

Temporal distancing during the COVID-19 pandemic: Letter writing with future self can mitigate negative affect

Yuta Chishima¹  | I-Ting Huai-Ching Liu² | Anne E. Wilson¹

¹Wilfrid Laurier University, Waterloo, ON, Canada

²Ritsumeikan University, Kusatsu, Shiga, Japan

Correspondence

Anne E. Wilson, Wilfrid Laurier University, Waterloo, ON, N2L 3C5, Canada.
Email: awilson@wlu.ca

Funding information

Japan Society for the Promotion of Science, Grant/Award Number: 18J01883; Social Science and Humanities Research Council of Canada Insight Grant, Grant/Award Number: 435-2019-1034

Abstract

Novel coronavirus disease (COVID-19) is spreading across the world, threatening not only physical health but also psychological well-being. We reasoned that a broadened temporal perspective may attenuate current mental distress and tested a letter-writing manipulation designed to connect people to their post-COVID-19 future selves. We conducted an online experiment with 738 Japanese participants recruited from two common survey platforms. They were randomly assigned to either send a letter to their future self (*letter-to-future*) condition, send a letter to present self from the perspective of future self (*letter-from-future*) condition, or a control condition. Participants in both letter-writing conditions showed immediate decrease in negative affect and increase in positive affect relative to the control condition. These effects were mediated by temporal distancing from the current situation. These findings suggest that taking a broader temporal perspective can be achieved by letter writing with a future self and may offer an effective means of regulating negative affect in a stressful present time such as the COVID-19 pandemic.

KEYWORDS

COVID-19, emotion regulation, future self, temporal distance, well-being

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made. © 2021 The Authors. *Applied Psychology: Health and Well-Being* published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

INTRODUCTION

A novel coronavirus (COVID-19) originating from Wuhan, China, has spread across the world. This international emergency has led to dramatic changes in the situations and daily routines even of uninfected people, in an effort to slow down the spread of the virus. Stressors include the strain of quarantine and social distancing, the economic impact of job loss, and anxiety about own and loved ones' health. These experiences can seriously damage people's mental health (Gardner & Moallem, 2015; Garfin et al., 2020; Hawryluck et al., 2004; Probst et al., 2018; Qiu et al., 2020; Zhang et al., 2020). Duan and Zhu (2020) suggested that it is necessary to pay attention not only to physical health but also to mental health in this pandemic and to offer psychological interventions for those in need.

In Japan, where the data for this study were collected, the central government officially declared a state of emergency over the growing spread of COVID-19 on April 7. People were asked to drastically limit their social contact and gathering as groups. Some surveys have shown that this emergency situation has made people feel depressed and anxious. A weekly online survey (Macromill, 2020) on April 15 showed that 48% of the respondents felt depressed, showing a 15% increase compared with one month ago and a 29% increase compared with one year ago. Another survey (Cross Marketing, 2020) conducted on April 13 to 14 revealed that anxiety rating increased over 20% from one month ago. April 2020 was the month in which the first wave of new cases peaked in Japan.

Temporal distancing as an emotion regulation strategy

To reduce the negative intensity of stressful events, such as the COVID-19 pandemic, some research has suggested that taking a temporally distanced perspective from the current situation is a promising strategy (Ayduk & Kross, 2010; Kross & Ayduk, 2017; Kross et al., 2012, 2014; Moser et al., 2017; Schartau et al., 2009). In particular, several studies have demonstrated that putting stressful events into a broader temporal perspective, for example by focusing on the distant future (conceptualized as "temporal distancing"), reduces distress or negative feelings (Ahmed et al., 2018; Bruehlman-Senecal & Ayduk, 2015; Bruehlman-Senecal et al., 2016; Macrae et al., 2015, 2016; Yanagisawa et al., 2011), perhaps by highlighting the impermanence of the current stressful events (Bruehlman-Senecal & Ayduk, 2015). Bruehlman-Senecal et al. (2016) developed a scale to assess habitual temporal distancing from negative events and demonstrated that high temporal distancers evaluated their coping resources more desirably, experienced less negative affect and more positive affect, and ruminated less than those with low temporal distancing.

How to enhance temporal distancing

Given the distress and uncertainty evoked by the unprecedented present situation, it is not a given that interventions shown to be successful in the past will also be effective in this circumstance. Therefore, it is vital to test interventions that may have some promise in the current context. We reasoned that a temporally distanced perspective may be particularly helpful during such a uniquely troubling present. We drew on earlier theorizing about a distanced perspective, but rather than simply prompting people to imagine their future self, we extend past research with a more engaging task: writing one's future self a letter. To our knowledge, past research has not examined

the effect of letter writing to one's future self on well-being. Some studies, however, have utilized the letter-writing method to increase academic (Barnett et al., 2019; Chishima & Wilson, 2020), career-related (Chishima & Wilson, 2020), healthy (Rutchick et al., 2018), and ethical (Van Gelder et al., 2013) behaviors. For example, Rutchick et al. (2018) found that participants who write to their distant-future self (20 years) increased their exercise time relative to those who wrote to a near-future self (3 months).

Although in most letter-writing studies people write a letter to their future self, some studies have examined the reverse direction: Participants write a letter to their present self from an imagined future vantage point. This method may conceivably increase perspective taking with future self and distance from the present as respondents compose a message back to the present from the position of the future self. Only a couple of studies have employed this technique (Barnett et al., 2019; Chishima & Wilson, 2020), and none have examined psychological well-being. We have no theoretical reason to suppose that writing a letter in one direction versus the other will have a different effect on achieving a broader temporal perspective, but it is conceivable that these tasks will elicit different perspectives. For the sake of thoroughness, we include both letter types (to versus from future self) but make no predictions about how they may differ.

