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Abstract

An individual's outlook on society can change over time and can be related to both their physical and mental health. Here, we developed an instrument to measure outlooks on the past and future in relation to the present in 413 adults ranging in age from 18 to 80 years. Exploratory and confirmatory factor analyses were conducted on independent samples and test–retest reliability was assessed in a subset of participants. Construct validity of the two past and future scales was assessed by relating them to 1) pre-existing scales measuring related constructs, and 2) beliefs and safety behaviors during the COVID-19 pandemic. The final Bright or Bleak Scale (BOBS) consists of a past and future scale, each with two factors measuring societal and personal outlooks. Brighter future societal and personal outlooks were positively associated with longer future time perspectives, while self-reporting a higher likelihood of already having contracted COVID-19 was related to bleaker past societal and personal outlooks.

Keywords

aging, life satisfaction, mental health, COVID-19, societal outlooks

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Is the Future Bright or Bleak? Assessing Past and Future Outlooks Across the Adult Lifespan

The past 40 years have brought a wealth of new products, technology, and modernized forms of healthcare which have transformed the ways people in society socialize, conduct business, and begin families. Despite providing higher standards of living, these new technologies have required increased energy consumption in industrialized nations and increased carbon dioxide emissions, which are contributing to global climate change and an uncertain future for humanity (Chang & Lee, 2008). The ever-changing societal landscape is multifaceted (i.e., environmental, social, economic), and the lens through which people view these changes may be influenced by both historical and personal life experiences. From a historical perspective, the Civil Rights Act contributed to progressive legislation on issues such as affirmative action and sexual harassment (Aiken et al., 2013), illustrating

progress from the past to the present. Yet, an overrepresentation of COVID-19 deaths in Black American communities has further exacerbated the already-present systemic barriers to accessing adequate healthcare faced by communities of color (Leitch et al., 2020). In both contexts, some may perceive the past as bleaker than now, especially for those who have faced systemic or personal tragedies, be it discrimination or losing their loved ones during the pandemic.

Global changes and events may also shape personal and societal perceptions of the future. In a survey investigating the relationship between beliefs about globalization and

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perceptions of society, people thought future society would be more affluent, but less moral (Kashima et al., 2011). Today, the civil unrest due to continued police brutality against Black individuals, including the murder of George Floyd, has underscored the need for the Black Lives Matter movement and reinvigorated broader societal participation in social movements calling for large structural changes to ultimately achieve a brighter, more equitable future society. Thus, outlooks on the past may be informed by historical events either lived through or observed, and present challenges and movements may subsequently shape outlooks on the future.

Though these findings inform our knowledge of the relationship between personal beliefs and evaluations of the past, present, and future of society, more work is needed to understand the influence of past and future perspectives of society on present-day behavior, mental health, and well-being. In the present study, we designed and validated an instrument to measure personal and societal outlooks of the past and future compared to the present day.

Theoretical Motivation

Socioemotional Selectivity Theory (SST; Carstensen, 2006) posits that as people age and their future time expansion becomes more limited, people shift their focus from future- to present-oriented goals, such as obtaining satisfaction and emotional meaning. However, such shifts can also occur in situations when people are reminded of the fragility of their own lives (e.g., the Severe Acute Respiratory Syndrome epidemic in Hong Kong; Fung & Carstensen, 2006). Similarly, a global pandemic (i.e., novel coronavirus disease 2019; COVID-19) may constrain perceptions of future time expansion, causing a shift in goals and outlooks of the future, especially since COVID-19 has disrupted daily life for many and has engendered heightened feelings of uncertainty about the future (Polizzi et al., 2020).

Perceptions of the Present on the Future and the Past. Although people's goals might shift due to acute circumstances, maintaining feelings of hopefulness can be beneficial for the mental health of people experiencing stressful events, such as wildfires or terrorist attacks (Holman, 2015). Hope may also be important for coping during the COVID-19 pandemic. Research has suggested that joint decreases in life satisfaction and feelings of hope experienced during the COVID-19 pandemic could impact the amount of stress due to COVID-19 people experience (Trzebiński et al., 2020). At the onset of COVID-19, some older adults demonstrated a decrease in preventative health behaviors driven by one's levels of optimism (Pasion et al., 2020). Consistent with SST, these findings highlight how aging impacts one's outlook on life, especially during stressful periods. Older adults are more optimistic in general (Arrindell et al., 1999), have higher expectations regarding aging well, and report being more concerned about COVID-19 specifically relative to younger

adults (Whatley et al., 2020). Though, due to a longer future time perspective, younger adults may have more motivation to maintain goals and hope for the future relative to older adults. Thus, age may be a factor contributing to outlooks on the future of society, in addition to outlooks for one's personal life.

