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An exploration of basic human values in 38 million obituaries over 30 years

David M. Markowitz[a,1], Thomas Mazzuchi[b], Stylianos Syropoulos[c], Kyle Fiore Law[c], and Liane Young[b]

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How societies remember the dead can reveal what people value in life. We analyzed 38 million obituaries from the United States to examine how personal values are encoded in individual and collective legacies. Using Schwartz's theory of basic human values, we found that *tradition* and *benevolence* dominated legacy reflections, while values like *power* and *stimulation* appeared less frequently. Major cultural events—the terrorist attacks of September 11th, the 2008 financial crisis, and the COVID-19 pandemic—were systematically linked to changes in legacy reflections about personal values, with *security* declining after 9/11, *achievement* declining after the financial crisis, and *benevolence* declining for years after COVID-19 began and, to date, not yet returning to baseline. Gender and age of the deceased were also linked to differences in legacy: Men were remembered more for *achievement*, *power*, and *conformity*, while women were remembered more for *benevolence* and *hedonism*. Older people were remembered more for *tradition* and *conformity* than younger people. These patterns shifted dynamically across the lifespan, with obituaries for men showing more age-related variation than legacies for women. Our findings reveal how obituaries serve as psychological and cultural time capsules, preserving not just individual legacies, but also indicating what US society values collectively regarding a life well lived.

legacy | basic human values | obituaries | language

Significance

What signals a life well lived? We addressed this question by examining millions of obituaries over time, across cultural events, and exploring how legacies were modified by demographics of the deceased. The most prevalent personal value in obituaries was *tradition* (e.g., focusing on religion). Cultural events, like the COVID-19 pandemic, linked to changes in legacy reflections as well. For example, care for close others (*benevolence*) decreased throughout the pandemic and never recovered, even 4 y after its start. Finally, legacies of women showed minimal fluctuations with increased age; legacies of men showed more dynamic and systematic age-related changes over time. Obituaries tell an important psychological and cultural story about how societies remember others and what constitutes a meaningful life.

All humans share a common fate in death. Yet, even after death, people live on through the memories of others. This remembrance can take on many forms, but most common is the obituary. Obituaries serve as announcements of deaths and as celebrations of lives. They include brief but rich summaries of people's careers, personal histories, and lifetime accomplishments. In so doing, individual obituaries offer insights into the psychological construction of personal legacies. But, at scale, these narratives also represent an underutilized and distinctive source of data for examining how societies collectively assign value to different kinds of lives. That is, obituaries provide a means of tracing the cultural construction of legacy by revealing broader patterns in who is remembered for what contributions, and how societal values are encoded in everyday acts of remembrance.

The psychology of legacy (e.g., what people want to leave behind for future generations) and legacy motivations (e.g., why people are driven to leave a specific legacy behind) (1–5) are well studied (6, 7). These literatures have largely focused on how living people reflect on their own lives (8) to achieve a semblance of "symbolic immortality," a sense that something of themselves will live beyond their material existence (8). Rarer, however, are investigations into how people reflect on the lives of close and beloved others. These investigations are equally psychologically important because how people remember the deceased relates to meaning-making and continuity in social intergenerational bonds, especially with loved ones who have passed away (9, 10). As humans grapple with mortality (11), how they remember others provides a framework to process and understand their own existence (12), offering a story about how humans interpret a lived experience and what constitutes a "worthy life."

In the current work, we examine the content of millions of US obituaries spanning the last 30 y through the lens of basic human values, which are defined as desirable, situation-independent goals that serve as guiding life principles (13–15). Our text analysis of over 38 million obituaries investigated three critical questions related to these values: a) What values are people most remembered for? b) What is the dynamic nature of legacy and how are legacy reflections related to cultural events?, and c) How do legacy reflections reinforce cultural scripts about what it means to have lived well, as structured by stereotypes about gender and age? We address these questions by using obituaries as psychological and cultural time capsules: narratives that distill a life into its essential parts, revealing the values of both individuals and society. We explore how legacies, en masse, confer symbolic

Author affiliations: [a]Department of Communication, Michigan State University, East Lansing, MI 48824; [b]Department of Psychology and Neuroscience, Boston College, Chestnut Hill, MA 02467; and [c]School of Sustainability, College of Global Futures, Arizona State University, Tempe, AZ 85281

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[1]To whom correspondence may be addressed. Email: dmm@msu.edu.

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immortality not only to individuals, but also to the values and collective experience of society.

Obituaries as Psychological and Cultural Time Capsules. Obituaries are cultural artifacts loaded with meaning (16), and writing one is a deeply intentional and personal act: condensing a life into a few paragraphs that, in most cases, serve as the only public record of the deceased that lives on (17, 18). These expressions are curated highlights of a person's life, including what mattered most to the deceased (e.g., family, professional accomplishments, service to one's country), shared by their close connections. Accordingly, the richness of this information makes obituaries a compelling record of the values for which individuals are most remembered. Consider, for example, how a famous obituary for John Lennon by the New Musical Express began: *"Peace and love. If we are able to take anything from the tragic death of John Lennon—and god knows the senselessness of his murder defies meaning—then it must, paradoxically, be these values we take away from the slaughter on New York's 72nd street last week"* (19). This excerpt shows how obituaries serve as both markers of time and intense feeling. They signal not only a life's end, but also the values that life represented and stood for, making obituaries critical for remembrance and legacy preservation. Put simply, obituaries offer a naturalistic view into what people choose to remember and celebrate in others. Legacy research often focuses on how people *want* to be remembered (1, 7, 20, 21), but obituaries tell us how people *are* remembered.

We add to the body of research on individual and collective legacy through a linguistic examination of personal values in obituaries. Using behavioral traces like language patterns to reveal important social and psychological dimensions of legacy is supported by decades of research in the psychology of language. This literature suggests words are markers of attention (22–24). For example, frequent use of negative emotion terms (e.g., *hate*, *dislike*) suggests greater attention to negative emotional states than infrequent use. This *words-as-attention* framework has been used extensively, including in studies that investigate how words track with personality dimensions (25), morality (26), and many other areas of social life (27). Critically, this line of research has also identified how words reveal gender-based disparities in medical domains (28, 29), police interactions with civilians (30), education (31), and other settings. Altogether, substantial research supports the idea that words are markers of what people are thinking, feeling, and experiencing psychologically. Thus, analyzing language can generate novel inferences about how both individuals and cultures interpret the world around them (32), and we do so by examining the values people have ascribed to a life.