The current study

The aim of the current study was to examine whether letter writing to/from future self can decrease negative affect and increase positive affect. We predicted that both of the letter-writing tasks (*letter-to-future* and *letter-from-future*) would mitigate negative affect and foster positive affect relative to a control condition focused on the present only (Hypothesis 1). Moreover, we expected that letter writing would elicit a broadened, temporally distanced perspective and that negative/positive affect would be explained by the degree to which people considered coronavirus as a small part of a bigger temporal picture. Therefore, we predicted that temporal distancing would mediate the relationship between letter writing and negative/positive affect (Hypothesis 2).

Although some previous studies have adopted longer future time periods (e.g. 20 years later) in letter-writing tasks (Rutchick et al., 2018; Van Gelder et al., 2013), here we used the period of one year later to refer to the “future” for two reasons: First, imagining one's self twenty years into the future may be too distant to form a vivid, concrete image (Trope & Liberman, 2003), especially in this COVID-19 pandemic situation; and second, at the time of data collection (April 2020), the COVID-19 pandemic situation was intense, but expected to be temporally limited. Many people presumed that the situation was liable to improve within one year. Indeed, in an online survey in Japan (Nifty, 2020, March 20–26, 2020) asking participants when they believed that the spread of the COVID-19 virus would “end” in Japan, only 17.8% of respondents thought that it would end later than January 2021. Although many forecasts have become more pessimistic about the original one-year time frame (i.e. many are no longer expecting resolution by April 2021), we describe the common perception in April 2020.

METHOD

Participants

Participants ($N = 746$) were recruited using two Japanese crowdsourcing platforms, called Lancers and CrowdWorks.¹ We excluded individuals who wrote about entirely irrelevant topics without following

the instruction of writing about daily life ($n = 1$) and those who very clearly did not follow the instruction of writing letters ($n = 5$ for the letter-to-future condition, $n = 2$ for the letter-from-future condition). Some of them wrote sentences that are not relevant to the instruction. The final sample consisted of 738 participants ($M_{\text{age}} = 38.85$ years, $SD = 10.49$, range = 18–76; 54.8% were women). A sensitivity analysis conducted using G*Power suggested that with $\alpha = 0.05$ and $1 - \beta = 0.80$ power, the sample of 738 participants for a two-way mixed ANOVA is sufficient to detect an effect size of $f = 0.04$. In other words, the study is well powered to detect even small effect sizes. Participants' employment status was as follows: "student" = 4.9%, "full-time employee" = 38.6%, "part-time employee" = 14.4%, "housewife/househusband" = 17.1%, "unemployed" = 12.3%, and "other" = 12.7%. The participants' remote working situation had been influenced as follows: "completely working from home because of COVID-19" = 9.8%, "partially working from home because of COVID-19" = 13.1%, "working outside as usual" = 22.1%, and "working from home as usual" = 19.2%. Only three participants had been tested for COVID-19, and the reported results were negative. Participants also reported their future expectation about the influence of COVID-19 on their daily life: "it will be worse in one year" = 13.8%, "same in one year" = 21.8%, and "better in one year" = 64.4%.

Procedures

This research was approved by the Research Ethics Committee of the Kyoto University (Ref: 30-P-24). The participants consented to participate in the study before responding to the questionnaires. The online, anonymous data collection was conducted from April 13 to 15, 2020, approximately one week after the emergency declaration in Japan (on April 7). We merged the samples from two platforms (Lancers and CrowdWorks) after checking that there were no large differences in age, gender, the number of Japanese characters of the participants' letters, and the scores on the measures. Each participant received 300 Japanese yen as compensation after participation.

We adopted a pre/post test design. Participants were first asked to answer demographic and COVID-19-related questions, future self-vividness, negative affect, positive affect, and temporal distancing. After completing the pre-test, participants were randomly assigned to one of three conditions: (a) *letter-to-future* condition, (b) *letter-from-future* condition, and (c) control condition. Participants in all conditions were asked to write about their present daily life in the pandemic situation. The instruction was "how does the spreading new coronavirus influence your daily life?" The average length of the answers was 186.39 Japanese characters ($SD = 128.64$, range = 4–1019). Then, those in the *letter-to-future* and *letter-from-future* conditions were asked to imagine their life in one year and to write a few sentences about their future life. Upon completion, those in the *letter-to-future* condition were instructed to write a letter to their future self in one year's time, while referring to the description they wrote. The average length of the letters was 298.07 Japanese characters ($SD = 174.76$, range = 23–1032). Participants in the *letter-from-future* condition were instructed to imagine that they went forward in time one year (to April 2021) and that they had spent that year as they had imagined in the previous task. They were asked to write a letter to their present self from their future perspective. The average length of these letters was 284.77 Japanese characters ($SD = 161.70$, range = 12–827). We prepared some help topics to guide participants in both letter-writing tasks (see Tables S1 and S2).