Current life circumstances can shape perceptions not only of the future but also of the past. Such perceptions of the past can affect current well-being (Carstensen & Mikels, 2005), and failing to accept the past can lead to depressive symptoms (Santor & Zuroff, 1994). Present behavior, such as procrastination, can also be influenced by negative perceptions of the past (Jackson et al., 2003). Furthermore, aging may independently impact outlooks on the past. Qualitative evidence suggests that successful aging is related to accepting the past (Reichstadt et al., 2010), and quantitative evidence suggests that negative affect in memories is forgotten more often than positive affect in memories (Skowronski et al., 2014). This shift in the emotional affect of memories increases with age, potentially helping older adults regulate their current emotional state (Conway & Pleydell-Pearce, 2000). Together, perceptions of the future and past may impact decision-making, health, and well-being in the present.

Effects of Physical Distancing on Mental Health During COVID-19. The COVID-19 pandemic has resulted in a decrease in social interactions, increasing feelings of isolation in older adults due to living alone or in assisted living facilities (Pasion et al., 2020), as well as a decrease in social events in younger adults. These social declines, combined with other life changes (e.g., financial stressors), have led to spikes in depression rates in adults of all ages (Ettman et al., 2020). Prior to the pandemic, people with higher neuroticism tended to have more frequent health-related Internet searches, and these searches tended to be positively related to age (Bogg & Vo, 2014). On the contrary, COVID-19 may prompt people to engage in more frequent health-related Internet searches out of fear to ultimately protect themselves from the virus (Du et al., 2020), and expectedly such an effect would be stronger in people with higher neuroticism. Given that both depression and neuroticism can color one's perceptions negatively beyond what the present circumstances might warrant (Scheier et al., 1994), the present study accounted for individual differences in depressive symptoms and neuroticism, especially when so many people have faced financial, mental health, and other obstacles due to COVID-19.

Development and Validation of the Bright or Bleak Scale (BOBS)

In the current study, we developed an instrument to measure outlooks on the past and future, and examined the reliability and validity of the instrument in a diverse lifespan sample. By independently assessing outlooks at both time scales, we

could identify the potential existence of temporal asymmetries in such perspectives (cf. McDonough & Gallo, 2010, 2013). Creating and validating these instruments across the adult lifespan afforded us an opportunity to test for relationships with age in these outlooks. The new scales were tested in independent samples, and reliability was assessed in a subset of the original sample. Validity of these two new scales was assessed by relating them to (a) existing scales measuring overlapping (but perhaps distinct ideas) and (b) health behaviors associated with COVID-19. The existing validation scales were related to sociodemographics (age, education, and financial stability), health (subjective age, expectations regarding age, and dementia risk), well-being (satisfaction with life and hope), and temporal orientation (accepting the past and future time perspective). Given the potential for substantial influences of depressive symptoms and neuroticism on past and future outlooks on life, we report associations with the validation measures both prior to and after accounting for those influences.

Methods

Participants

The survey was given to 413 participants residing in the United States via CloudResearch's MTurk Toolkit online platform (<https://www.cloudresearch.com/products/turkprime-turk-toolkit/>) that optimizes recruitment through Amazon Mechanical Turk (MTurk) and aides in preventing data quality issues (e.g., fraud, inattentiveness; Litman et al., 2017). Such methods offer reliable and effective data collection for psychological research when compared to traditional in-lab testing for behavioral tasks (Siegel et al., 2020). MTurk workers compared with a national U.S. census-matched normative sample supplied similar quality data across a variety of psychological dimensions while also uncovering characteristics of higher negative affect and lower social engagement (McCredie & Morey, 2019). Other comparison studies have found a high degree of generalization and also an increased range of responses, including higher rates of neuroticism (Goodman et al., 2013) and social detachment (Miller et al., 2017).