At scale, obituaries also tell an even larger story beyond individual legacies: how memory, of both individuals and of larger collectives, is shaped by social identity and social structure (18). Obituaries suggest what types of information are emphasized and how these patterns shift by characteristics of the deceased (e.g., gender, age) (33). Obituaries are also frozen in time, embedded within, or situated alongside, major historical and societal events (17). While obituaries still tend to overrepresent certain groups (e.g., men over women, the wealthy over those less fortunate, and those with access to newspapers or memorial platforms over those without) (33, 34), they likely represent a wider slice of society than traditional historical texts (see recent perspectives highlighting the utility of historical texts in developing a psychological understanding of groups embedded in past temporal contexts) (35). In that way, obituaries offer access to snapshots of human psychology (and sociology) through legacies as they occur in cultural practice.

People have written obituaries for centuries. The first known public death notice was in 59 BC, with more modern obituaries dating back to the 17th century (36). These words of remembrance leave behind a detailed record of how people chose to remember their close connections. For social scientists charged with carving out knowledge about the human condition, obituaries offer a rich resource for examining cultural change, variability, and group differences in the basic values that characterize communities across generations (37). By analyzing these remembrances—specifically, identifying what is said, and for whom—we can start to piece together a larger portrait of the human traits and characteristics that communities (and even large scale societies) have valued over time.

The Current Paper. To address our first question (i.e., What values are people most remembered for?), we drew on Schwartz's theory of basic human values (13, 38), which argues for a collection of 10 universal values or guiding principles for one's life (see Table 1 for these values and their general definitions) (39). This theory, tested and validated in dozens of countries and cultures (39–41), represents what humans view as goals that serve as guiding life principles (14). To measure personal values in language, we used a validated dictionary of basic human values to understand the prevalence of these values and how they change over time (15).

To address our second question (i.e., What is the dynamic nature of legacy and how are legacy reflections related to cultural events?), we drew on psychology of language research to assess how words indicate psychological shifts in how people think and feel in response to cultural events. We selected three cultural events—a) the terrorist attacks of September 11, 2001, b) the 2008 Financial Crisis in the United States, and c) the COVID-19 Pandemic—to identify whether and how obituaries changed in the wake of major global events. Consistent with prior work (42, 43), we do not argue that these cultural events necessarily *caused* people to write differently about deceased loved ones, but instead we attempt to highlight differences in obituary content before and after the events.

Finally, we address our third question (i.e., How do legacy reflections reinforce cultural scripts about what it means to have lived well?) by identifying how verbal indicators of personal values are represented across key demographic categories like gender and age. A broad literature in social psychology has extensively documented stereotypes people communicate and act on based on a target's gender. In particular, research on gender stereotypes suggests men are perceived as more agentic than women, while women are perceived as more communal than men (44, 45). Such perceptions align with Social Role Theory, which suggests gender stereotypes stem from differences in the frequency with which men and women occupy different social roles at home or at work (46). Indeed, research mapping universal patterns in stereotyping finds that, on average, cisgender men are perceived as more competent than women, while cisgender women are seen as warmer than men (47). Warmth and competence stereotypes are also shaped by other demographic factors, such as race or age. Regarding age, research on the stigma and stereotyping of older adults shows that distinct subtypes emerge depending on the specific subgroup one considers (48). Like other visible characteristics, chronological age is a trait that people use, often implicitly, to categorize others (49, 50). But, it is unclear, even in the extant literature on legacy and legacy motivations, how important a role gender, age, and their interaction play in how people remember others, and this open question motivates our third empirical interest.

Table 1. Components of Schwartz's theory of basic human values

Value	Definitions and excerpts
Achievement	The need for "personal success through demonstrating competence according to social standards"
	*"She was devoted to her family and her colleagues and students often sought her **expertise** and advice, relying on her vast **experience** and wisdom."*
Benevolence	The need for "preservation and enhancement of the welfare of people with whom one is in frequent personal contact"
	*"[...] was a loving and devoted **wife** and **mother**. She was such a **caring** and solid **friend**."*
Conformity	The need for "restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations"
	*"[...] proudly **served** in the U.S. Navy."*
Hedonism	The need for "pleasure or sensuous gratification"
	*"[...] **enjoyed** spreading **happiness** and **laughter**."*
Power	The need for "attainment or preservation of a dominant position within the more general social system"
	*"During her **strong** and courageous **fight**, many people looked up to her [...]"*
Security	The need for "safety, harmony, and stability of society, of relationships, and of self"
	*"Despite facing her own mental and physical **health** challenges [...]"*
Self-direction	The need for "independent thought and action"
	*"Her family and friends will miss her and her **creative mind**, **independent spirit** and loving heart."*
Stimulation	The need for "variety and stimulation" for "activation"
	*"[...] was a man of **extraordinary energy**, **enthusiasm** and generosity."*
Tradition	The need for "respect, commitment, and acceptance of the customs and ideas"
	*"was a Loving Mother and Grandmother and a **Faithful** member of Pleasant Grove **Bible Missionary Church**."*
Universalism	The need for "understanding, appreciation, tolerance, and protection for the welfare of all people and for nature"
	*"[...] passion for equal opportunity, education and **justice** made him a vital voice in the **community**."*

Note. Quotes and general definitions at the top row of each personal value were taken from Schwartz's original instantiation of the theory of basic human values (13). Italicized quotations in each personal value pair represents an obituary excerpt with actual words in each personal value dictionary that are bolded.

Results

Obituaries were 174.53 words long (*SD* = 149.03 words), on average.[*] Descriptive statistics across language dimensions are presented in *SI Appendix*, Table S1. Top content words and cases in the dataset over time are in *SI Appendix*, Tables S2 and S3, respectively.