After the experimental task, participants completed manipulation checks and all remaining dependent variables. Participants in all three conditions reported the vividness of future self as manipulation check: We expected that relative to the control condition, both letter-writing conditions would increase the vividness with which future self was envisioned because both tasks require vivid imagination of future self. We had no a priori predictions about differences between letter-writing

conditions (writing *letter-to-future* versus *letter-from-future*) on vividness of future self. However, we also included a manipulation check item in only the letter-writing conditions asking the degree to which participants felt like they had just returned from the future. We expected that this manipulation check would distinguish between letter-writing conditions, with the *letter-from-future* condition reporting the sense of having traveled back from the future to a greater degree than the *letter-to-future* condition. After manipulation checks, participants reported their negative affect, positive affect, and temporal distancing.

Measures

Items for manipulation check

We included two types of manipulation checks. First, future self-vividness (“I can vividly imagine myself one year from now”) was assessed in the pre- and post-test in all conditions on a scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). This item was created by the authors, adapted from similar items in previous research (Van Gelder et al., 2015). Second, participants in the two letter-writing conditions only also reported their sense of time travel² “I feel as if I just came back from next year (2021)” on a scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”).

Negative and positive affect

We assessed negative and positive affect using the Emotion and Arousal Checklist (EACL) developed by Oda et al. (2015). This scale has 33 items comprising five subscales used to assess emotions (fear, anger, sadness, disgust, and happiness) and four subscales to assess arousal (energy, lethargy, easiness, and tension) rated on a 4-point Likert scale ranging from 0 (“strongly disagree”) to 3 (“strongly agree”). Participants were asked to what extent they felt each feeling now. Table S3 displays the full items. However, these subscales were highly correlated (Table S4). Thus, we used a hierarchical cluster analysis with Ward's method and divided the nine subscales into negative and positive affect based on the dendrogram (Figure S1), which showed how close the subscales were to each other. The internal consistency reliabilities of the negative affect and positive affect in the current study were $\alpha = 0.96/0.97$ and $\alpha = 0.91/0.94$, respectively, at the pre/post test.

Temporal distancing from COVID-19

We used the temporal distancing scale developed by Bruehlman-Senecal et al. (2016) after the following two modifications: First, although the original scale was developed to assess global tendencies of temporal distancing, we changed the wording of the items to assess specific features in the COVID-19 pandemic situation. Specifically, participants were asked to reflect on their COVID-19 experience and we reworded “the event” into “COVID-19” throughout the scale; and second, we used present continuous tense instead of original present tense to assess change after the manipulation. An example item is “I’m focusing on how my negative feelings about COVID-19 may change with time.” Table S5 displays the full items. Items were rated on a 7-point Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). The internal consistency reliability of temporal distancing from COVID-19 in the current study was $\alpha = 0.58/0.73$ at the pre/post test.

The original English version of the temporal distancing scale without modification for COVID-19 was translated into Japanese using a translation and back-translation process (Brislin, 1986). First, a professional translator translated the scale into Japanese. Second, a native Japanese speaker corrected the wording slightly to make it more natural when necessary. Third, a different professional back-translated those items into English. Finally, the researcher who developed the original temporal distancing scale certified that the original items and the back-translated items had the same meaning. After these procedures, we adapted the Japanese generic scale to mention COVID-19 as the specific stressful event.

RESULTS

The descriptive statistics and correlations among the variables are presented in Table S6.

Manipulation checks

We examined the effect of letter writing on two manipulation checks. Future self-vividness was both examined in a 2 Time (pre- versus post-test) \times 3 Condition (*letter-from-future*, *letter-to-future*, control) mixed ANOVA with the Bonferroni correction for multiple comparisons. A Time \times Condition interaction was significant, $F(2, 735) = 40.84, p < .001, \eta_p^2 = 0.10$. The result revealed that although self-vividness did not differ by condition at the pre-test ($p = .434, \eta_p^2 = 0.00; M = 2.63, SD = 1.11$ for *letter-to-future* condition; $M = 2.59, SD = 1.04$ for *letter-from-future* condition; and $M = 2.72, SD = 1.15$ for control condition), as expected it was significantly higher in the two letter-writing conditions than in the control at post-test ($p < .001, \eta_p^2 = 0.07; M = 3.18, SD = 1.15$ for *letter-to-future* condition; $M = 3.34, SD = 1.02$ for *letter-from-future* condition; and $M = 2.65, SD = 1.13$ for control condition). Second, the feeling of having returned from the future was compared for the two letter-writing conditions. A *t*-test showed that, as expected, the score in the *letter-from-future* condition was significantly higher than that in the *letter-to-future* condition ($t = 3.30, df = 462, p = .001, d = 0.31; M = 3.75, SD = 1.73$ for *letter-to-future* condition; and $M = 4.27, SD = 1.64$ for *letter-from-future* condition).