The initial sample ($n = 207$) was collected between August 7, 2020 and August 13, 2020, and a subsample ($n = 92$) retook portions of the survey on September 18, 2020 for test-retest reliability. Two new confirmatory samples ($n = 206$) were collected between September 9, 2020 and September 27, 2020 that did not include the re-tested participants. Across all participants, ages ranged from 18 to 80 years ($M = 43.31$ years, $SD = 17.75$ years), and additional effort was made to recruit ethnoracial minorities using demographic filters on CloudResearch's MTurk Toolkit to provide a diverse and more generalizable set of perspectives (see [Supplementary Appendix A Table 1](#)). Although we hesitate to claim that the samples are nationally representative, they were highly

diverse with respect to age, socioeconomic status, and ethnoracial group.

We also acknowledge that various regions and nations across the globe have experienced differential government and societal responses and impact with respect to the COVID-19 pandemic. Across the United States, the state of COVID-19 rapidly evolved during periods of data collection for this study; thus, re-tested participants refers to initial responses to the survey items from the present situation in which they referred to when responding the second time. The changing context during data collection included the following: on August 11, 2020, the Trump administration reportedly made a \$1.5 billion (USD) deal with Moderna for 100 million vaccine doses. During the 1-month period between initial data collection and the collection of both the test-retest and confirmatory samples, COVID-19 became the third-leading cause of death in the United States and the first reinfection case was reported in the United States (see <https://www.ajmc.com/view/a-timeline-of-covid19-developments-in-2020> for a timeline of key COVID-19 developments in 2020). Despite these developments, we expected individual circumstances to remain fairly stable across timepoints.

Materials

Existing Scales Used to Assess Construct Validity. Using the final version of the BOBS, we provided evidence for construct validity by demonstrating relationships with expected similar questionnaires collapsing across the two confirmatory samples. These tests also shed light on how perceptions of the past and future are tightly coupled (i.e., a general positive outlook) or whether asymmetries exist such that each is assessing qualitatively different types of positive outlooks. The scales used for these validation purposes were: life satisfaction measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985), how much one has accepted the past measured by the Accepting the Past scale (ACPAST; Santor & Zuroff, 1994), one's risk for dementia measured by The Lifestyle for BRAin health index (LIBRA; Deckers et al., 2019), one's expectations about aging measured by the Expectations Regarding Aging scale (ERA; Sarkisian et al., 2005), hope measured by the Revised Life Orientation Test (LOT-R; Scheier et al., 1994), future time expansion measured by the Future Time Perspective Scale (FTPS; Carstensen & Lang, 1996), socioeconomic status measured by Economic Strain (Pearlin et al., 1981), depression measured by the Center for Epidemiological Studies Depression Scale (CESD; Radloff, 1977), and neuroticism measured by the Midlife Development Inventory (MIDI; Lachman & Weaver, 1997). Extended descriptions of these scales can be found in [Supplementary Appendix B](#). Because of the many correlations conducted with these measures, we set our alpha threshold to .005 (Benjamin et al., 2018). We conducted analyses both prior to and after accounting for depressive symptoms and neuroticism as recommended for

observational studies (Von Elm et al., 2007). For brevity, we report the results after accounting for these influences only if the relationships were no longer significant.

Survey Development. Thirty-two questions distributed across six categories (products, technology, health, social, family, and “overall” perceptions) were created to gauge one’s outlook on either the past or future in comparison with today. Two methods were used to increase face validity of the scales. First, each item was reviewed by three experts in the field of aging with a combined experience of 41 years such that each item represented a personal or societal concern that has been encountered or might be encountered by aging adults. Second, two free-response questions were asked at the end of each block prompting participants to describe why they thought the past/future was/will be *bright* or *bleak*, which were used to validate the content of the questions. A *past* and *future* version of these questions were created such that the statements were to be compared either to one’s perception of life (or belief of what life was like) 40 years ago or to one’s perceptions of life 40 years from now (regardless of whether the person was/will be alive at either time). We used a 40-year

outlook to help people focus on “big picture” perspectives outside of recent day-to-day experiences. Additionally, using a specific year anchored everyone to a common timeline rather than vaguely specifying the “future” or “past.” All questions were rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Each set of questions were blocked such that all the past items or all the future items came first. Following elimination of items (see Results), the final scales each consisted of nine items from the health, social, family, and “overall” perceptions categories (see Tables 1 and 2).

