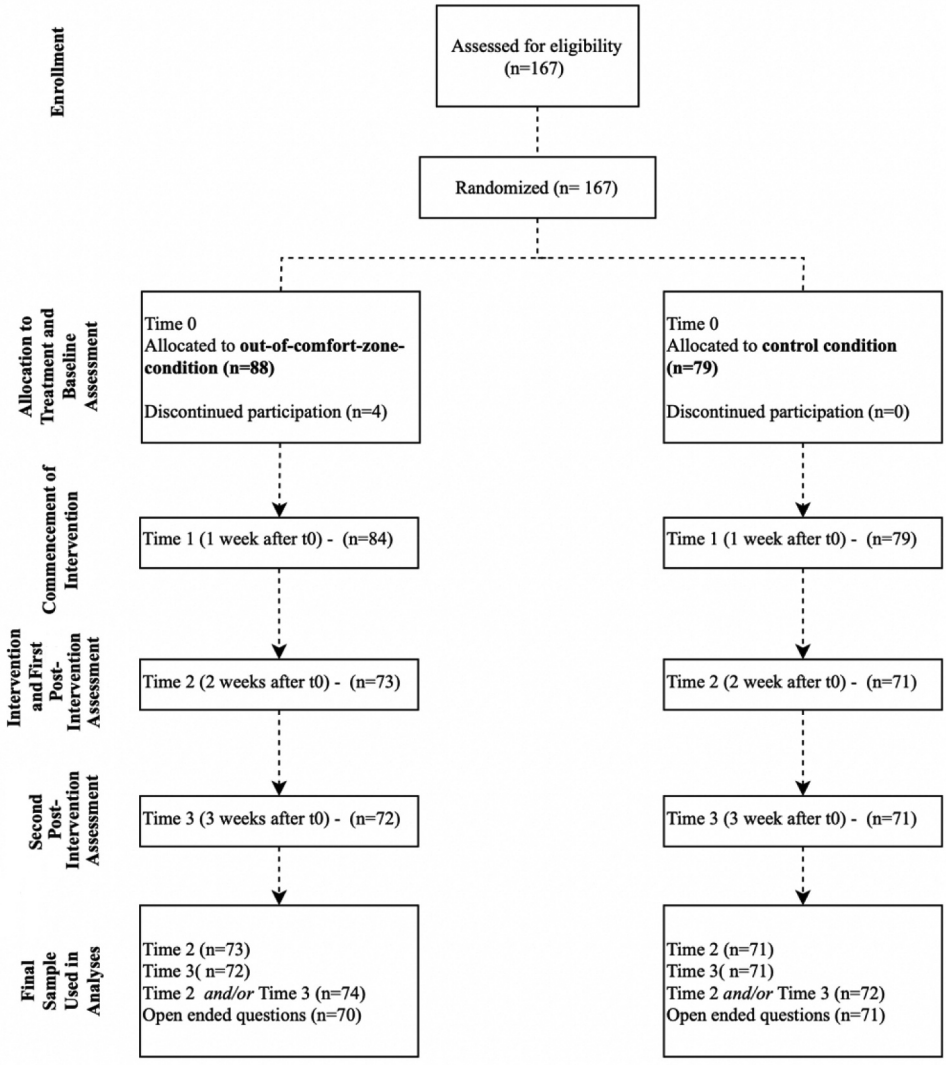

Figure 1. Flow of participants through each stage of the study.

At the beginning of the first week, designated Time 0 (t0), participants completed a pretest questionnaire assessing their baseline life satisfaction. At this time, each individual was randomly assigned to experimental condition. At the beginning of the next week, Time 1 (t1), they received the instructions for their experimental conditions.

Participants in the out-of-comfort-zone intervention group read the following prompt:

> During this week, choose one day to do something surprising that is different from what you normally do; something different that is 'out of your comfort zone.' It can be something you have wanted to do for a long time but haven't had a chance to do, like taking up a new challenge, or something that is 'opposite to your character/nature' (or the way you perceive yourself). It can be something small or big, by yourself or with other people.

By contrast, participants in the control group read the following prompt:

> During this week, choose one day and keep track of your daily activity related to what you normally do in your everyday life that day. Just write down the factual information about what you did. Do not alter your routine in any way; simply keep track of what you do.

The instructions for the control group were based on control tasks used in previous studies (e.g., Kruse et al., 2014; Layous et al., 2013).

The same instructions were repeated the following week. During the two weeks of the intervention, participants documented their experiences and responses to our instructions. While the control group was asked to describe a day in their life for two weeks, the intervention group documented their

experiences, thoughts, and feelings after completing the behavioral stretch task of their choice over each of the two weeks. They also answered open-ended questions about the task, how they chose it, the effort and courage it required, and how performing it made them feel.

Two weeks after the baseline assessment and after their exposure to the two intervention prompts, at t2, participants in both groups completed the first post-intervention assessment of their life satisfaction.

Three weeks after baseline, at t3, participants in both groups once again filled out the same assessment of life satisfaction, as well as responding to open-ended questions regarding possible insights from their experience in the previous two weeks.

Figure 1 presents the flow of participants through the two arms of the study. At baseline (t0), 167 participants completed the pretest questionnaire. Before moving to the next phases, participants were randomly assigned either to the intervention group (n = 88) or to the control group (n = 79). After completing the pretest questionnaires, 4 participants from the intervention condition decided to drop out of the study (n = 84). At the t2 assessment, two weeks after the baseline point, 11 of the remaining participants from the intervention group and 8 participants from the control group did not complete the post-intervention measure, yielding a total of 144 participants at that timepoint for the quantitative analysis. An additional 3 participants from the intervention group did not respond to the quantitative assessment at t3, three weeks after the baseline, but two of the participants from the intervention group who had failed to respond at t2 now responded at t3. This yielded 143 participants for the quantitative analysis of t3 outcomes and a total of 146 participants who provided *either* t2 or t3 quantitative assessments. For the open-ended responses, there were a total of 141 participants who provided data. Analyses were conducted on all available observations for a given timepoint. As a result, degrees of freedom vary slightly in analysis.

There was no differential attrition by condition. Of the 88 participants in the intervention condition present at baseline (t0), a total of 73 continued to t2 and a total of 72 participants continued to t3 (83% and 82%, respectively). Of the 79 participants in the control condition present at baseline, a total of 71 continued to both t2 and t3 (90%). A few more participants in each condition did not respond to the open-ended queries, yielding a total of 71 participants in the control condition and 70 in the intervention condition for these measures. Attrition did not vary significantly by condition for the quantitative measurements at t1 and t2, though there was some borderline differential attrition by condition for the open-ended responses, (χ^2 (1,167) = 1.68, p = .20), (χ^2 (1,167) = 2.20, p = .14), and (χ^2 (1,167) = 3.38, p = .066), respectively. The percentage of participants who provided *either* t2 or t3 quantitative assessments did not vary by condition either (χ^2 (1,167) = 1.88, p = .17).

The baseline life satisfaction of the participants who did not provide a post-intervention quantitative assessment of their life satisfaction at t2 or t3 was higher than it was among those who provided a response at t2 or t3, t(165) = 2.38, p = .018. But, importantly, this pattern did not vary by condition, as evidenced by a nil interaction between experimental condition and whether subjects provided life satisfaction data or not, F(1,163) = 0.35, p = .55. This result suggests that the participants who left the study were similar in both conditions.