Effect of letter-writing task on negative/positive affect and temporal distancing

To show the effect of letter writing on change in negative/positive affect and temporal distancing, we compared the scores across the three conditions using mixed ANOVA (Time \times Condition) with the Bonferroni correction. Time \times Condition interactions were significant for negative affect, $F(2, 735) = 35.02, p < .001, \eta_p^2 = 0.09$, and positive affect, $F(2, 735) = 48.95, p < .001, \eta_p^2 = 0.12$. Simple effects (reported in Figure 1a,b) revealed that negative affect decreased in both letter-writing conditions ($p < .001, d = 0.44$ for *letter-to-future* condition; and $p < .001, d = 0.47$ for *letter-from-future* condition). Negative affect did not change in the control condition between the pre- and post-test ($p = .120, d = 0.06$). Conversely, positive affect increased in both letter-writing conditions ($p < .001, d = 0.30$ for *letter-to-future* condition; and $p < .001, d = 0.36$ for *letter-from-future* condition), but declined in the control condition ($p < .001, d = 0.25$). Furthermore, as shown in Figure 1c, the Time \times Condition interaction on temporal distancing was also significant, $F(2, 735) = 15.33, p < .001, \eta_p^2 = 0.04$. As predicted, temporally distanced perspective increased in both letter-writing

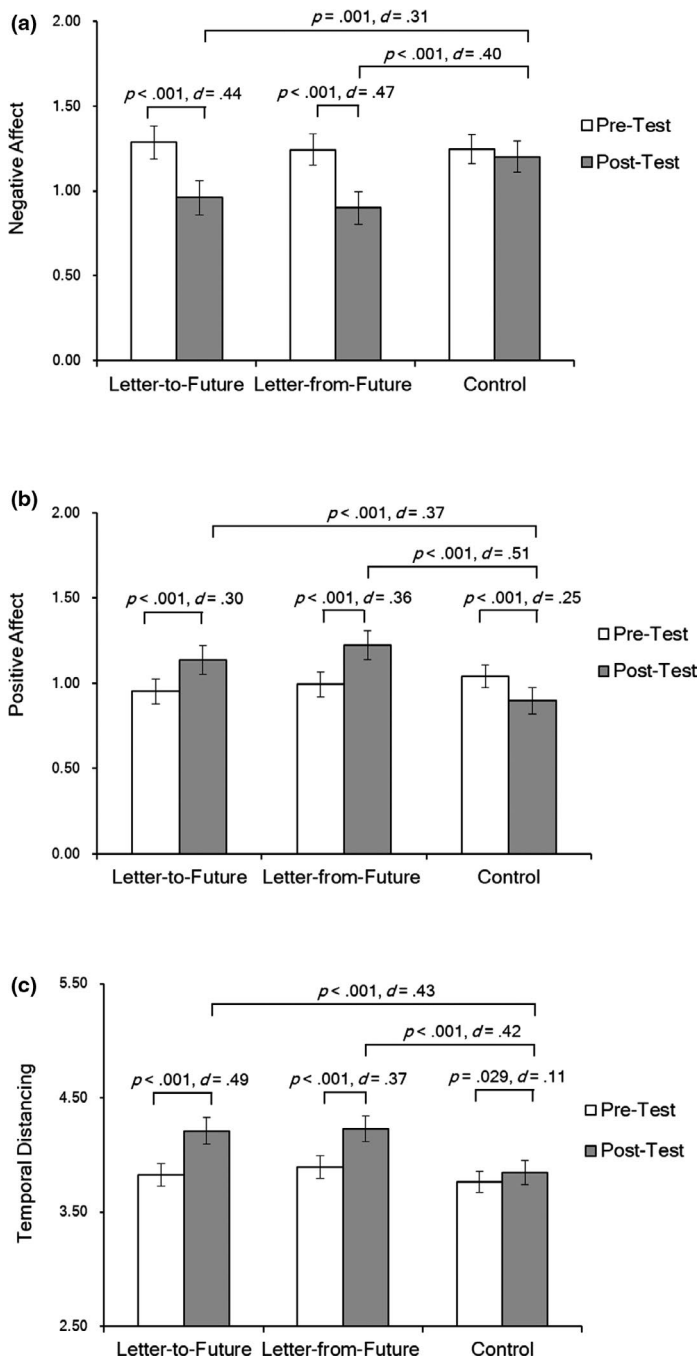


FIGURE 1 Mean Differences of Negative Affect (a), Positive Affect (b) and Temporal Distancing (c) by Three Conditions. Error bars indicate 95% confidence intervals.

conditions ($p < .001$, $d = 0.49$ for *letter-to-future* condition; and $p < .001$, $d = 0.37$ for *letter-from-future* condition). It also slightly increased in the control condition ($p = .029$, $d = 0.11$).³ Further, when age, gender, future expectation of COVID-19, and the number of characters in the present daily life description were added as covariates, all patterns of significance remained unchanged compared

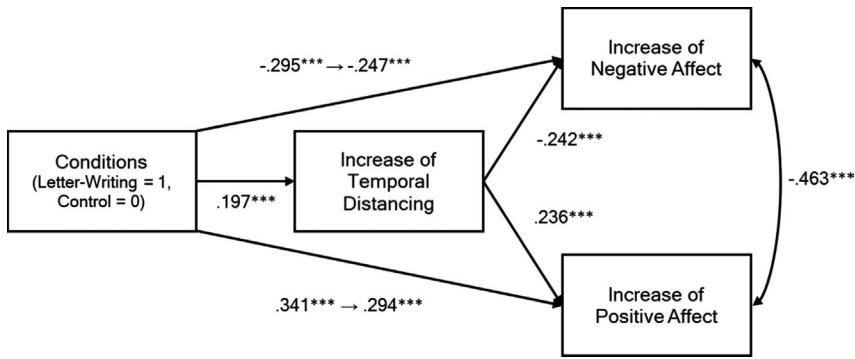


FIGURE 2 Mediation model. All coefficients are standardized. Errors were omitted to simplify the figure. CFI = 1.00, RMSEA = 1.00. *** $p < .001$.

with the model without covariates. The Time \times Condition interactions were significant for negative affect, $F(2, 728) = 34.84, p < .001, \eta_p^2 = 0.09$, positive affect, $F(2, 728) = 48.28, p < .001, \eta_p^2 = 0.12$, and temporal distancing, $F(2, 728) = 16.39, p < .001, \eta_p^2 = 0.04$.