Procedure

The first section of the survey consisted of blocks of either the past or future questions, counterbalanced across participants. For confirmatory samples, the middle section of the survey consisted of a subset of validation questionnaires. A subset of the validating questionnaires was used in both the original and retest participants; however, given the original sample was not independent from the creation of the questionnaire, we did not conduct correlations between BOBS and the established measures for those participants. The last section

Table 1. Standardized Loadings for the Final Confirmatory Factor Analysis for BOBS Past Scale.

Item	Final CFA	
	F1	F2
The world is a better place now than it was 40 years ago. (R)	.69	—
A child born today is better off than a child born 40 years ago. (R)	.53	—
When playing around the neighborhood unsupervised, children are safer today than in the past. (R)	.60	—
Older adults are living a better life now than in the past. (R)	.47	—
The government plays a more positive role in our life now than in the past. (R)	.73	—
Today it is better to raise a child in this country than another country compared to the past. (R)	.52	—
Overall, the past was bleak for my friends and family. (R)	—	.89
Overall, the past was bleak for me. (R)	—	.70
Overall, the past was bleak for humankind. (R)	—	.66

Notes: R = reverse-scored items. Items were scored so that a higher value indicates a “brighter” attitude across scales.

Table 2. Standardized Loadings for the Final Confirmatory Factor Analysis for BOBS Future Scale.

Item	Final CFA	
	F1	F2
A child born 40 years from now will be better off than a child born today.	.59	—
It will be easier in the future for an average middle-income American to become financially secure than it is today.	.63	—
People will be healthier in the future than today.	.70	—
When playing around the neighborhood unsupervised, children will be safer in the future than today.	.57	—
Older adults will live a better life in the future than now.	.66	—
It will be easier to maintain friendships in the future.	.56	—
Overall, the future is bleak for my friends and family. (R)	—	.88
Overall, the future is bleak for me. (R)	—	.78
Overall, the future is bleak for humankind. (R)	—	.77

Notes: R = reverse-scored items. Items were scored so that a higher value indicates a “brighter” attitude across scales.

always consisted of demographic and health questions, and questions asking participants to rate how likely it is that they have already contracted/will contract COVID-19, how many friends/family members have tested positive for COVID-19, how worried friends/family are about contracting COVID-19, and how well they have been following quarantine guidelines for their geographic area. Participants who completed at least the past or future questions were included in the sample to have as many data points as possible. All study procedures were approved by the Institutional Review Boards of the University of California, Los Angeles, and the University of Alabama.

Results

Exploratory and Confirmatory Factor Analyses

The first sample ($n = 207$) was used to conduct exploratory factor analyses to reduce the number of survey items. These results can be found in the Supplementary Materials. Free responses indicated that the questionnaire, overall, evoked thoughts about social, economic, COVID-19, quality of life, and family issues (for sample quotes from participants see [Supplementary Table S4](#)). These responses provide insight into the factors being considered by participants and, for some, how the pandemic was an influence.

The resulting set of items were given to 103 new participants and entered into two separate confirmatory factor analyses (CFAs): one for the past and one for the future items. For the past model, the standardized factor loadings ranged from .30 to .81. The model fit was not adequate [CFI = .93, TLI = .91, RMSEA = .067, 90% CI (.014, .11); $\chi^2(34) = 49.5$, $p = .042$]. Furthermore, Factor 1 showed questionable reliability (Cronbach's $\alpha = .69$, McDonald's $\omega = .70$). Factor 2 demonstrated good reliability (Cronbach's $\alpha = .83$, McDonald's $\omega = .83$). Modification indices suggested that two items could be contributing to the poor fits (MI = 4.07 and 7.34), thus we removed them from the survey. For the future model, the standardized factor loadings ranged from .47 to .90 and also had an inadequate model fit [CFI = .85, TLI = .82, RMSEA = .12, 90% CI (.10, .15); $\chi^2(64) = 161$, $p < .001$]. Despite the poor fit, both Factor 1 (Cronbach's $\alpha = .87$, McDonald's $\omega = .88$) and Factor 2 (Cronbach's $\alpha = .87$, McDonald's $\omega = .87$) demonstrated good reliability. Nevertheless, modification indices indicated that several items could be removed to improve the model fit. The standardized loadings for these initial CFAs can be found in [Supplementary Tables S2 and S3](#).