Measures

Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin 1985)

This scale measures the extent to which individuals judge their lives to be satisfactory. Using a 7-point scale (1 = strongly disagree, 7 = strongly agree), participants indicated the extent they agreed or disagreed with five items, including 'The conditions of my life are excellent' and 'I am satisfied with my life' (Cronbach's α's = 0.87–0.88).

Open responses

Participants were also asked to record their responses to a free-response questions about their experience. Specifically, for both weeks of the intervention, participants in the intervention condition were asked to describe in their own words the out-of-comfort-zone activity they chose to do, and why they chose this particular activity. At the end of the intervention period (t3), after the final assessment of their life satisfaction, they were asked the following open-ended questions: 'How did you experience the last two weeks of the study–what did you think and feel?', 'Why did you choose to perform the tasks?', and 'What enabled you to perform the activity?' Participants in the control condition were asked only to report the activities they did and and, like the intervention-treated participants, to describe their thoughts and feelings with respect to the last two weeks of the study.

Coding of open responses

We undertook, on an exploratory basis, an assessment of the types of activities that participants engaged in and the psychological experience and impact of these activities. Beyond being informative in and of itself, these codings also enabled us to assess, again on an exploratory basis, whether particular types of activities were more effective than others at improving life satisfaction. We coded the open responses from the 70 participants in the intervention group and 71 participants in the control group who responded to the prompt related to the first intervention or control activity. Each participant's response was evaluated by two trained coders independently, each blind to the hypothesis of the research.

First, the coders evaluated the content of the activities reported by participants in the intervention group (e.g., physical activity, learning, self-care, volunteering and helping others) and the activities reported by the control group participants (e.g., daily activities such as leisure, work/studies/everyday tasks, food-related tasks).

An additional coding category served as a manipulation check, and assessed the level to which the participants' descriptions reflected the experience of having gone *outside their comfort zone*. The coders were instructed to identify to what degree the activity described by the participants seemed to be experienced as unusual or as a 'stretch' beyond participants' ordinary routine or personality. Responses were coded on a scale ranging from 0 (*not at all*) to 1 (*to some extent*), 2 (*to a moderate extent*), or 3 (*very much*).

Next, following a standardized protocol, the coders assessed participants' responses to the first open-ended question at t3, related to their thoughts and feelings following the activity or activities they engaged in. The participants' descriptions were coded based on categories that, we thought, would tap into the psychological experience of going outside one's comfort zone. These categories were: *courage* (the extent to which the participants expressed feelings of courage), *affirmation* (the degree to which the participants expressed self-pride and feelings of self-worth), *happiness* (the degree to which the participants expressed happiness, contentedness, and satisfaction), *stress* (the degree to which the participants expressed having felt stress), *fear* (the degree to which the participants expressed fear), *negative emotions* (i.e., the degree to which the participants used expressions that conveyed negative emotions), *effort* (the degree to which the participants conveyed having put effort into the activity), *positive emotions* (the degree to which the participants used expressions that conveyed positive emotions), and *boredom* (the degree to which the participants expressed boredom).

Next, the coders zeroed in on intervention-treated participants' responses to the second open-ended question regarding *why* they had chosen to perform the specific activity they had planned for themselves. (Control participants were not asked this question or the next one.) We refer to this category as the 'psychological function' of the activity. *Exploration* refers to the motivation to acquire new experiences (e.g., 'I chose to go to an opera show for the first time ever. I could not believe I would enjoy opera'); *facing a fear* refers to the motivation to overcome fear (e.g., 'I chose to go with my daughter to an insect museum, to challenge myself to deal with a stressful phobia I have'); *self-care* refers to the motivation to care for oneself (e.g., 'I chose to get a massage because I work so hard and I finally wanted to do something for myself'); *self-assertion* refers to the motivation to stand up for oneself (e.g., 'I chose to speak up in front of an audience', 'I chose to ask for a salary increase'); *doing good* refers to the motivation to do good and help others (e.g., 'I chose to volunteer to help students with hearing loss'); and *dealing with a challenge* refers to the motivation to overcome a difficulty (e.g., 'I chose to create a new schedule to deal with my heavy workload in work and life and not having free time'). The psychological-function categories were coded on a two-point scale, with 0 signifying that the motivation was not mentioned, 1 signifying that the motivation was mentioned.

Finally, the coders assessed intervention participants' responses to the third open-ended question regarding what enabled them to perform the activity (and again evaluated the entirety of control participants' responses for similar themes). This was labeled as 'facilitators,' because these were factors that facilitated their ability to perform the activity. *External commitment* relates to an external factor (e.g., 'Having a clear goal and framework enabled me to get there,' 'Being committed to the task made me to try harder'). *Courage* motivated some of the activities (e.g., 'I'm glad I had the courage to do it,' 'I had the initiative to plan and execute my plans'). *Having an open mind* referred to situations where the participants' ability to be open to new ideas and experiences led them to perform the activity (e.g., 'I chose an unusual step for me,' 'It is a spontaneous one-moment thought expressed in action'). *Thinking of others* refers to thoughts about how other people, and concerns about them, facilitated the completion of the activity (e.g., 'It gave me an opportunity to transcend my personal needs and to give her a bit of encouragement'; 'It helped me to realize that I'll improve their confidence and make them happy by doing that'). These categories were

again assessed on a 2-point scale, with 0 signifying that the facilitator was not mentioned, 1 signifying that the facilitator was mentioned.

The coders sorted the responses into the various content categories, achieving strong inter-rater reliability: Kappa = 0.90 for types of activity, 0.78 for perceived function, and 0.82 for motivational facilitator. Before analysis, we reviewed the assessments of the two coders, and any disagreement between them was resolved by an independent third coder, whose 'vote' resolved the disagreement between the two.

Results

Random assignment was successful. There was no significant effect of condition on baseline life satisfaction among the sample of 144 participants at the t2 assessment, t (142) = 1.82, p = .071, or the 143 at the t3 assessment, t (141) = 1.85, p = .067. Gender was balanced across conditions, χ^2 = 0.73, p = .39. Although there was a slight, nonsignificant imbalance in baseline life satisfaction, any effect of this was controlled through its use as a covariate in all analyses.

Manipulation check

According to the coders' assessments, participants engaged in tasks more outside their comfort zone in the intervention group than in the control group (*Ms* = 1.75 vs. 0.13, respectively, on the relevant 0–3 scale), t (139) = 13.90, p < .001, d = 2.35. (Degrees of freedom vary because, as noted in the Method section, only 141 participants provided open-ended responses). Specifically, only 11% of participants in the control condition engaged in an activity that was judged to be at least a little 'outside of their comfort zone' (i.e., above a 0), while 94% of participants in the intervention condition did so.

Quantitative analyses

The main outcome was the difference between post-intervention life satisfaction and pre-intervention or baseline life satisfaction. Higher scores represent greater positive change. There were two outliers in the regression model, one in each condition. One had a change score with a Studentized residual of 3.7 at both post-intervention timepoints, the other 4.51 and 4.88 at the first and second post-intervention timepoints, respectively. We Winsorized each of these to the next most extreme outcome to minimize the disproportionate influence of outliers.

We conducted a linear regression on the dependent measure of life satisfaction. We contrast coded condition (−1 = control, +1 = treatment) and mean-centered on zero baseline life satisfaction (by subtracting the mean from each participant's score; Judd et al., 2011). We then regressed life satisfaction at the later timepoints on condition, baseline life satisfaction, and their interaction. All simple effects tests of condition were estimated at ±1 standard deviations on baseline life satisfaction. See Table S1 for means and standard deviations at each timepoint and Table S2 for zero-order correlations. Degrees of freedom vary, because, as noted, there were a total of 144 participants at t2, 143 at t3, and 146 who completed *either* t1 or t2 assessments.