Personal Value Prevalence. Addressing our first research question, we observed that the most prevalent personal values were *tradition* (represented in 80.17% of obituaries), followed by *benevolence* (75.73%), *universalism* (36.07%), *self-direction* (29.68%), and *hedonism* (28.29%). The remaining values appeared in less than 25% of cases. Point-biserial correlations between personal values (1 = an obituary contained a personal value, 0 = an obituary did not contain a personal value), and obituary year revealed a decrease in *benevolence* over time ($r = -0.127$, $P < 0.001$) and an increase in *hedonism* ($r = 0.144$, $P < 0.001$). In fact, *benevolence* has decreased since 2019 and has not recovered. Other correlations between personal values and year were positive and statistically significant ($0.014 < rs < 0.097$); see Fig. 1 for a visual description of these data.

Personal Values Reflecting Cultural Events. To address our second research question, we created baseline periods that preceded three cultural events based on an obituary's date of publication: a) the terrorist attacks of 9/11, b) the 2008 financial crisis (starting date September 15, 2008, with the collapse of Lehman Brothers), and c) the COVID-19 pandemic (starting date January 10, 2020, when the World Health Organization first published a "comprehensive package of technical guidance online" about the virus) (53). Consistent with prior work (42), baselines were the average personal values scores 2 mo before each cultural event, and we calculated time interval means minus baseline means for each personal value over time.[†]

September 11th. *Security*, including terms like "surviving," "health," and "order," fell after the 9/11 terrorist attacks and did not return to baseline 1 wk (Cohen's $d = -0.04$), 2 wk (Cohen's $d = -0.04$), 1 mo (Cohen's $d = -0.04$), 3 mo (Cohen's $d = -0.02$), 6 mo (Cohen's $d = -0.03$), or 1 y (Cohen's $d = -0.02$) after the attacks (all $ps < 0.003$). *Tradition* increased, and did not return to baseline 2 wk (Cohen's $d = 0.03$), 1 mo (Cohen's $d = 0.03$), 3 mo (Cohen's $d = 0.04$), 6 mo (Cohen's $d = 0.07$), or 1 y (Cohen's $d = 0.09$) after the attacks (all $ps < 0.01$). *Benevolence* displayed similar patterns and effect sizes as *tradition* (Fig. 2).

Does where someone died impact how people remember them after a crisis? We identified the deceased's most recent region from the obituary metadata and we analyzed how proximity to New York—the epicenter of 9/11—impacted legacy reflections by comparing raw mean values between New York and non-New York locations within each time period. Relative to those who died

[*]Prior work suggests obituaries about men are longer than those about women, on average (51, 52). We replicated this effect in the present data, as obituaries about men ($M = 178.25$ words, $SD = 155.67$ words) contained nearly 8 more words than obituaries about women ($M = 170.39$ words, $SD = 141.38$ words), $P < 0.001$, Cohen's $d = 0.05$. Therefore, we support prior qualitative and small-scale research by observing that men are posthumously elaborated on more than women. Additionally, older people were written about more than younger people ($r = 0.098$, $P < 0.001$).

[†]We selected these cultural events for several reasons. We aimed to test how three distinct crises—one terrorism-related, one finance-related, and one health-related—might exhibit different forms of remembrance via personal values due to their documented health and well-being impacts (42, 54–56). The selection of these cultural events allowed us to examine how widespread societal disruptions shaped the values and narratives people chose to emphasize when commemorating the deceased.