Because of the unsatisfactory model fits, a new sample of 103 participants was given the further reduced survey items. For the past model, the standardized factor loadings ranged from .47 to .89. The model fit was good [CFI = .96, TLI = .91, RMSEA = .059, 90% CI (.00, .10); $\chi^2(26) = 35.4$, $p = .10$]. Factor 1 showed acceptable reliability (Cronbach's $\alpha = .76$,

McDonald's $\omega = .77$) and Factor 2 had acceptable to good reliability (Cronbach's $\alpha = .78$, McDonald's $\omega = .80$). For the future model, the standardized factor loadings ranged from .56 to .88 and had an adequate model fit [CFI = .91, TLI = .87, RMSEA = .10, 90% CI (.06, .14); $\chi^2(26) = 54$, $p = .001$]. Factor 1 (Cronbach's $\alpha = .79$, McDonald's $\omega = .79$) and Factor 2 (Cronbach's $\alpha = .85$, McDonald's $\omega = .85$) indicated acceptable to good reliability. [Tables 1 and 2](#) show the standardized loadings for this final CFA.

All factors were coded so that higher scores represented a brighter past or a brighter future. The final scales are referred to as the Bright or Bleak Scales (BOBS), and the past scale is referred to as the Bright or Bleak Scale Past (BOBS-P) while the future scale is referred to as the Bright or Bleak Scale Future (BOBS-F). We collapsed subsequent correlations across the two confirmatory analyses for simplicity as initial inspections showed no qualitative differences between the correlations in the two samples individually. The final items in the two past factors were correlated with one another, $r(205) = .37$, $p < .001$ as were the two future factors, $r(205) = .33$, $p < .001$. Past Factor 1 ("Past Outlooks on Society") measured outlooks on society in the past compared to today and was correlated with the first ("Future Outlooks on Society") and second ("Personal Outlooks on the Future") future factors, $r(205) = -.62$, $p < .001$ and $r(205) = -.23$, $p < .001$, respectively. Past Factor 2 ("Personal Outlooks on the Past") was correlated with the first and second future factors, $r(205) = -.20$, $p = .004$ and $r(205) = .34$, $p < .001$, respectively.

Test–Retest Reliability

A random subset of participants from the first exploratory sample was asked to retake the reduced survey along with additional validation measures with a retest interval of about 1 month. Past Outlooks on Society showed acceptable reliability (Cronbach's $\alpha = .77$, McDonald's $\omega = .78$). Personal Outlooks on the Past indicated questionable reliability (Cronbach's $\alpha = .67$, McDonald's $\omega = .67$). Future Outlooks on Society indicated good reliability (Cronbach's $\alpha = .82$, McDonald's $\omega = .82$). Personal Outlooks on the Future showed acceptable reliability (Cronbach's $\alpha = .72$, McDonald's $\omega = .72$).

Tests of Construct Validity

A summary of significant Pearson's correlations for all tests of validity can be found in [Table 3](#). Personal Outlooks on the Past and Future were significantly related to depressive symptoms, $r(205) = -.28$, $p < .001$ and $r(205) = -.24$, $p < .001$, respectively, and neuroticism, $r(205) = -.33$, $p < .001$ and $r(205) = -.24$, $p < .001$, respectively. Older age was associated with brighter Past Societal and Personal Outlooks, $r(205) = .28$, $p < .001$ and $r(205) = .42$, $p < .001$, respectively. Older age was not associated with the future scales at our set

Table 3. Summary of Significant Validity Pearson's Correlations.