For Time 2 (two weeks after baseline) life satisfaction, there was a significant main effect of baseline life satisfaction (b = −.40, t(140) = −6.96, p < .001), as higher baseline scores were associated with less improvement in life satisfaction (i.e., a relatively smaller change score, presumably due to regression to the mean), and, most importantly, a significant interaction between condition and baseline life satisfaction (b = −.14, t (140) = −2.43, p = .016). For participants high in baseline life satisfaction (i.e., 1 standard deviation [SD] above the baseline mean), there was no effect of condition (b = −.161, t, t (140) = 1.60, p = .11). But for participants low in baseline life satisfaction (1 SD below the baseline mean), there was a trend for a positive effect (b = .19, t (140) = 1.86, p = .065). To achieve the effect size for this latter effect, we divided the estimated condition effect on the change score (.38, obtained by doubling the contrast-coded condition effect), and divided it by the pooled standard deviation of the change score (.85). This yields a d of .45. See Table S3 for a summary of regression model predicting life satisfaction (time 2).

For Time 3 (three weeks after baseline) life satisfaction, there was again the same main effect of baseline life satisfaction (b = −.30, t (139) = −6.20, p < .001) and a significant interaction between condition and baseline life satisfaction (b = −.13, t (139) = −2.73, p = .007). Here, the effect of condition was again not significant for participants high in baseline life satisfaction, (b = −.13, t = −1.46, p = .15), but significant and positive for participants low in baseline life satisfaction (b = .21, t(139) = 2.40, p = .018). Using the pooled standard deviation for this change score (.71), we obtain an effect size of d = .59. See Table S4 for a summary of regression model predicting life satisfaction (time 3).

Taking the average of the available data over the two timepoints yields the same interaction (b = −.14, t (142) = −2.94, p = .041) and the same positive effect for

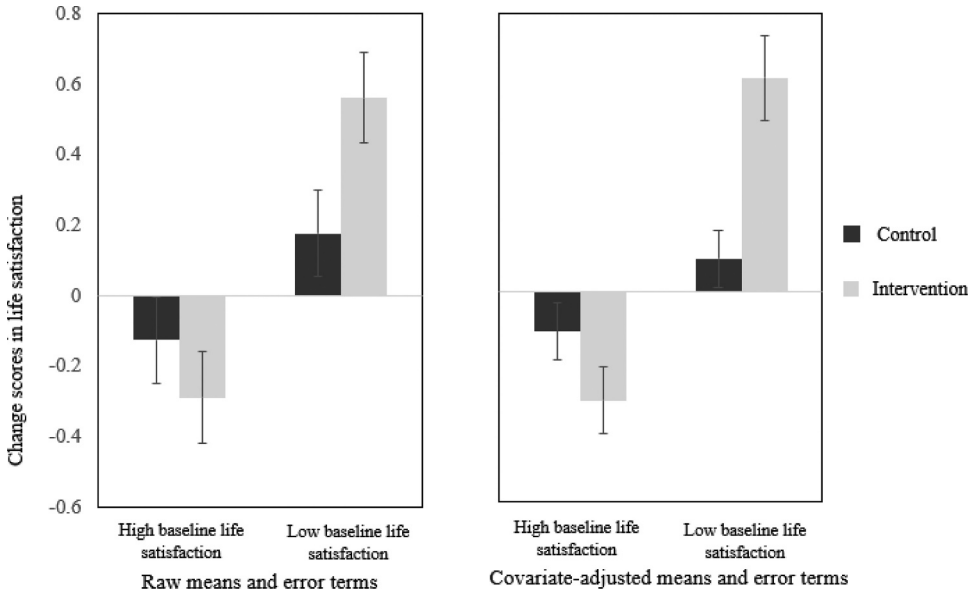

Figure 2. Change scores for participants low versus high in baseline life satisfaction, as determined by a median split.
Note. Change in life satisfaction as a function of baseline life satisfaction. Scores represent the difference between the average of the two post-intervention assessments and the baseline assessment. If only one post-intervention time point is available, its value is used. The right panel represents covariate-adjusted means and standard errors.

participants low in baseline life satisfaction, (b = .19, t (142) = 2.35, p = .02). Using the pooled standard deviation (.69) for this change score, we obtain an estimated effect size of .55.

Figure 2 displays the change scores for participants low versus high in baseline life satisfaction, as determined by a median split.

An alternative way to describe these results is illustrative. In the control condition, participants' baseline life satisfaction strongly predicted their life satisfaction at the study's conclusion (r = .81), accounting for 66% of the variance in their final life satisfaction score. This association was weakened in the intervention condition (r = .63), accounting for 40% of the variance in their final score. The difference between these correlations was significant, z = 2.26, p = .024. In other words, the intervention weakened the relationship between baseline life satisfaction and subsequent life satisfaction, and, it seems, made low life satisfaction a less influential driver of subsequent life satisfaction.

Analysis of open responses

Type of activity

Tables 1 and 2 display the types of activities and their frequency for participants in the intervention condition and participants in the control condition, respectively, for the first intervention. Because participants in the control group often reported several activities per day, there were more activities than participants in this condition. The most common intervention activity was physical activity (27% of the activities).

The following two excerpts from reports of intervention group participants' chosen activities illustrate in detail the types of activities that people engaged in (here in the category of *volunteering and helping others*):

> For some time now we, as a family, have wanted to serve as a foster family for a child in need or a lone soldier, especially as an example for our children of the importance of helping others in need. Unfortunately, there was always something that got in the way such as lack of time or other obligations. This study was a good opportunity to finally do it. I decided to be proactive and contacted the official agency. It was such an amazing experience. It made me feel proud of myself. I know that I can take responsibility and act on the things that matter to me, my values. I can make a difference. [Male, age 35]

> I consider myself an introvert, and I usually prefer to avoid facing challenges. However, the experience of having to face myself and to move away from my comfort zone made me question my boundaries and my automatic thinking … Specifically, I challenged myself to visit an elderly and lonely neighbor. I wanted to do this for a long time but hesitated … I didn't expect to like it, but it turned out to be a very nice surprise. I learned that I actually like to surprise and challenge myself. It made me realize that helping others makes me feel good and that I'd like to continue introducing new and different things into my life, however small. [Female, age 42]

Table 1. Content and frequency of activities of intervention group (Time 1).

Content of Activity	Frequency of Activities	Cumulative Percentage of Activity Frequencies	Excerpts from Participant Reports
Physical activity	19	27.14	'I chose to practice yoga. This is something I've never done.'
Learning	8	38.58	'I've decided to learn a new language.'
Self-care	7	48.58	'I met with a friend for breakfast.' 'I bought myself something new.' 'I challenged myself to go to therapy.'
Work	6	57.15	'I've decided to ask for a raise.'
Relations/dating	4	62.86	'I went out to a movie with someone for the first time.' 'I've decided to take the chance and finally leave my partner after five years.'
Volunteering and helping others	4	68.57	'I had really long hair, and I decided to get a short haircut and donate my hair.'
Daily routine	4	74.28	'I took my daughter to kindergarten. Since the kindergarten is a 25-minute walk from our house, I always take a bus there. I arrived at the station with her, and instead of waiting there I just walked.'
Participating in a social event	4	79.99	'As a person who loves quiet and does not connect to places where there are too many people and noise, I chose to participate in the university opening event.'
Family time	4	85.70	'To make it easier for my family I decided to prepare the holiday meal instead of them.'
Food-related	3	89.99	'I chose to try to bake because it was something I always shied away from.'
Hobby	3	94.28	'I chose to start learning to play guitar.'
Travel	2	97.14	'I chose an unusual step for me and booked a flight abroad for next week.'
Court	1	98.57	'I had to speak to the judge and explain my arguments.'
Medical	1	100	'I'm pregnant and it gets time to do sugar testing. There is nothing that frightens me more than needles. This time I had to go alone I decided to go for it and do the blood tests'.
Total	70		

Table 2. Content and frequency of activities of control group (Time 1).