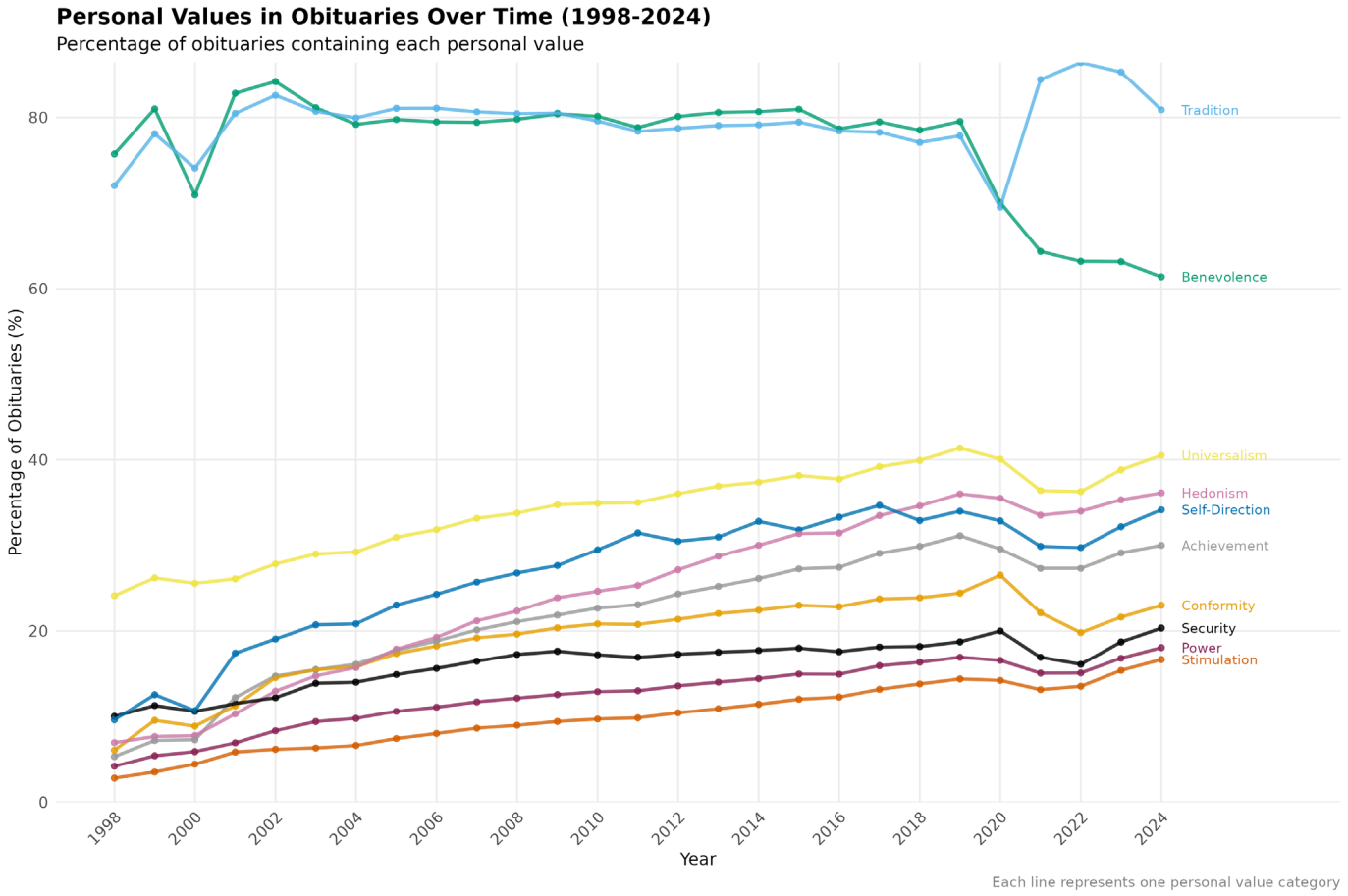

Fig. 1. Personal values over time in 38 million obituaries. Obituaries can contain multiple personal values per text.

outside of New York State, those who died in New York State were written about with more *benevolence* across all time intervals (0.20 < Cohen's *d*s < 0.32). At least 2 wk after 9/11, there was a reduced focus on *security* for those in New York State versus those outside of New York State (−0.07 < Cohen's *d*s < −0.04). Together, these data suggest there is a location-language link in how people are remembered after cultural events (see Fig. 3 for further description of the cumulative location and language results).

Financial crisis. Results for the 2008 financial crisis are located in Fig. 4. *Achievement* gradually fell starting 1 mo after the financial crisis ($P = 0.061$; Cohen's $d = -0.01$), followed by decreases 3 mo ($P = 0.002$; Cohen's $d = -0.01$), 6 mo ($P < 0.001$, Cohen's $d = -0.01$), and 1 y ($P = 0.004$, Cohen's $d = -0.01$) after the crisis. *Hedonism* was generally lower than baseline for all time periods except for 1 y after the financial crisis when it was higher than baseline ($P < 0.001$, Cohen's $d = 0.01$). Perhaps, this reversal reflects a psychological improvement where people began focusing on values related to satisfaction instead of personal survival over the long term.

COVID-19. We added time intervals for COVID-19 (i.e., 1 wk, 1 mo, 3 mo, 6 mo, 1 y, 2 y, 3 y, 4 y) due to the pandemic's longitudinal nature (Fig. 5). The most substantial deviations from baseline related to *benevolence*. While there was no significant difference between baseline and 1-wk after the pandemic began for *benevolence* ($P = 0.651$; Cohen's $d = 0.004$), we observed decreases in *benevolence* 1 mo (Cohen's $d = -0.18$), 3 mo (Cohen's $d = -0.37$), 6 mo (Cohen's $d = -0.25$), 1 y (Cohen's $d = -0.14$), 2 y (Cohen's $d = -0.18$), 3 y (Cohen's $d = -0.20$), and 4 y (Cohen's $d = -0.20$) relative to baseline (all *p*s < 0.001). Patterns of *hedonism* were similar to *benevolence* but with smaller effect sizes: decreases 1 mo (Cohen's $d = -0.05$), 3 mo (Cohen's $d = -0.12$), 6 mo (Cohen's $d = -0.05$), and then after 2 y (Cohen's $d = -0.02$), 3 y (Cohen's $d = -0.02$), and 4 y (Cohen's $d = -0.02$) relative to baseline (all *p*s < 0.004). Finally, *tradition* decreased 1 mo (Cohen's $d = -0.15$), 3 mo (Cohen's $d = -0.35$), 6 mo (Cohen's $d = -0.34$), and 1 y (Cohen's $d = -0.23$) relative to baseline. 2 y (Cohen's $d = 0.09$), 3 y (Cohen's $d = 0.15$), and 4 y (Cohen's $d = 0.17$) after the pandemic, *tradition* increased and did not return to baseline (all *p*s < 0.001). Full statistical baseline comparisons for all cultural events are located in *SI Appendix*, Tables S4–S6.

We further investigated a notable shift where *tradition* transitioned from below baseline to above baseline between Years 1 and 2 of the pandemic. We specifically examined the terms with the greatest effect size differences (log odds ratios) between two timepoints: 1) Jan 10, 2020 to Jan 10, 2021, or Year 1 of the pandemic, and 2) Jan 10, 2021 to Jan 10, 2022, or Year 2 of the pandemic. Obituaries in Year 1 of the pandemic were more likely to make general religious references than in Year 2 of the pandemic (log odds ratio *bless* = 0.547, *praying* = 0.324, *rituals* = 0.240, and *ceremony* = 0.239). However, obituaries in Year 2 of the pandemic were more likely to make detailed, religion-specific references than obituaries in Year 1 of the pandemic (log odds ratio for *allah* = −0.508, *islam* = −0.074, and *jesus* = −0.033). The word *legacy* was represented more in Year 1 of the pandemic than Year 2 (log odds ratio = 0.080).

We also correlated personal values with daily COVID-19 death rates reported by *The New York Times* (57). The most substantial effect was the link between COVID-19 deaths and *tradition* ($r = 0.160$, $P < 0.001$). As more people died during the pandemic, obituaries tended to focus more on religion and social norms; they also focused less on *conformity* ($r = -0.065$, $P < 0.001$), which signals possible effects of social and psychological