Correlation Tests of Construct Validity	df	r	p
Personal outlooks on the past, depressive symptoms	205	-.28	<.001
Personal outlooks on the future, depressive symptoms	205	-.24	<.001
Personal outlooks on the past, neuroticism	205	-.33	<.001
Personal outlooks on the future, neuroticism	205	-.24	<.001
Older age, brighter past outlooks on society	205	.28	<.001
Older age, brighter personal outlooks on the past	205	.42	<.001
Brighter past outlooks on society, shorter future time perspective	205	-.24	<.001
Brighter future outlooks on society, longer future time perspective	205	.24	<.001
Personal outlooks on the future, longer future time perspective	205	.32	<.001
Brighter past outlooks on society, lower likelihood of accepting one's past	205	-.34	<.001
Brighter personal outlooks on the past, lower likelihood of accepting one's past	205	-.47	<.001
Higher likelihood of accepting one's past, brighter future outlooks on society	205	.29	<.001
Higher likelihood of accepting one's past, bleaker personal outlooks on the future	205	-.22	.002
Correlation Tests of Predictive Validity	df	r	p
Older subjective age, brighter past outlooks on society	205	.29	<.001
Older subjective age, brighter personal outlooks on the past	205	.39	<.001
Older subjective age, bleaker future outlooks on society	205	-.25	<.001
Bleaker personal outlooks on the past, better-expected aging outcomes for mental health	205	.25	<.001
Bleaker personal outlooks on the future, better expected aging outcomes for mental health	205	.27	<.001
Current satisfaction with life, bleaker past outlooks on society	205	-.23	<.001
Current satisfaction with life, brighter future outlooks on society	205	.23	.001
Greater current financial strain, bleaker personal outlooks on the past	205	-.28	<.001
Greater current financial strain, bleaker personal outlooks on the future	205	-.31	<.001

Notes: Due to the many correlations conducted, significant correlations were identified using an alpha threshold of .005 (see Benjamin et al., 2018).

threshold (Future Societal Outlooks, $p = .011$; Future Personal Outlooks, $p = .97$). Additionally, a brighter Past Societal Outlook was associated with a shorter future time perspective, $r(205) = -.24$, $p < .001$, but brighter Future Societal and Personal Outlooks was associated with a longer future time perspective, $r(205) = .24$, $p < .001$ and $r(205) = .32$, $p < .001$, respectively. No relationship was found between future time perspective and Past Personal Outlooks ($p = .36$).

Brighter Past Societal and Personal Outlooks were associated with lower likelihoods of accepting one's past, $r(205) = -.34$, $p < .001$ and $r(205) = -.47$, $p < .001$, respectively. Although weaker effects were found for the future, higher likelihoods of accepting one's past was associated with brighter Future Societal Outlooks, $r(205) = .29$, $p < .001$, and bleaker Future Personal Outlooks, $r(205) = -.22$, $p = .002$. Accounting for depressive symptoms and neuroticism reduced the latter relationship, $r(203) = -.15$, $p = .034$. Lastly, no relationships between both scales and LOT-R reached our threshold of significance ($ps > .01$).

Tests of Predictive Validity

Here, older subjective age was associated with brighter Past Societal and Personal Outlooks, $r(205) = .29$, $p < .001$ and $r(205) = .39$, $p < .001$, respectively. Older subjective age

was also associated with bleaker Future Societal Outlooks, $r(205) = -.25$, $p < .001$ (Future Personal Outlooks, $p = .51$). We found that bleaker Past and Future Personal Outlooks were associated with better-expected aging outcomes for mental health only, $r(205) = .25$, $p < .001$ and $r(205) = .27$, $p < .001$, respectively. Accounting for depressive symptoms and neuroticism reduced these effects, $r(203) = .13$, $p = .076$ and $r(203) = .18$, $p = .013$, and expectations regarding physical, cognitive, and total health did not relate to Past and Future Societal or Personal Outlooks at our threshold of significance ($ps > .008$). Current satisfaction with life was associated with bleaker Past Societal Outlooks, $r(205) = -.23$, $p < .001$, but brighter Future Societal Outlooks, $r(205) = .23$, $p = .001$. Past and Future Personal Outlooks were not associated with life satisfaction ($ps > .22$). None of the scales were associated with the LIBRA index ($ps > .02$). Lastly, greater current financial strain was associated with bleaker Past and Future Personal Outlooks, $r(205) = -.28$, $p < .001$ and $r(205) = -.31$, $p < .001$, respectively. No significant results were found for the other scales ($ps > .33$).