Content of Activity	Frequency of Activities	Cumulative Percentage of Activities' Frequencies	Excerpts from Participant Reports
Leisure time with others (partner, family, friends)	23	20.35	'I met with a friend for dinner, we sat and talked.'
Work/studies/ everyday tasks	20	38.05	'I was doing phone and emails that are related to my work.'
Organizing	18	53.98	'I woke up at 7:30 a.m., got dressed, went to the bathroom and brushed my teeth.'
Food-related tasks	17	69.02	'I had toast for breakfast.'
Leisure time alone (TV, music)	16	83.18	'Watching a movie on TV.'
Sports	7	89.38	'I went for a workout at the gym.'
Rest	6	94.69	'I went to bed to rest.'
Household tasks	6	100	'I arranged the house - laundry, doing dishes.'
Total	113		

Note. The total count in this condition exceeds the number of participants (n = 71), because each participant could engage in multiple activities.

The psychological experience of the intervention

Table 3 presents the means, standard deviations, and t values for the condition differences along the key coded variables derived from the first open-ended question regarding the participants' thoughts and feelings following the activity or activities they engaged in. These included how much the activity described by each group was outside the participant's comfort zone, the amount of positive and negative emotions evoked, and the degrees of courage, effort, boredom, affirmation, happiness, fear, and stress expressed. The two conditions differed on all these variables, with the intervention group higher on all except boredom, for which control participants were higher.

Three findings are noteworthy. First, the intervention was experienced not as uniformly positive but as emotionally mixed: Participants in the intervention expressed more fear, stress, and negative emotion than did participants in the control group – but they also expressed more positive emotions, happiness, affirmation, and courage. Second, consistent with our theoretical

Table 3. Means, standard deviation, and T-Test results for intervention and control groups.

Coded Category	Control Group		Intervention Group				
	M	*SD*	M	SD	t	df	d
Out of comfort zone	.13	.41	1.75	.89	13.90***	139	2.35*
Courage	.00	.00	1.30	1.10	9.85***	139	1.67*
Affirmation	.24	.61	1.51	1.00	9.01***	139	1.53*
Happiness	.15	.46	1.50	1.18	8.99***	139	1.52*
Stress	.11	.06	1.09	1.13	6.56***	139	1.11*
Fear	.00	.00	.84	1.19	5.91***	139	1.00*
Negative emotions	.20	.58	.97	.99	5.61***	139	.95*
Effort	.42	.82	1.31	1.07	5.56***	139	.94*
Positive emotions	.84	.72	1.55	1.07	4.65***	139	.78*
Boredom	.32	.68	.02	.13	−3.58***	139	−.61*

Note. Control group code = 0, *n* = 71; intervention group code = 1, *n* = 70. Effect sizes (d) are based on the mean difference between conditions divided by the pooled standard deviation. Levene's correction for unequal variance applied to tests of courage, fear, and stress. Additionally, for variables in which no variance was obtained in the control group, non-parametric tests yield the same statistically significant results.

argument that stretch activities are courageous and thus self-affirming, the largest effects of the intervention (beyond the manipulation check) were on expressed courage and affirmation, as well as on happiness. Third, control-group participants expressed no courage or fear in the day-to-day activities that they logged, based on the coders' assessment. Not one of these participants expressed any courage or fear (i.e., above 0 on the coders' mean assessment), compared with 70% and 41%, respectively, of participants in the treatment condition.

Psychological function and facilitators of intervention activity

Table 4 displays the psychological function frequencies of the chosen activities for the intervention group, based on the coding of the second open-ended question regarding *why* they chose to perform the specific activity they had planned for themselves. 'Exploration' was the most frequently mentioned function (35.7% of responses).

Table 5 presents the frequencies for the perceived facilitators for the intervention group, based on the coding of the third open-ended question regarding what enabled them to perform the activity. 'Courage' was the most frequently mentioned facilitator (40% of responses).

Exploratory analyses of which activities promote most benefit

The exploratory analyses of the coders' ratings indicated that there was one kind of activity that appeared to be particularly beneficial – helping others. When analyzing the content of the activities, the one found to be associated with the highest life satisfaction was *volunteering and helping others*, with a mean improvement in life satisfaction of 1.10 (SD = 1.54), relative to the change in the other categorized responses of 0.07 (SD = .89). (No inferential tests were performed due to the small counts in these categories.) The category of activity associated with the next highest level of life satisfaction was *participating in a social event* (e.g.,participating in a crowded event that the participant otherwise wouldn't have attended) at 0.80 (SD = 1.66). Interestingly, the most common activity – *physical activity* (i.e., trying out a new activity such as meditation, yoga, adventure or extreme sports) – which 19 participants (27%) selected, was associated with negligible improvement in life satisfaction (M = .03, SD = .95).

When we looked at the 'psychological function' of the activity, the category with the highest change score was *doing good* (M = 0.46, SD = 1.36, n = 7), which differed significantly from the change scores for the remaining categories (M = .09, SD = .90, n = 61), with baseline life satisfaction controlled, t (65) = 2.07, p = .042. Interestingly, the most common function, *exploration*, was associated with modest improvement in life satisfaction (M = .29, SD = 1.18). (Counts are slightly altered due to some participants not completing the quantitative measures.)

The final category, pertaining to what facilitated their task (i.e., what led or motivated the participant to perform the specific task they chose), yielded a similar pattern. The category with the highest change score was *thinking of others* (M = .52, SD = 1.48, n = 6), which once again differed from all remaining categories (M = .09, SD = .89, n = 62), t (65) = 2.48, p = .016. The category with the next highest change score was *external commitment* (having an accountability buddy, having to report to someone, the task being necessary, etc.) (M = .12, SD = .77). By contrast, the most common facilitator, *courage*, was associated with only modest gains in life satisfaction (M = .10, SD = .90).

These analyses are exploratory and should be regarded as highly tentative because of the small number of participants who engaged in prosocial activities. But they suggest that though the intervention had a positive impact overall, in particular for those low in baseline life satisfaction, the activity that was among the most rare – volunteering and helping others – was the most powerful.

Discussion

This article presents a novel behavioral stretch intervention and some preliminary results suggestive of its efficacy. Findings suggest that the intervention boosted the life satisfaction of people who had relatively low life satisfaction, and it did so over a meaningful period of time – two weeks.

However, the intervention did not help people who were originally high in life satisfaction. Why was this? It is possible that ceiling effects limited the amount of change possible for happy people. Alternatively, happy people may have been engaging in these kinds of stretch activities on their own, while unhappy people may have been ensconced in routines of safety in their daily lives. Consistent with this possibility, among participants in the control condition, higher baseline life satisfaction was associated with engaging in activities judged to be relatively more 'outside their comfort zone,' r (70) = .24, p = . 040. This correlation was severed – indeed, somewhat reversed – in the intervention condition, r (69) = –.21, p = .087, suggesting that the intervention undid the normal tendency for unhappy people to

engage in psychologically safer activities in their daily lives. This interpretation is consistent with research suggesting that life satisfaction is strongly influenced by individuals' intentional cognitive and behavioral choices (e.g., Lyubomirsky et al., 2005; Sheldon & Lyubomirsky, 2006, 2007; Sin & Lyubomirsky, 2009).