Mediation effects of temporal distancing

In the mediation analysis, we collapsed the two letter-writing conditions using whole sample since there were no differences across the conditions. We created the following dummy code of condition as IV (*letter-to-future* = 1, *letter-from-future* = 1, and control = 0). The DVs of increased negative/positive affect were added, and the increased temporal distancing was used as a mediator (Figure 2). Difference scores were used as the increased scores, which were calculated by subtracting pre-test scores from post-test scores, such that higher positive scores reflect greater increases (and negative scores reflect decreases) after the manipulation. The results of mediation analyses with bias-corrected bootstrapping method ($n = 5,000$) showed that the associations between the conditions and increased negative/positive affect were significantly mediated by increased temporal distancing (estimate = $-0.047, p < .001, 95\% \text{ CI} = -0.025 \text{ to } -0.077$ for increased negative affect; and estimate = $0.048; p < .001, 95\% \text{ CI} = 0.024 \text{ to } 0.080$ for increased positive affect).⁴ Further, when controlling for age, gender, future expectation of COVID-19, and the number of characters in the present daily life description, the results of mediation analyses remained the same as analyses without covariates. Temporal distancing was a significant mediator (estimate = $-0.049, p < .001, 95\% \text{ CI} = -0.026 \text{ to } -0.081$ for increased negative affect; and estimate = $0.049; p < .001, 95\% \text{ CI} = 0.026 \text{ to } 0.085$ for increased positive affect).

Analyses indicate that both letter conditions led to increases in positive affect and decreases in negative affect in part due to the effect of letter writing on temporal distancing.

DISCUSSION

This study aimed to determine whether letter writing to/from one's future self could decrease negative affect and increase positive affect during a stressful present. As predicted in Hypothesis 1, both letter writing to and from one's future self was more effective in mitigating negative affect and

fostering positive affect than focusing only on the current situation. Consistent with Hypothesis 2, letter writing also increased temporal distancing, which mediated the changes in affect. This is an important step toward understanding the mechanism underlying the sending of a letter to/from one's future self; communicating with one's post-COVID future self may play a role in inhibiting negative affect because it can help individuals see the bigger picture of a difficult situation and help them recognize that "this too shall pass." This research complements and extends previous studies, which have found that putting stressful events into a broader temporal perspective can reduce distress (Ahmed et al., 2018; Bruehlman-Senecal & Ayduk, 2015; Bruehlman-Senecal et al., 2016; Macrae et al., 2015, 2016; Yanagisawa et al., 2011). Specifically, this study tests the efficacy of broadening temporal perspective for a unique and unprecedented stressor and also introduces and tests a different technique to elicit distanced perspective: Letter writing with one's future self can help individuals broaden their perspective on their current situation in ways that may be quite meaningful and engaging.

This is the first study to provide evidence that letter writing with future self promotes not only academic, career-related, healthy, and ethical (Barnett et al., 2019; Chishima & Wilson, 2020; Rutchick et al., 2018; Van Gelder et al., 2013) attitudes, but also well-being. This contributes to the accumulating volume of evidence in the area of cross-temporal letter-writing research by investigating its impact on well-being. During this pandemic, attention must be paid not only to physical health but also to mental health. As Liu et al. (2020) suggested, online mental health service is needed, and the letter-writing exercise is a guided activity that people could complete online with a counselor or independently at home.

Limitations and future directions

The current study had several limitations that deserve mentioning. First, as with many brief interventions, a single-session activity may not have long-lasting effects—the longevity of these effects is not yet known. However, activities such as these have the potential to contribute to lasting change if the manipulation triggers an altered pattern of thinking that becomes recursive (repeatedly activated in specific contexts over time; Walton & Wilson, 2018). Indeed, previous research showed that students who exchanged letters with a future self improved in their career planning two months later, suggesting some potential for letter writing to have a lasting effect (Chishima & Wilson, 2020). Another way to strengthen the longevity of the impact might be to introduce repeated interventions over time. It is also worth noting that because participants completed the full study in a single session, they completed the affect and distancing measures twice in a relatively brief time span. On the one hand, this could create consistency pressure (to not change responses). On the other hand, it is possible that it led participants to feel they should alter their responses on the second measure. Although it seems unlikely that the effects are explained entirely due to repeated testing, future research should include a greater interval between pre- and post-tests to both address this possibility and determine the longevity of these effects.

Second, those in the control condition only wrote about their daily lives in the pandemic situation. It is conceivable that the simple act of writing any letter would have an effect. Future studies might include a control condition that includes a task of similar writing time, such as letter writing to a friend (Barnett et al., 2019), letter writing to future self in one day or one week, or simply an expressive writing task (Pennebaker, 1997). However, the observation that the effect of letter writing on affect was mediated through temporal distancing strongly suggests that the process of reflecting on a temporally extended self played an important role.

Third, the study was conducted during a pandemic at a time that was likely stressful and high in upheaval for many participants. We cannot compare these results with how the same task would play out during a different present content. In other words, we cannot make claims about the generalizability of this technique to other times or stressor types. Would this letter-writing technique benefit well-being at a time when the present is not stressful? Would its effects differ when the stressor is temporally bound (such as COVID-19) or permanent (such as living with a chronic illness)? Future research should examine these promising directions, given the robust preliminary evidence that corresponding to one's future self improves affect during an unprecedented time of stress.