Past and Future Outlooks During COVID-19

The COVID-19 pandemic offered a unique opportunity to test the BOBS given the varied challenges that adults across the

lifespan have faced throughout the past year. People who believed they were more likely to have already contracted the virus had bleaker Past Societal and Personal Outlooks, $r(205) = -.20, p = .005$ and $r(205) = -.37, p < .001$, respectively. No relationships were found for the future scales that met our significance threshold ($ps > .006$). People who believed they were likely to contract the virus in the next 6 months had bleaker Past and Future Personal Outlooks $r(205) = -.24, p < .001$ and $r(205) = -.29, p < .001$, respectively. Accounting for depressive symptoms and neuroticism reduced the former relationship, $r(203) = -.18, p = .010$. No relationships were found for the other scales ($ps > .03$). Finally, people that were more worried that their friends and family would contract the virus had bleaker Future Societal Outlooks, $r(205) = -.20, p = .004$. None of the other scales reached our significance threshold ($ps > .02$), and none of the scales were related to self-reported efficacy of following quarantining guidelines in their area ($ps > .16$) or the number of people they knew that tested positive for the virus ($ps > .11$).

Discussion

Given that outlooks on the past and future of society are related to present behavior and may change due to major life events (e.g., COVID-19) or with age (e.g., earlier or later in the lifespan), we sought to create and validate an instrument to assess outlooks on the past and future in relation to the present. To validate our new measure, we tested it on an adult lifespan sample. We expected perceptions of the past and future to vary with age and that our scale would be related to already existing scales measuring health, well-being, temporal orientation, and experiences related to the pandemic.

Despite creating parallel items for past and future time perspectives, the best fitting models led to only a small overlap of items, hinting at a dissociation between the two temporal perspectives. The final two temporal scales were only moderately related to one another, providing further evidence of their unique contributions to understanding perceptions over time (i.e., a temporal perspective asymmetry). Within each temporal domain, two factors were present that represented Past and Future *Societal* Outlooks compared to today and Past and Future *Personal* Outlooks in general. Past and Future Societal Outlooks were inversely related to each other, such that brighter Past Societal Outlooks were associated with bleaker Future Societal Outlooks. On the other hand, Past and Future Personal Outlooks were positively related to each other such that brighter Past Personal Outlooks for oneself, friends and family, and humankind were related to brighter Future Personal Outlooks for those same groups. Test-retest analyses indicated acceptable reliability across most scales even amidst changing and uncertain times.

Past perceptions were more aligned with validating questionnaires associated with the past (e.g., ACPAST) and future perceptions were more aligned with questionnaires relating to the future (e.g., FTPS); although some overlap was

observed. For example, brighter Past and Future Personal Outlooks were both related to a lower likelihood of accepting one's past and expectations to contract COVID-19 in the next 6 months. Furthermore, even though ratings on Past and Future Personal Outlooks scales were influenced by depressive symptoms and neuroticism, most of the relationships with other competing scales suggest that these factors were not a large influence on each scale. Other personality factors, such as openness, introversion, and extraversion, were not assessed here, though they may potentially relate to outlooks of the past and future and might be considered in future work.

Perceptions of the past and future did differ with chronological age and future time perspective as would be expected by SST. Older adults perceived the past as brighter than the present while younger adults perceived the future as brighter than the present. Shorter future time perspectives were associated with brighter perceptions of the past whereas longer future time perspectives were associated with brighter perceptions of the future. These relationships are consistent with the idea that older adults often have more limited future time expansion (Carstensen, 2006). In contrast, younger adults likely expect their future time to be more abundant and may remain optimistic about the future, perhaps as a method of coping.

In addition to chronological age, we found that subjective age was also related to past and future outlooks. Older subjective age has been more strongly related to health than actual age, suggesting an important link of this scale to health (Spuling et al., 2013). On the other hand, both age differences highlight the nature of the scale in relation to the temporal projection they were asked to take. Having participants project themselves 40 years into the past might engender outlooks based on a historical perspective rather than one based on lived experiences. Alternatively, if participants do not expect to be living 40 years from now, they may feel detached or less invested in such outlooks, which might affect their responses. Future work might examine age boundary conditions regarding the temporal framing of the BOBS. Additionally, some items (e.g., those related to child-rearing) may prompt different responses at an individual level dependent on one's role in their family system (e.g., parent and grandparent) or experiences living abroad or with immigration. Thus, one's identity or personal experiences may influence how they respond to such items, and future work might consider these factors when using BOBS to assess societal and personal outlooks of the past and future.