One useful contribution of our research is to offer a concrete protocol that enables people to plan and execute a stretch activity that, though challenging, is psychologically safe for them. A key component of our intervention is that people *choose* their out-of-comfort-zone activity, giving them agency, fostering the intrinsic motivation that comes with personal choice, and stretching them psychologically while protecting their feelings of comfort and safety (e.g., Deci & Ryan, 2000; Lepper, 1973). Our research suggests that people can take action to change their experiences and thus themselves, a notion that dovetails with research on the agency people can have in managing their own psychology and personality (see Cantor, 1990). It is possible that the present intervention enabled those who were low in life satisfaction to gradually experiment with their own self-perceived limits, instilling in them a belief in their capabilities and efficacy within a framework combining flexibility (i.e., self-chosen type and timing of activities) and structure (i.e., commitment to choose and perform activities, required reporting about their experiences).

Previous research similarly shows the efficacy of interventions aimed to challenge people to engage in activities that help them break free of habits and routines that contribute to low life satisfaction. For example, research by Fleeson et al. (2002) showed that encouraging introverts to behave in an extraverted fashion increased their positive affect. The authors stated their findings 'suggest that individuals have flexibility and opportunity to act in different ways and bring about personally desired consequences. That is, positive affect was predicted by what the individuals did regardless of what (traits) they had' (p. 1418). Along the same lines, Epley and Schroeder (2014) found a disconnect between the actual and predicted effects of connecting with a random stranger on a bus or train. Participants

Table 4. Perceived psychological function frequencies for intervention group (Time 1).

Psychological Function	Frequency of Psychological Function	Cumulative Percentage of Psychological Function Frequencies	Excerpts from Participant Reports
Exploration	25	35.71	'I chose to go to an opera show. I did not believe I would enjoy opera.' 'I decided to leave the comfort zone of driving in a private car, and for a week to travel only through public transport.' 'I went to the gym for the first time.' 'I signed up for a sewing course.'
Facing a fear	13	54.28	'I chose to go with my daughter to an insect museum, because it is a very difficult phobia I have.'
Self-assertion	11	70.00	'I chose to speak up in front of an audience.' 'I chose to finally tell someone close to me what I feel. I noticed that often it is uncomfortable for me to tell people the truth and then I give them all kinds of excuses.' 'I chose to ask for a salary increase.'
Self-care	9	82.85	'I chose to get a massage because I work so hard and I finally wanted to do something for myself.'
Doing good	7	92.85	'I chose to separate garbage in order to recycle and contribute to the environment.' 'I chose to volunteer to help students with hearing loss.'
Dealing with a challenge	5	100	'I worked on myself for hours to convince myself to go to class.' 'I chose to create a new schedule to deal with my heavy workload in work and life and not having free time.'
Total	70		

Table 5. Perceived facilitator frequencies for intervention group (Time 1).

Facilitator	Frequency of Facilitator	Cumulative Percentage of Facilitator	Excerpts from Participant Reports
Courage	28	40.00	'I did it despite the fear.' 'I'm glad I had the courage to do it.'
External commitment	18	65.70	'Having a clear goal and framework enabled me to get there.' 'I had to introduce myself to the entire company.' 'Being committed to the task made me to try harder.'
Having an open mind	18	91.40	'I chose an unusual step for me.' 'It is a spontaneous one-moment thought expressed in action.'
Thinking of others	6	100	'It gave me an opportunity to transcend my personal needs and to give her a bit of encouragement.' 'It helped me to realize that I'll improve their confidence and make them happy by doing that.'
Total	70		

reported a more rewarding and positive experience as a result of these encounters – when they were instructed to have them – than they expected. It took an experimental intervention to goad the people to act in a way that deviated from their inaccurate theory about what would make them happy.

In the context of the present study, in a safe space of their own creation, intervention-treated participants may have been able to come into direct contact with a broad range of possibilities for experiences as well as to express underdeveloped or unrecognized aspects of their selves. Their open-ended responses expressed relatively more affirmation, courage (and fear), and happiness. Indeed, one noteworthy finding was the rarity of courage manifested in the daily activities as logged by control-group participants. Based on the codings, none expressed courage or fear, compared with 70% and 41%, respectively, of treatment-group participants. Only 11% of control-group participants expressed going outside their comfort zone compared with 94% in the treatment condition. It seems that courageous acts may be relatively rare in many people's daily social lives. However, even small acts of courage may broaden thought-action repertoires and build resources (Fredrickson, 2001) that contribute to increased life satisfaction. Furthermore, facilitating a shift out of an autopilot mode of functioning, toward an interest in breaking routines, may thwart or slow hedonic adaptation (e.g., Frederick & Loewenstein, 1999) by giving rise to new pleasures arising from the anticipation of positive outcomes that may occur but that are uncertain (Wilson et al., 2005). Indeed, participants in the intervention condition conveyed less boredom than did participants in the control condition. Our intervention was especially helpful for people with low levels of baseline life satisfaction, perhaps because these were the very people who structured their lives in ways that, though they kept these individuals feeling safe, did not arouse the pleasures of uncertainty and challenge that our activity did.

The present study also enabled us to explore the types of activities individuals choose when stepping outside their comfort zones and which ones are associated with the most benefit. Interestingly, the benefits of this intervention seemed most robust among those people who went outside their comfort zone by helping others. Such activities included, for example, choosing to volunteer in a school to help students with hearing loss, donating hair for people who lost theirs due to cancer treatment, and applying to provide foster care. Previous research has shown that directly pursuing happiness, such as by engaging in hedonic pleasure and self-centered activities, does not result in increased life satisfaction (K. M. Sheldon et al., 2019; Mauss et al., 2011; Schooler et al., 2003). This may be due to placing excessive value on happiness and setting unrealistically high standards for happiness, resulting in fear of not measuring up to expectations (Ford & Mauss, 2013). Such evaluative rather than socially engaged mindset involves constant personal monitoring that appears to impede enjoyment (see, Vitterso et al., 2009).

A complementary concept related to this result involves the notion of eudaimonia, a sort of 'higher pleasure' (Seligman, 2002) that enables individuals to develop their potential and aspire to values, virtue, and vision (Huta, 2016; Steger et al., 2011). Eudaimonia is associated not only with personal life satisfaction but also with meaning, purpose, and caring beyond one's self-interest (e.g., Huta & Ryan, 2010; Peterson et al., 2005). Empirical evidence has shown that eudaimonic orientation is associated with prosocial values and behavior (e.g., Huta, 2016). Prosocial behavior, a central eudaimonic goal, has been reported to contribute significantly to life satisfaction. For example, people engaging in helping others reported higher happiness and positive moods (e.g., Dunn et al., 2008; Lyubomirsky et al., 2005; Weinstein & Ryan, 2010; Williamson & Clark, 1989), as well as enhanced psychological life satisfaction (e.g., Greenfield & Marks, 2004; Penner et al., 2005). The life satisfaction gained from prosocial behavior appears sustainable and relatively immune to adaptation (e.g., O'Brien & Kassirer, 2019). In the context of the present study, perhaps what was beneficial in our intervention was its ability to inspire prosocial behavior among those who might see it as interpersonally risky.