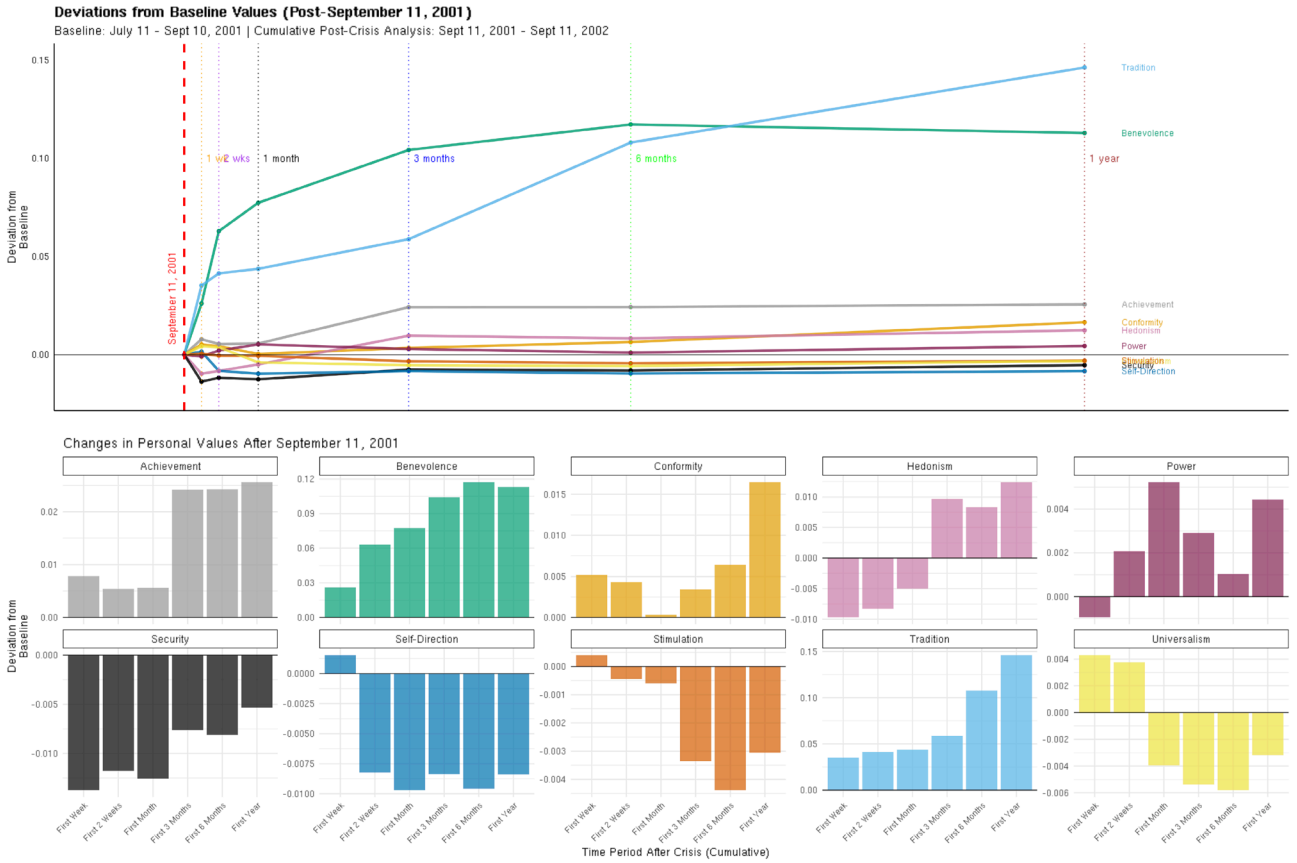

Fig. 2. Post-baseline results for the September 11th terrorist attacks. Each time point represents the average over the entire period since crisis start. Vertical line spacing represents the actual temporal structure of the data. Sample sizes at different time intervals include: baseline (n = 35,976), 1 wk (n = 5,451), 2 wk (n = 10,727), 1 mo (n = 22,577), 3 mo (n = 79,738), 6 mo (n = 193,520), and 1 y (n = 452,859).

disruption during this time. Together, the prior data suggest shifts in personal values are linked to consequential cultural events in history that impact how people think, feel, and appraise the world around them—including their loved ones who died.

Personal Values Reflecting Differences by Gender and Age. We addressed our third research question by evaluating how personal values are represented across gender, age, and their interaction. The evidence in *SI Appendix*, Table S7 predicts personal values from gender and age separately, controlling for year as a fixed effect to account for any time-related variance in our models. We also computed multiple regression models that included gender, age, and year as simultaneous predictors. These data are listed in *SI Appendix*, Table S8, and the results are largely consistent with *SI Appendix*, Table S7. As expected, due to our substantial sample size, all of these effects were statistically significant, and, therefore, we focused mainly on effect sizes to establish the magnitude of the findings. We present select results with largest effect sizes from the overall model, below.

Men are remembered more for values related to *conformity* (r = 0.136), *achievement* (r = 0.081), and *power* (r = 0.063) compared to women. Men are also remembered less for values related to *hedonism* (r = −0.079) and *benevolence* (r = −0.077) compared to women. Regarding age, older people are remembered more for *tradition* (r = 0.119) and *conformity* (r = 0.076), but less for *self-direction* (r = −0.187) and *benevolence* (r = −0.126) than younger people.

Interaction effects for gender and age were statistically significant across all personal values, revealing important trends in how people of different demographic identities are remembered (Fig. 6). First, middle-aged men are valued more for *conformity* than middle-aged women, a trend that also persists through older ages. Second, it is striking to notice how, across most personal values, legacies of women show relatively flat or gradually changing patterns with increased age. Legacies of men, on the other hand, show much more dynamic age-related changes over the lifespan. Finally, across the lifespan, women are valued more for *security* compared to men, but this pattern reverses around age sixty.

Additional Content Patterns. Using a random 1% sample of the data (n = 382,456)—stratified by gender and year—we used the Meaning Extraction Method (58, 59) to identify the top 10 obituary themes using unigrams (single words), bigrams (two-word phrases), and trigrams (three-word phrases) (*SI Appendix*). This analysis helped to identify other content patterns in the data independent of personal values. Top themes included education (e.g., *high school*, *university*), military service (e.g., *army*, *war*), forms of memorialization (e.g., *plant tree*), and the adored nature of the deceased (e.g., *beloved wife*). These themes are crucial because they indicate the most dominant characteristics that people are remembered for over a lifespan: what they have accomplished (e.g., education), their service to others (e.g., military service), and family connections (*SI Appendix*, Table S9).