Interestingly, the new scales were not simply a new way to measure one's hope or optimism in life as measured by other popular scales like the LOT-R. Although we expected that one's optimism or pessimism would influence one's perceptions of the past and future, the distinctness of these new scales suggests that they may measure novel aspects of optimism compared with the LOT-R. One reason for these differences might have to do with the types of questions assessed by each measure. The LOT-R assesses trait-like factors (e.g., easy to relax and does not get upset easily)

and has a personal orientation [e.g., optimistic about *my* future, expectations going *my* way, and good things happening to *me* (emphases added)]. In contrast, our new scales do not have questions assessing trait-like factors and many of the items assess beliefs about how different groups of people fare, thereby speaking more toward beliefs about society and communities. The one exception is that the Personal Outlook factor is more specific to one's family and oneself but also is much more general than the questions on the LOT-R.

Finally, BOBS was related to attitudes toward COVID-19 such that participants who believed they were more likely to have already contracted the virus had bleaker Past Societal and Personal Outlooks, suggesting that one's health and experience during the pandemic may impact their perceptions of society's and their own personal past. People who believed they were more likely to contract the virus in the next 6 months had bleaker Past *and* Future Personal Outlooks. Interestingly, participants who were more worried that their loved ones would contract the virus had bleaker Future Societal Outlooks, suggesting that worrying about the health of one's loved ones may impact outlooks on the future of society.

The relationship between Past Personal Outlooks and predicted likelihood of contracting COVID-19 in the next 6 months was reduced after accounting for depressive symptoms and neuroticism. The most parsimonious explanation for this reduction is that such past and future perspectives were influenced by the negative outlooks on life that commonly accompany those factors. However, depression might have caused poor outlooks on life that impacted beliefs about the pandemic. Alternatively, events during the pandemic might have caused poor outlooks on life, which in turn increased depressive symptoms. On the other hand, those more likely to be impacted by COVID-19 may have other reasons to have negative outlooks on their personal pasts and futures, such as being part of a historically oppressed group. In the present study, we took a first step at understanding the influences of depressive symptoms and neuroticism by reporting results with and without considering their influences collectively. The reduction in some of the effect sizes suggests that they might be critical causal, mediating, or consequential constructs. Causal conclusions may be better informed by a longitudinal design; therefore, repeated measures data are needed to gain insight into the relationship between depression and the BOBS Personal Outlooks Factor. Additional understanding of these factors, and the BOBS more generally, is needed when the pandemic is no longer looming over us.

In the present study, we validated the BOBS in participants from the United States who were highly diverse across age, class, and ethnoracial group. Though we did not collect information regarding participants' cultural practices and beliefs, future research might investigate how distinct cultural practices, religious beliefs, and traditions may impact one's perceptions of the past and future. Future research also might

investigate the constructs presented here in non-WEIRD (Western, educated, industrialized, rich, and democratic) societies, where cultural values largely deviate from those of the WEIRD societies and may represent differences in responses to the questions distributed across the technological and social categories (e.g., products, technology, health, social, and family) used within our scale. Although gaining a more comprehensive understanding of perceptions of the past and future across other nations and cultures was outside the scope of the present study, we encourage future research to extend these findings in other geographical and cultural contexts.

Conclusion

In conclusion, we developed and validated a reliable comprehensive instrument that measures one's Past and Future Societal and Personal Outlooks. The present instrument might serve as a new window into one's current mental state that represents an evaluation of the past society as compared to today, and predictions for future society compared to today. Given the emphasis on society, the scale might also be used in larger aggregates to take a "pulse" on how communities at different levels are faring. BOBS also captures personal outlooks on the past and future for humankind, with bleaker perspectives associated with depressive symptoms and neuroticism that may be related to a negative overgeneralization to the self (Carver & Ganellen, 1983; Van der Gucht et al., 2014). BOBS may illuminate a new dimension of life satisfaction or personal well-being related to one's status and experiences within their community or society in a broader context, though repeated measures data over longer periods of time are needed to evaluate clinical implications of this instrument. Overall, we have shown that the BOBS is not only moderately related to other similar measures and differs across the adult lifespan but also holds unique predictive value.

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