Regarding conditions that facilitate the intervention's impact, previous research on PPIs shows that participants who self-select into interventions show larger gains in life satisfaction compared to those who do not; thus, people who are more 'comfortable going outside their comfort zone' – but who are still reluctant to do so on their own – may benefit most (Sin & Lyubomirsky, 2009). Tolerance for uncertainty may be also a key moderator. People who are relatively high in tolerance for uncertainty may benefit more from the behavioral stretch intervention. Another possible moderator is neuroticism, as people high in neuroticism may find the difficulty of going outside their comfort zone especially punishing (e.g., Hampson, 2012; Schneider, 2004). That said, we believe that one element of our intervention makes such aversive effects less likely – it specifically asks respondents to set their own goals, and they presumably know best what kinds of activities would be within their 'latitude of acceptance' (Hovland et al., 1957). Creating well-timed and well-situated facilitating conditions, with a balance between creativity and

courage, on the one hand, and convenience and comfort, on the other, may help people to engage in an intervention more fruitfully and to push themselves beyond their self-perceived boundaries.

Finally, previous research on PPIs (e.g., Lyubomirsky et al., 2011; Lyubomirsky & Layous, 2013) found benefits that persisted for long periods of time and identified multiple moderators of such long-term effects (Lyubomirsky et al., 2005; Sin & Lyubomirsky, 2009). One that is especially germane is whether or not participants continue to practice the activity that they were introduced to. We suspect that the stretch intervention in the present study would have long-term benefits for those in whom it launches a positive recursive cycle, in which a small success at going outside one's comfort zone inspires one to take more risks and push oneself further beyond one's self-perceived limits, in a potentially repeating cycle (see, Cohen & Sherman, 2014).

Limitations and suggestions for future research

This study has several limitations. Our study did not directly test the underlying mechanism through which our intervention improved life satisfaction, a question we think future research can profitably address. There may be other mechanisms beyond the ones we posit – a self-perception and self-affirmation process, in which people perceive themselves more positively by stretching themselves and then experience the hedonic rewards of a sense of personal agency and courage. We see our research as demonstrating that going outside one's comfort zone *can* have benefits; *how* it does so is a question we hope future research will pursue.

We have suggested some additional mechanisms that may contribute, such as the 'pleasures of uncertainty' (Wilson et al., 2005). Another possibility that we think is particularly important is that our intervention reduces regret. As research suggests (see, for example, Gilovich & Medvec, 1995), people tend to regret the actions they did not take rather than the actions they did – and they tend to find excuses to miss many of the seemingly risky opportunities in their lives for growth. Perhaps our intervention helps people to identify and take the steps they believe they could and should take, but often do not.

Another limitation is that all the outcomes were self-report measures, a method that may be suitable for assessing personal motivations and subjective experiences (e.g., Sheldon & Lyubomirsky, 2007) but which could also lead to some biases in participants' responses. Future studies might address this problem by using behavioral measures of life satisfaction or by asking people in the partipants' lives (such as close friends or life partners) to report on any changes they observe in the participants.

A further limitation is that our intervention, being the first of its kind to be tested in a formal experiment, has many ingredients, and what is the key causal ingredient remains unclear. This, we think, is the course of much intervention research: an initial study that demonstrates an effect, which inspires later research to zero in on the key causal ingredients. We spent our resources on assessing *whether* such a behavioral stretch intervention could have a long-term effect. Indeed, many PPIs have been demonstrated to be effective, yet what precisely drives their effects remains somewhat ambiguous (see, Layous & Lyubomirsky, 2014). Is it the novelty of the activities that participants choose, the extent to which the activities induce feelings of comfort or fear, or the degree to which the activities inspire participants to act more prosocially than they normally do?

Additionally, our experimental design suggests that our comfort-zone instructions enabled participants to plan and experiment with new experiences and activities, yet we did not disentangle the effects of planning, executing, and reflecting on such activities. Future research could disentangle the key elements of the intervention. One future direction for research would be to explore whether merely thinking about or planning to do something outside one's comfort zone is sufficient to increase life satisfaction, or whether executing these intentions is necessary. Simply planning an activity, especially for those people with extreme levels of stress related to going outside their comfort zone, might serve as a beneficial 'psychological warm-up.' But we suspect that for full benefit, an actual behavioral change is needed. Another interesting direction would be to explore whether simply recalling a time when one went outside one's comfort zone yields benefits. It may, if it triggers an enhanced self-perception (Bem, 1972) that then promotes future similar actions. Additionally, future studies are needed to determine the benefits of our intervention relative to various control activities that involve participants in positive activities that are not directly tied to going outside their comfort zone. Again, identifying the key causal agents in the behavioral stretch intervention we test here is a fruitful topic for future research.

Given that the current study constitutes a preliminary attempt to explore the idea of 'comfort zone,' participants in the experimental group were free to decide what activities were outside their comfort zone. Future research could introduce more control in the selection

and planning of 'stretch' activities to ensure that they are truly outside participants' comfort zones, within their ability to achieve, and tailored to their specific needs. Coaching sessions may be useful to help participants decide on activities that would be maximally beneficial and tailored to their goals for growth. It is also telling that few of our control-group participants engaged in activities judged to be outside their comfort zone, suggesting that our web-based intervention led participants to engage in novel activities that were not simply ones they were postponing for later.

Another limitation is that the present study cannot determine whether 'doing good' or 'volunteering and helping others' is causally related to greater benefits given the correlational nature of the relevant analyses. Future studies could experimentally manipulate whether the 'stretch' people plan is related to helping others or not.

In addition, given that the present study was conducted in the specific sociocultural context of a Western, moderately individualized culture, an exploration of the intervention's impact in other cultures would constitute an important direction for future research.

Overall, this study provides preliminary evidence for potential benefits of intentionally and actively stepping out of one's comfort zone. The findings have practical implications for therapeutic, organizational, and educational programs trying to improve life satisfaction and break people out of hedonic ruts and harmful routines. It is possible, moreover, that such stretch interventions may generate positive outcomes beyond greater life satisfaction. They may open people up to confronting challenging issues in their lives, to forming new friendships, to supporting others, and to being socially vulnerable—all possible consequences arising from the heightened sense of efficacy that may come from stepping outside their comfort zone.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement:

The data for the reported research are available from the corresponding author, P.R.N, upon request.

References

Anderson, C. J. (2003). The psychology of doing nothing: Forms of decision avoidance result from reason and emotion. *Psychological Bulletin*, *129*(1), 139–166. https://doi.org/10.1037/0033-2909.129.1.139

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman Books/ Henry Holt & Co.

Becker, W. C. (1964). Consequences of different kinds of parental discipline. In M. L. Hoffman & W. W. Hoffman (Eds.), *Review of child development research* (pp. 162–208). Russell Sage Foundation.

Bem, D. J. (1972). Self-perception theory. In *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press..

Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC public health*, *13*(1), 1–20.

Calhoun, L. G., & Tedeschi, R. G. (2006). The foundations of posttraumatic growth: An expanded framework. In L. G. Calhoun & R. G. Tedeschi (Eds.), *The handbook of posttraumatic growth: Research and practice* (pp. 1–23). Erlbaum.

Cantor, N. (1990). From thought to behavior:" Having" and" doing" in the study of personality and cognition. *American psychologist*, *45*(6), 735–750.

Carr, A., Cullen, K., Keeney, C., Canning, C., Mooney, O., Chinseallaigh, E., & O'Dowd, A. (2021). Effectiveness of positive psychology interventions: a systematic review and meta-analysis. *The Journal of Positive Psychology*, *16*(6), 749–769.