Fourth, we included two different versions of a letter-writing task (writing a letter to or from the future). This inclusion was exploratory; it is conceivable in some cases that these different letter-writing tasks would have different effects or operate via somewhat different mechanisms (for instance, the letter-to-future might allow people to distract from present circumstances; whereas a letter-from-future might allow people to reflect on the present from a more removed perspective). Future studies could explore additional mechanisms that may be especially present in one or the other letter-writing condition; nonetheless, in the current study both letter-writing activities showed a clear effect on the mechanism of temporal distancing (of equal effect size).

Lastly, the sample in this study only comprised Japanese people. Although there is value in increasing research on demographically and culturally diverse, non-WEIRD (Western, educated, industrialized, rich, and democratic) samples (Henrich et al., 2010) in psychology in general, the cross-cultural adaptability of letter-writing tasks and its downstream effects should be tested across cultures. Although letter-writing tasks have been found to be effective in both East Asian (e.g. Chishima & Wilson, 2020) and Western (e.g. Rutchick et al., 2018; Van Gelder et al., 2013) samples, no research has examined cross-cultural differences *per se*. There are two possible reasons that East Asians might find these tasks easier or more effective than Westerners. First, East Asians are more likely to naturally feel connected or close to their future self compared with North Americans (Ji et al., 2019; Lee et al., 2011) and as such may find it easier to imagine and communicate with their future self. Second, East Asians have the unique lay theory that everything is unpredictable, dynamically changing, and in constant flux, called “dialecticism” (Nisbett et al., 2001; Peng & Nisbett, 1999; Spencer-Rodgers et al., 2009, 2010). This flexible cognition might promote understanding that this difficult situation will be temporally bound and will not last permanently. Future research should be done in other countries to understand both the efficacy of these interventions and the cross-cultural nature of these temporal cognitions.

CONCLUSION

In conclusion, this study has demonstrated that both letter writing to the future self and letter writing in the perspective of the future self to the present self have a positive impact on well-being in times of unprecedented stressful situations. The communication with one's future self serves as a means to temporally distance oneself from the anxiety of the present and to take a broader perspective in a larger time frame. This simple exercise can help people see things in a new light during moments of despair. We thus cautiously recommend it as one personal strategy for those seeking peace and reassurance during this pandemic.

ACKNOWLEDGEMENTS

The authors declare there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. This research was financially supported by grants from the Japanese Society for the Promotion of Science.

CONFLICT OF INTEREST

The authors declare there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

ETHICAL STATEMENTS

All study participants provided informed consent, and the study design was approved by the ethics review board in Kyoto University (Ref. 30-P-24).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ORCID

Yuta Chishima  <https://orcid.org/0000-0003-2832-769X>

ENDNOTE

¹ We used two platforms to get a greater number of participants in a short time frame; platform cannot create a confound as participants in both platforms were randomly assigned to the same conditions. Platform demographic characteristics differed in some small ways: Age was higher in Lancers ($M = 40.09$) than in CrowdWorks ($M = 36.55$), $t(736) = 4.42$, $p < .001$, $d = 0.34$. CrowdWorks has more female participants (68.5%) than Lancers (47.5%), $\chi^2 = 29.74$, $p < .001$, $V = 0.20$. Lancers participants wrote their daily life slightly more ($M = 192.19$) than CrowdWorks participants ($M = 175.66$), $t(736) = 1.74$, $p = .010$, $d = 0.13$. Future expectations did not differ across platforms, $t(736) = 0.73$, $p = .464$, $d = 0.06$. Despite these minor differences, preliminary analyses including platform as a factor showed no significant effects of platform. Therefore, the two samples were collapsed for all analyses.

² We anticipated that this item would not make much sense in the control condition.

³ We wondered whether the positive effects of letter writing would be limited to those who expected the future to be brighter. We did not have any a priori hypothesis about this question, but investigating it allows us to determine whether effects are specifically due to focusing on an optimistic future or due to a more general process of temporal distancing and abstraction. To analyze the influence of future expectations, we conducted 3-way mixed ANOVA including future expectations (Worse, Same, Better) \times (Time: Pre/Post) \times (Condition: Letter to versus Letter from versus Control). The same significant Time \times Condition 2-way interactions emerged as reported in the manuscript; importantly, these were not qualified by a 3-way mixed ANOVA ($p = .921$, $\eta_p^2 = 0.00$ for negative affect; $p = .651$, $\eta_p^2 = 0.00$ for positive affect; and $p = .118$, $\eta_p^2 = 0.01$ for temporal distancing). These results reveal that the effects of letter writing were observed regardless of people's future expectation, demonstrating that even participants who were pessimistic about the pandemic in one year benefited from the letter-writing task.

⁴ We ran the same analyses using the dummy codes created separately by conditions (*letter-to-future* = 1, control = 0; or *letter-from-future* = 1, control = 0). The results using the dummy code with *letter-to-future* showed significant mediation effects for increased temporal distancing (estimate = -0.052 ; $p = .001$; 95% *CI* = -0.025 to -0.088 for increased negative affect; estimate = 0.047 ; $p = .007$; 95% *CI* = 0.024 to 0.080 for increased positive affect). Similarly, the results using the dummy code with *letter-from-future* showed significant mediation effects for increased temporal distancing (estimate = -0.032 ; $p = .026$; 95% *CI* = -0.011 to -0.070 for increased negative affect; and estimate = 0.032 ; $p = .031$; 95% *CI* = 0.009 to 0.069 for increased positive affect).