We saved themes as regression weights and entered them as simultaneous predictors in multiple regression models (*SI Appendix*, Tables S10–S19). Education was positively associated with all personal values except it was negatively associated with *tradition*. Military service was positively associated with

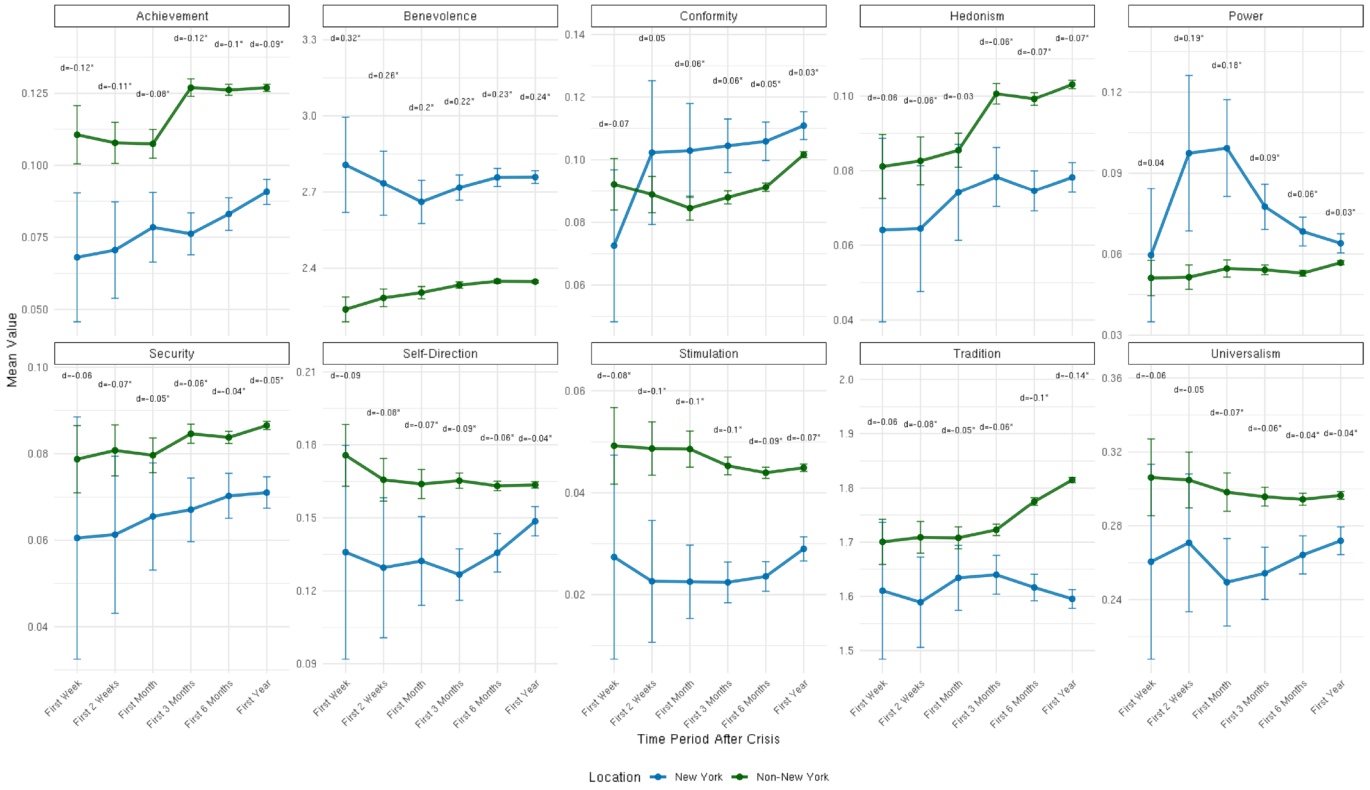

Fig. 3. Location analyses for the September 11th terrorist attacks. Sample sizes: 1 wk (NY_n= 393; Non-NY_n= 5,058), 2 wk (NY_n= 775; Non NY_n= 9,952), 1 mo (NY_n= 1,667; Non-NY_n= 20,910), 3 mo (NY_n= 4,897; Non-NY_n= 74,841), 6 mo (NY_n= 10,164; Non-NY_n= 183,356), 1 y (NY_n= 20,598 Non-NY_n= 432,261). In this analysis, we did not use baseline subtracted values because, for this research question, we focused on differential remembrance patterns by location, not about longitudinal change from baseline by location. Error bars are 95% Confidence Intervals.

personal values related to *security*, *conformity*, *achievement*, and *power*, but negatively associated with personal values related to *hedonism*, *tradition*, and *benevolence*. Finally, asking for donations to remember a loved one was positively associated with *benevolence* and *hedonism*, but negatively associated with *tradition*. Bivariate correlations between themes and personal values are located in *SI Appendix*, Table S20, revealing only modest correlations (maximum r = 0.294). Therefore, dominant topics were indeed independent of personal values.

Discussion

The average person lives for about 4,000 wk (60) and is remembered in approximately 175 words. This compression and distillation of lived human experience is a remarkable time capsule of individual and collective legacy: what people are remembered for, how remembrance is related to major cultural events in history, and how the identity of the deceased impacts how people write about them.

In a collection of 38 million obituaries in the United States spanning nearly 30 y of data, we observed that Americans are mostly remembered for basic human values related to *tradition* (e.g., a focus on religion) and *benevolence* (e.g., caring for others). The prevalence of most personal values has increased over time in obituaries, but around the time of COVID-19, *benevolence* markedly decreased and never recovered. We also examined how key cultural events like the 9/11 terrorist attacks, the 2008 financial crisis, and the pandemic linked to systematic changes in how people wrote about their loved ones who passed. We observed that effect sizes for COVID-19 were substantially larger than for 9/11 and the 2008 financial crisis, likely due to the fact that the pandemic directly impacted many more people than the other events. Finally, upon examining how identity characteristics of the deceased linked to personal values, we observed that men are remembered more for *achievement* and *power* than women, women are remembered more for *benevolence* than men, and men's obituaries show greater variation in values over the lifespan than women's. Additionally, older people are remembered more for *tradition* and less for *benevolence* than younger people. From these data, we can glean how American culture has been thinking and feeling over time, and at scale, obituary texts can help to make collective inferences about what people value in a life well-lived.