Cohen, G. L., & Garcia, J. (2008). Identity, belonging, and achievement A model, interventions, implications. *Current Directions in Psychological Science*, *17*(6), 365–369. https://doi.org/10.1111/j.1467-8721.2008.00607.x

Cohen, G. L., Garcia, J., & Goyer, J. P. (2017). Turning point: Targeted, tailored, and timely psychological intervention. In A. J. Elliot, C. S. Dweck, & D. S. Yeager (Eds.), *Handbook of competence and motivation: Theory and application* (2nd ed., pp. 657–686). Guilford Press.

Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: Self-affirmation and social psychological intervention. *Annual review of psychology 65*, 333–371. https://doi.org/10.1146/annurev-psych-010213-115137

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. HarperCollins.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Diener, E., Emmons, R, Larsen, R., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 1105–1117.

Drozd, F., Mork, L., Nielsen, B., Raeder, S., & Bjørkli, C. A. (2014). Better Days–A randomized controlled trial of an internet-based positive psychology intervention. *The Journal of Positive Psychology*, *9*(5), 377–388.

Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, *319*(5870), 1687–1688. https://doi.org/10.1126/science.1150952

Dweck, C. (2006). *Mindset: The new psychology of success*. Random House.

Eidelman, S., & Crandall, C. S. (2009). On the psychological advantage of the status quo. In J. T. Jost, A. C. Kay, & H. Thorisdottir (Eds.), *Social and psychological bases of ideology and system justification* (pp. 85–109). Oxford University Press.

Emmons, R. A., & McCullough, M. E. (2004). *The psychology of gratitude*. Oxford University Press..

Epley, N., & Schroeder, J. (2014). Mistakenly seeking solitude. *Journal of Experimental Psychology. General*, *143*(5), 1980–1999. https://doi.org/10.1037/a0037323

Fiori, K. L., Hays, J. C., & Meador, K. G. (2004). Spiritual turning points and perceived control over the life course. *International Journal of Aging & Human Development*, *59*(4), 391–420. https://doi.org/10.2190/KBXL-18W0-FPJ4-F1GY

Fleeson, W., Malanos, A. B., & Achille, N. M. (2002). An intraindividual process approach to the relationship between extraversion and positive affect: Is acting extraverted as" good" as being extraverted? *Journal of Personality and Social Psychology*, *83*(6), 1409–1422. https://doi.org/10.1037/0022-3514

Ford, B. Q., & Mauss, I. B. (2013). The paradoxical effects of pursuing positive emotion: When and why wanting to feel happy backfires. In J. Gruber & J. Moskowitz (Eds.), *The light and dark sides of positive emotion* (pp. 363–382). Oxford University Press.

Frankl, V. E. (1963). *Man's search for meaning*. WW Publisher.

Frederick, S., & Loewenstein, G. (1999). Hedonic Adaptation. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Life satisfaction. the foundations of hedonic psychology* (pp. 302–329). Russell Sage Foundation.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Garcia, J., & Cohen, G. L. (2013). A social psychological approach to educational intervention. In E. Shafir (Ed.), *The behavioral foundations of public policy* (pp. 329–347). Princeton University Press.

Gilbert, D. (2009). *Stumbling on happiness*. Vintage Canada..

Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when, and why. *Psychological Review*, *102*(2), 379–395. https://doi.org/10.1037/0033-295X.102.2.379

Gordon, K. (2003). The impermanence of being: Toward a psychology of uncertainty. *Journal of Humanistic Psychology*, *43*(2), 96–117. https://doi.org/10.1177/0022167802250731

Greenfield, E. A., & Marks, N. F. (2004). Formal volunteering as a protective factor for older adults' psychological life satisfaction. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, *59*(5), S258–S264. https://doi.org/10.1093/geronb/59.5.S258

Hampson, S. E. (2012). Personality processes: Mechanisms by which personality traits "get outside the skin". *Annual Review of Psychology*, *63*(1), 315–339. https://doi.org/10.1146/annurev-psych-120710-100419

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychology Review*, *10*(2), 88–110. https://doi.org/10.1207/s15327957pspr1002_1

Hovland, C. I., Harvey, O. J., & Sherif, M. (1957). Assimilation and contrast effects in reactions to communication and attitude change. *The Journal of Abnormal and Social Psychology*, *55*(2), 244–252. https://doi.org/10.1037/h0048480

Huta, V. (2016). Eudaimonic and hedonic orientations: Theoretical considerations and research findings. In J. Vitterso (Ed.), *Handbook of eudaimonic life satisfaction* (pp. 215–231). Springer.

Huta, V., & Ryan, R. M. (2010). Pursuing pleasure or virtue: The differential and overlapping life satisfaction benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies*, *11*(6), 735–762. https://doi.org/10.1007/s10902-009-9171-4

Judd, C. M., McClelland, G. H., & Ryan, C. S. (2011). *Data analysis: A model. comparison approach*. Routledge..

Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1991). Anomalies the endowment effect, loss aversion, and status quo bias. *Journal of Economic Perspectives*, *5*(1), 193–206. https://doi.org/10.1257/jep.5.1.193

King, L. A. (2001). The health benefits of writing about life goals. *Personality & Social Psychology Bulletin*, *27*(7), 798–807. https://doi.org/10.1177/0146167201277003

King, L. A., Scollon, C. K., Ramsey, C., & Williams, T. (2000). Stories of life transition: Subjective life satisfaction and ego development in parents of children with down syndrome. *Journal of Research in Personality*, *34*(4), 509–536. https://doi.org/10.1006/jrpe.2000.2285

Ko, K., Margolis, S., Revord, J., & Lyubomirsky, S. (2021). Comparing the effects of performing and recalling acts of kindness. *The Journal of Positive Psychology*, *16*(1), 73–81. https://doi.org/10.1080/17439760.2019.1663252

Kruse, E., Chancellor, J., Ruberton, P. M., & Lyubomirsky, S. (2014). An upward spiral between gratitude and humility. *Social Psychological and Personality Science*, *5*(7), 805–814. https://doi.org/10.1177/1948550614534700

Layous, K., & Lyubomirsky, S. (2014). The how, why, what, when, and who of happiness: Mechanisms underlying the success of positive activity interventions. In J. Gruber & J. T. Moskowitz (Eds.), *Positive emotion: Integrating the light sides and dark sides* (pp. 473–495). Oxford University Press.

Layous, K., Nelson, S. K., & Lyubomirsky, S. (2013). What is the optimal way to deliver a positive activity intervention? The case of writing about one's best possible selves. *Journal of Happiness Studies*, *14*(2), 635–654. https://doi.org/10.1007/s10902-012-9346-2

Layous, K., Nelson, S. K., Oberle, E., Schonert-Reichl, K. A., Lyubomirsky, S., & Krueger, F. (2012). Kindness counts: Prompting prosocial behavior in preadolescents boosts peer acceptance and life satisfaction. *PLoS ONE*, *7*(12), e51380. https://doi.org/10.1371/journal.pone.0051380

Lepper, M. R. (1973). Dissonance, self-perception, and honesty in children. *Journal of Personality and Social Psychology*, *25*(1), 65–74. https://doi.org/10.1037/h0034269

Lepper, M. R., & Woolverton, M. (2002). The wisdom of practice: Lessons learned from the study of highly effective tutors. - PsycNET. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 135–158). Academic Press.

Luckner, J. L., & Nadler, R. S. (1997). *Processing the experience: Strategies to enhance and generalize learning* (2nd ed.). Kendall Hunt.

Lyubomirsky, S. (2011). Hedonic adaptation to positive and negative experiences. In S. Folkman (Ed.), *Oxford handbook of stress, health, and coping* (pp. 200–224). Oxford University Press.