REFERENCES

- Ahmed, S. P., Somerville, L. H., & Sebastian, C. L. (2018). Using temporal distancing to regulate emotion in adolescence: Modulation by reactive aggression. *Cognition and Emotion*, *32*(4), 812–826. <https://doi.org/10.1080/0269931.2017.1358698>
- Ayduk, Ö., & Kross, E. (2010). From a distance: Implications of spontaneous self-distancing for adaptive self-reflection. *Journal of Personality and Social Psychology*, *98*(5), 809–829. <https://doi.org/10.1037/a0019205>
- Barnett, M. D., Hernandez, J., & Melugin, P. R. (2019). Influence of future possible selves on outcome expectancies, intended behavior, and academic performance. *Psychological Reports*, *122*(6), 2320–2330. <https://doi.org/10.1177/0033294118806483>
- Brislin, R. W. (1986). The wording of translation of research instruments. In W. J. Lonner & J. W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137–164). Sage.

- Bruehlman-Senecal, E., & Ayduk, O. (2015). This too shall pass: Temporal distance and the regulation of emotional distress. *Journal of Personality and Social Psychology, 108*(2), 356–375. <https://doi.org/10.1037/a0038324>
- Bruehlman-Senecal, E., Ayduk, Ö., & John, O. P. (2016). Taking the long view: Implications of individual differences in temporal distancing for affect, stress reactivity, and well-being. *Journal of Personality and Social Psychology, 111*(4), 610–635. <https://doi.org/10.1037/pspp0000103>
- Chishima, Y., & Wilson, A. E. (2020). Conversation with a future self: A letter-exchange exercise enhances student self-continuity, career planning and academic thinking. *Self and Identity, 1*–26. Advance online publication. <https://doi.org/10.1080/15298868.2020.1754283>
- Duan, L., & Zhu, G. (2020). Psychological interventions for people affected by the COVID-19 epidemic. *The Lancet Psychiatry, 7*(4), 300–302. [https://doi.org/10.1016/S2215-0366\(20\)30073-0](https://doi.org/10.1016/S2215-0366(20)30073-0)
- Gardner, P. J., & Moallef, P. (2015). Psychological impact on SARS survivors: Critical review of the English language literature. *Canadian Psychology/Psychologie Canadienne, 56*(1), 123–135. <https://doi.org/10.1037/a0037973>
- Garfin, D. R., Silver, R. C., & Holman, E. A. (2020). The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure. *Health Psychology, 39*(5), 355–357. <https://doi.org/10.1037/hea0000875>
- Hawryluck, L., Gold, W. L., Robinson, S., Pogorski, S., Galea, S., & Styra, R. (2004). SARS control and psychological effects of quarantine, Toronto. *Canada. Emerging Infectious Diseases, 10*(7), 1206–1212. <https://doi.org/10.3201/eid1007.030703>
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*, 61–83. <https://doi.org/10.1017/S0140525X0999152X>
- Ji, L. J., Hong, E. K., Guo, T., Zhang, Z., Su, Y., & Li, Y. (2019). Culture, psychological proximity to the past and future, and self-continuity. *European Journal of Social Psychology, 49*(4), 735–747. <https://doi.org/10.1002/ejsp.2544>
- Kross, E., & Ayduk, O. (2017). Self-distancing: Theory, research, and current directions. In J. M. Olson (Ed.), *Advances in experimental social psychology*, Vol. 55 (pp. 81–136). Elsevier Academic Press.
- Kross, E., Bruehlman-Senecal, E., Park, J., Burson, A., Dougherty, A., Shablack, H., Bremner, R., Moser, J., & Ayduk, O. (2014). Self-talk as a regulatory mechanism: How you do it matters. *Journal of Personality and Social Psychology, 106*(2), 304–324. <https://doi.org/10.1037/a0035173>
- Kross, E., Gard, D., Deldin, P., Clifton, J., & Ayduk, O. (2012). “Asking why” from a distance: Its cognitive and emotional consequences for people with major depressive disorder. *Journal of Abnormal Psychology, 121*(3), 559–569. <https://doi.org/10.1037/a0028808>
- Lee, S., Lee, A. Y., & Kern, M. C. (2011). Viewing time through the lens of the self: The fit effect of self-construal and temporal distance on task perception. *European Journal of Social Psychology, 41*(2), 191–200. <https://doi.org/10.1002/ejsp.765>
- Liu, S., Yang, L., Zhang, C., Xiang, Y. T., Liu, Z., Hu, S., & Zhang, B. (2020). Online mental health services in China during the COVID-19 outbreak. *The Lancet Psychiatry, 7*(4), e17–e18. [https://doi.org/10.1016/S2215-0366\(20\)30077-8](https://doi.org/10.1016/S2215-0366(20)30077-8)
- Macrae, C. N., Mitchell, J. P., McNamara, D. L., Golubickis, M., Andreou, K., Møller, S., Peytcheva, K., Falben, J. K., & Christian, B. M. (2016). Noticing future me: Reducing egocentrism through mental imagery. *Personality and Social Psychology Bulletin, 42*(7), 855–863. <https://doi.org/10.1177/0146167216644961>
- Macrae, C. N., Mitchell, J. P., Tait, K. A., McNamara, D. L., Golubickis, M., Topalidis, P. P., & Christian, B. M. (2015). Turning I into me: Imagining your future self. *Consciousness and Cognition: An International Journal, 37*, 207–213. <https://doi.org/10.1016/j.concog.2015.09.009>
- Macromill(2020) Macromill Weekly Index. www.macromill.com/data_and_insights/weeklyindex/
- Cross Marketing (2020). *Third survey report about the effect of new coronavirus*. Cross Marketing. www.cross-m.co.jp/report/health/20200417corona/?Download
- Moser, J. S., Dougherty, A., Mattson, W. I., Katz, B., Moran, T. P., Guevarra, D., Shavlack, H., Ayduk, O., Joides, J., Berman, M. G., & Kross, E. (2017). Third-person self-talk facilitates emotion regulation without engaging cognitive control: Converging evidence from ERP and fMRI. *Scientific Reports, 7*(1), 1–9. <https://doi.org/10.1038/s41598-017-04047-3>
- Nifty (2020). Questionnaire and ranking about new coronavirus infection. *Nifty News*. https://chosa.nifty.com/medical/chosa_report_A20200403/
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review, 108*(2), 291–310. <https://doi.org/10.1037/0033-295X.108.2.291>