Implications. Several important aspects of this work deserve greater attention, particularly the cultural events analyses. We interpret the results of these analyses within the context of existing theoretical and empirical work. Though our interpretations are speculative explanations, we expect they can be turned into hypotheses to be tested in future work.

The COVID-19 findings reveal a temporal pattern that suggests how collective trauma and disruption unfolds in collective memory-making. Value shifts showed a delayed onset, with no massive changes at 1 wk but substantial decreases emerging by 1 mo. While we cannot make causal inferences regarding these data and we have been focused on values related to the deceased as ascribed by their living relatives, the patterns suggest the psychological impact of the pandemic (on how people remembered others) may not have been immediate. Instead, it unfolded gradually, potentially as the broader scope of disruption became more salient over time. The substantial decline in *benevolence* language (Cohen's d = −0.37 at nadir), however, presents a paradox. During a time when communities were making extraordinary sacrifices for collective good, such as wearing masks, social distancing, and supporting essential workers (61), obituaries became less likely

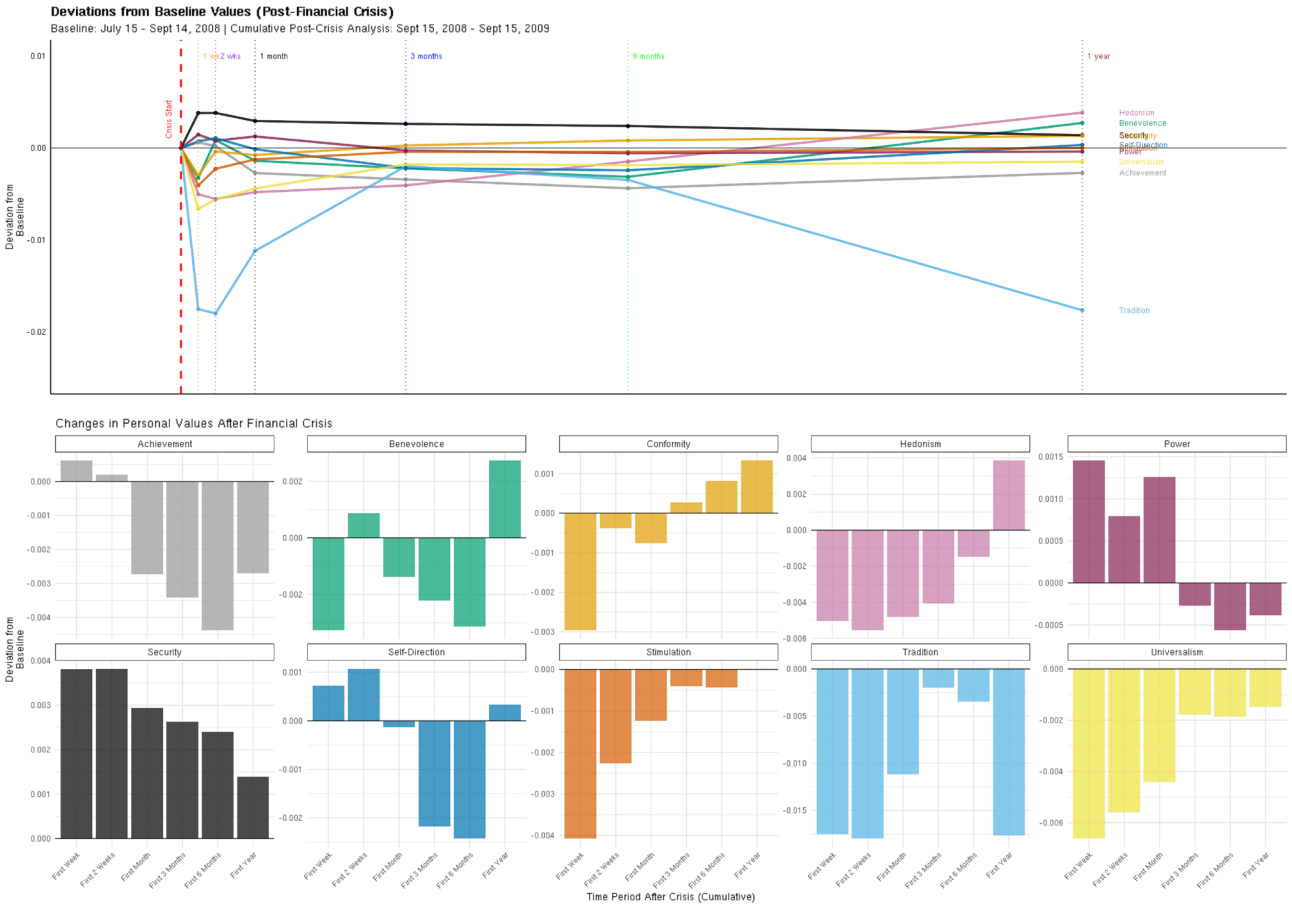

Fig. 4. Post-baseline results for the 2008 financial crisis across personal values. Each time point represents the average over the entire period since crisis start. Vertical line spacing represents the actual temporal structure of the data. Sample sizes at different time intervals include: baseline (n = 256,735), 1 wk (n = 34,773), 2 wk (n = 67,182), 1 mo (n = 142,491), 3 mo (n = 433,756), 6 mo (n = 895,319), and 1 y (n = 1,752,231).

to emphasize caring for others. This pattern raises the possibility that the capacity to *enact* benevolence and the ability to *recognize* it in others' legacies may reflect distinct psychological processes. More broadly, this may suggest that, in times of crisis, prosocial behavior becomes harder to publicly recognize and narrate, even when it is widespread. This highlights a disconnect between lived moral behavior and its cultural encoding in memory.

One might initially wonder whether a general decline in happiness during the pandemic could have dampened the tone of obituaries or reduced the salience of benevolent traits in remembrances. However, empirical evidence suggests that overall happiness levels remained relatively stable during this period, while actual levels of *benevolence* intensified rather than weakened (62). A more plausible explanation may lie in the disruption of social interaction. When social connections were constrained, as prior research suggests they were during the pandemic (63, 64), it may have been more difficult for obituary writers to articulate the caring behaviors that typically make benevolence visible and memorable.