Lyubomirsky, S., Dickerhoof, R., Boehm, J., & Sheldon, K. (2011). Becoming happier takes both a will and a proper way: An experimental longitudinal intervention to boost life satisfaction. *Emotion*, *11*(2), 391–402. https://doi.org/10.1037/a0022575

Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase life satisfaction? *Current Directions in Psychological Science*, *22*(1), 57–62. https://doi.org/10.1177/0963721412469809

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*(2), 111–131. https://doi.org/10.1037/1089-2680.9.2.111

Lyubomirsky, S., Sousa, L., & Dickerhoof, R. (2006). The costs and benefits of writing, talking, and thinking about life's triumphs and defeats. *Journal of Personality and Social Psychology*, *90*(4), 692–708. https://doi.org/10.1037/0022-3514.90.4.692

Margolis, S., & Lyubomirsky, S. (2020). Experimental manipulation of extraverted and introverted behavior and its effects on life satisfaction. *Journal of Experimental Psychology. General*, *149*(4), 719–731. https://doi.org/10.1037/xge0000668

Maslow, A. H. (1966). *The psychology of science: A reconnaissance* (Gateway Editions ed.). Harper & Row.

Mauss, I. B., Tamir, M., Anderson, C. L., & Savino, N. S. (2011). Can seeking happiness make people unhappy? Paradoxical effects of valuing happiness. *Emotion*, *11*(4), 807–815. https://doi.org/10.1037/a0022010

Miller, W. R., & C'de Baca, J. (2001). *Quantum change: When sudden insights and epiphanies transform ordinary lives*. Guilford Press.

Moshinsky, A., & Bar-Hillel, M. (2010). Loss aversion and status quo label bias. *Social Cognition*, *28*(2), 191–204. https://doi.org/10.1521/soco.2010.28.2.191

O'Brien, E., & Kassirer, S. (2019). People are slow to adapt to the warm glow of giving. *Psychological Science*, *30*(2), 193–204. https://doi.org/10.1177/0956797618814145

Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology 56*, 365–392. https://doi.org/10.1146/annurev.psych.56.091103.070141

Peterson, C., Park, N., & Seligman, M. E. P. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies*, *6*(1), 25–41. https://doi.org/10.1007/s10902-004-1278-z

Prochaska, J. O. (1999). How do people change, and how can we change to help many more people? In M. A. Hubble, B. L. Duncan, & S. D. Miller (Eds.), *The heart and soul of change* (pp. 227–255). American Psychological Association.

Proulx, T., & Heine, S. J. (2008). The case of the transmogrifying experimenter affirmation of a moral schema following implicit change detection. *Psychological Science, 19*(12), 1294–1300.

Russo-Netzer, P., & Davidov, J. (2020). Transformative life experience as a glimpse into potentiality. *Journal of Humanistic Psychology*, 002216782093748. https://doi.org/10.1177/0022167820937487

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publications..

Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of Risk and Uncertainty*, *1*(1), 7–59. https://doi.org/10.1007/BF00055564

Schneider, T. R. (2004). The role of neuroticism on psychological and physiological stress responses. *Journal of Experimental Social Psychology*, *40*(6), 795–804. https://doi.org/10.1016/j.jesp.2004.04.005

Schooler, J. W., Ariely, D., & Loewenstein, G. (2003). The pursuit and assessment of happiness can be self-defeating. In J. C. I. Brocas (Ed.), *The psychology of economic decisions* (pp. 41–70). Oxford University Press.

Seligman, M. E. (2002). Positive psychology, positive prevention, and positive therapy. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 3–9). Oxford University Press.

Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist*, *60*(5), 410–421. https://doi.org/10.1037/0003-066X.60.5.410

Sheldon, K. M., Corcoran, M., & Prentice, M. (2019). Pursuing eudaimonic functioning versus pursuing hedonic life satisfaction: The first goal succeeds in its aim, whereas the second does not. *Journal of Happiness Studies*, *20*(3), 919–933. https://doi.org/10.1007/s10902-018-9980-4

Sheldon, K. M., & Lyubomirsky, S. (2004). Achieving sustainable new happiness: Prospects, practices, and prescriptions. In P. A. Linley & S. Joseph (Eds.), *Positive Psychology in Practice* (pp. 127–145). Wiley & Sons, Inc.

Sheldon, K. M., & Lyubomirsky, S. (2006). Achieving sustainable gains in happiness: Change your actions, not your circumstances. *Journal of Happiness Studies*, *7*(1), 55–86. https://doi.org/10.1007/s10902-005-0868-8

Sheldon, K. M., & Lyubomirsky, S. (2007). Is it possible to become happier? (and if so, how?). *Social and Personality Psychology Compass*, *1*(1), 129–145. https://doi.org/10.1111/j.1751-9004.2007.00002.x

Sheldon, F., & Lyubomirsky, K. L. (2020). Revisiting the sustainable happiness model and pie chart: Can happiness be successfully pursued? *Journal of Positive Psychology*, *16*(2), 145–154.

Sin, N. L., & Lyubomirsky, S. (2009). Enhancing life satisfaction and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology*, *65*(5), 467–487. https://doi.org/10.1002/jclp.20593

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. *Advances in Experimental Social Psychology*, *21*(2), 261–302. https://doi.org/10.1016/S0065-2601(08)60229-4

Steger, M. F., Oishi, S., & Kesebir, S. (2011). Is a life without meaning satisfying? The moderating role of the search for meaning in satisfaction with life judgments. *The Journal of Positive Psychology*, *6*(3), 173–180. https://doi.org/10.1080/17439760.2011.569171

Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*(3), 455–471. https://doi.org/10.1002/jts.2490090305

Van Den Bos, K. (2001). Uncertainty management: The influence of uncertainty salience on reactions to perceived procedural fairness. *Journal of Personality and Social Psychology*, *80*(6), 931–941. https://doi.org/10.1037/0022-3514.80.6.931

Vitterso, J., Overwien, P., & Martinsen, E. (2009). Pleasure and interest are differentially affected by replaying versus analyzing a happy life moment. *Journal of Positive Psychology*, *4*(1), 14–20. https://doi.org/10.1080/17439760802060602

Vygotsky, L. (1978). Interaction between learning and development. In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.), *Mind and Society: The Development of Higher Psychological Processes* (pp. 79-91). Cambridge, MA: Harvard University Press.

Walton, G. M., & Wilson, T. D. (2018). Wise interventions: Psychological remedies for social and personal problems. *Psychological Review*, *125*(5), 617–655. https://doi.org/10.1037/rev0000115

Weinstein, N., & Ryan, R. M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on life satisfaction for the helper and recipient. *Journal of Personality and Social Psychology*, *98*(2), 222–244. https://doi.org/10.1037/a0016984

Williamson, G. M., & Clark, M. S. (1989). Providing help and desired relationship type as determinants of changes in moods and self-evaluations. *Journal of Personality and Social Psychology*, *56*(5), 722–734. https://doi.org/10.1037/0022-3514.56.5.722

Wilson, T. D., Centerbar, D. B., Kermer, D. A., & Gilbert, D. T. (2005). The pleasures of uncertainty: Prolonging positive moods in ways people do not anticipate. *Journal of Personality and Social Psychology*, *88*(1), 5–21. https://doi.org/10.1037/0022-3514.88.1.5

Zinnbauer, B. J., & Pargament, K. I. (1998). Spiritual conversion: A study of religious change among college students. *Journal for the Scientific Study of Religion*, *37*(1), 161–180. https://doi.org/10.2307/1388035