- Oda, Y., Takano, R., Abe, T., & Kikuchi, K. (2015). Development of the emotion and arousal checklist (EACL). *The Japanese Psychological Research*, 85(6), 579–589. <https://doi.org/10.4992/jjpsy.85.13231>
- Peng, K., & Nisbett, R. E. (1999). Culture, dialectics, and reasoning about contradiction. *American Psychologist*, 54(9), 741–754. <https://doi.org/10.1037/0003-066X.54.9.741>
- Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science*, 8(3), 162–166. <https://doi.org/10.1111/j.1467-9280.1997.tb00403.x>
- Probst, T. M., Sinclair, R. R., Sears, L. E., Gailey, N. J., Black, K. J., & Cheung, J. H. (2018). Economic stress and well-being: Does population health context matter? *Journal of Applied Psychology*, 103(9), 959–979. <https://doi.org/10.1037/apl0000309>
- Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *General Psychiatry*, 33(2), e100213–e100213. <https://doi.org/10.1136/gpsych-2020-100213>
- Rutchick, A. M., Slepian, M. L., Reyes, M. O., Pleskus, L. N., & Hershfield, H. E. (2018). Future self-continuity is associated with improved health and increases exercise behavior. *Journal of Experimental Psychology: Applied*, 24(1), 72–80. <https://doi.org/10.1037/xap0000153>
- Schartau, P. E. S., Dalgleish, T., & Dunn, B. D. (2009). Seeing the bigger picture: Training in perspective broadening reduces self-reported affect and psychophysiological response to distressing films and autobiographical memories. *Journal of Abnormal Psychology*, 118(1), 15–27. <https://doi.org/10.1037/a0012906>
- Spencer-Rodgers, J., Boucher, H. C., Mori, S. C., Wang, L., & Peng, K. (2009). The dialectical self-concept: Contradiction, change, and holism in East Asian cultures. *Personality and Social Psychology Bulletin*, 35(1), 29–44. <https://doi.org/10.1177/0146167208325772>
- Spencer-Rodgers, J., Williams, M. J., & Peng, K. (2010). Cultural differences in expectations of change and tolerance for contradiction: A decade of empirical research. *Personality and Social Psychology Review*, 14(3), 296–312. <https://doi.org/10.1177/1088868310362982>
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, 110(3), 403–421. <https://doi.org/10.1037/0033-295X.110.3.403>
- Van Gelder, J. L., Hershfield, H. E., & Nordgren, L. F. (2013). Vividness of the future self predicts delinquency. *Psychological Science*, 24(6), 974–980. <https://doi.org/10.1177/0956797612465197>
- Van Gelder, J. L., Luciano, E. C., Weulen Kranenbarg, M., & Hershfield, H. E. (2015). Friends with my future self: Longitudinal vividness intervention reduces delinquency. *Criminology*, 53(2), 158–179. <https://doi.org/10.1111/1745-9125.12064>
- Walton, G. M., & Wilson, T. D. (2018). Wise interventions: Psychological remedies for social and personal problems. *Psychological Review*, 125, 617–655. <https://doi.org/10.1037/rev0000115>
- Yanagisawa, K., Masui, K., Furutani, K., Nomura, M., Yoshida, H., & Ura, M. (2011). Temporal distance insulates against immediate social pain: An NIRS study of social exclusion. *Social Neuroscience*, 6(4), 377–387. <https://doi.org/10.1080/17470919.2011.559127>
- Zhang, J., Lu, H., Zeng, H., Zhang, S., Du, Q., Jiang, T., & Du, B. (2020). The differential psychological distress of populations affected by the COVID-19 pandemic. *Brain, Behavior, and Immunity*, 87, 49–50. <https://doi.org/10.1016/j.bbi.2020.04.031>

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.
Supplementary Material

How to cite this article: Chishima Y, Huai-Ching Liu I, E. Wilson A. Temporal distancing during the COVID-19 pandemic: Letter writing with future self can mitigate negative affect. *Appl Psychol Health Well-Being*. 2021;13:406–418. <https://doi.org/10.1111/aphw.12256>