The *hedonism* decline during the pandemic, while more modest in magnitude, presents an intriguing departure from typical predictions from Terror Management Theory that guide much of the literature on how people process thoughts about death. Terror Management Theory proposes that to cope with existential fears around death brought on by the salience of mortality, people cling to cultural worldviews (i.e., belief systems that provide meaning, order, and a sense of permanence) and self-esteem (which signals that one is living up to the standards of those worldviews) (65). Research generally shows that mortality salience increases self-enhancement behaviors, including materialism and pursuit of personal pleasure, as individuals seek to bolster their self-esteem against existential anxiety (66–68). However, our findings point to the possibility that when mortality becomes omnipresent in daily discourse during a collective crisis, celebrating someone else's pursuit of pleasure may feel culturally inappropriate or frivolous. Collective mortality awareness during widespread tragedy may therefore operate differently from individual mortality salience, creating a type of hedonic suppression in how people construct meaning around others' lives. This counters how people make sense of their own lives. Zooming out, these findings suggest that collective crises may shift cultural norms around what is appropriate to celebrate in death toward prioritizing solemnity over joy and personal gratification.

We also observed location-based differences in legacy reflection based on the 9/11 data. That is, those who wrote about someone who died in New York State after 9/11 focused on different personal values over time than those who wrote about someone who died outside of New York State. This evidence is supported by Construal Level Theory (69), which argues that physical and psychological distance can modify how people think and feel about a target. We provide evidence to argue that the language-location link modifies obituary writing during cultural events. These data suggest that not only do traumatic events shape the immediate emotional response of individuals, but they can also impact the long-term narrative construction of meaning and memory for different people based on where they live and die. In this way, collective trauma may not only shape what is mourned, but also

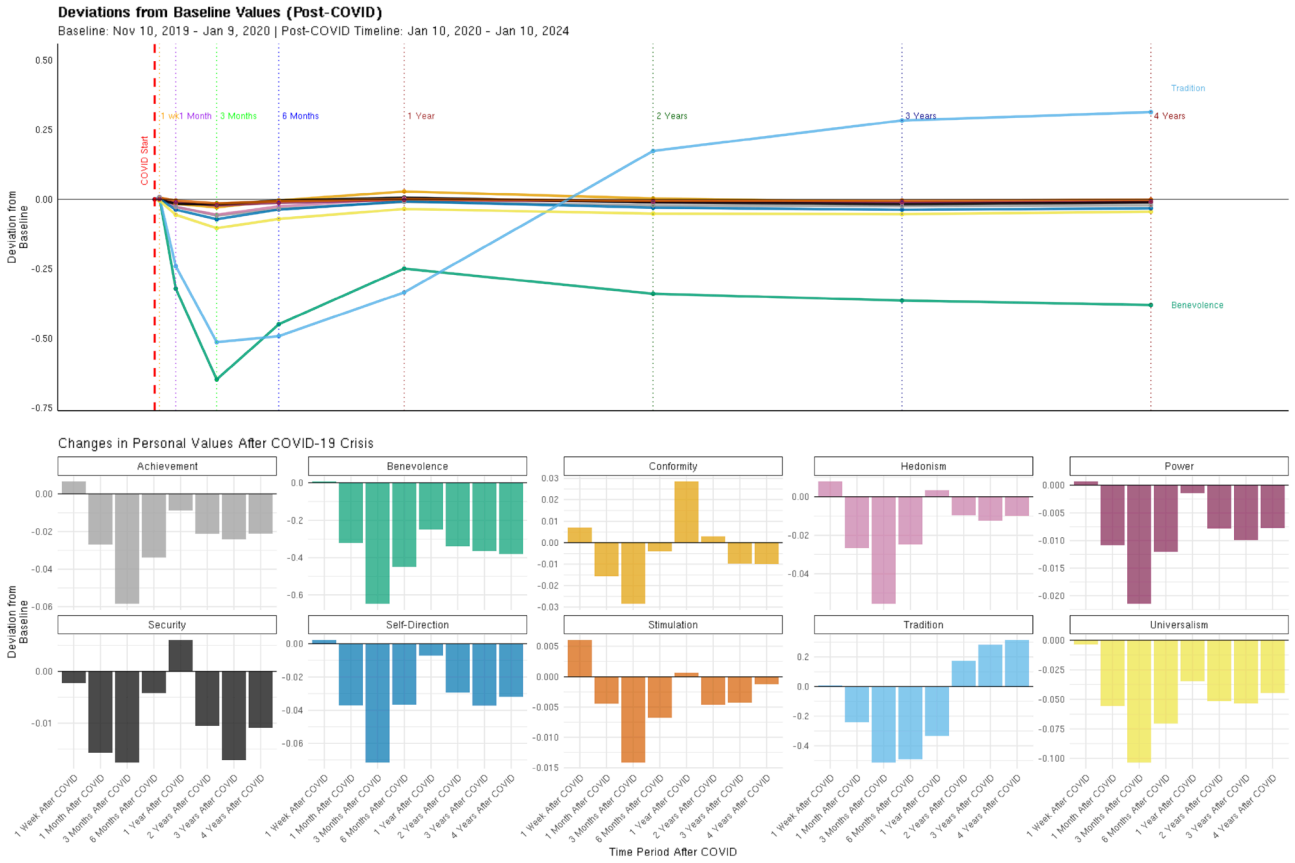

Fig. 5. Post-baseline results for COVID-19 across personal values. Each time point represents the average over the entire period since crisis start. Vertical line spacing represents the actual temporal structure of the data. Sample sizes at different time intervals include: baseline (n = 28,947), 1 wk (n = 28,846), 1 mo (n = 149,655), 3 mo (n = 612,428), 6 mo (n = 962,845), 1 y (n = 1,667,777), 2 y (n = 4,326,669), 3 y (n = 6,817,317), and 4 y (n = 9,310,639). Only tradition and benevolence are labeled due to the consistent grouping among the other personal values over time.

deepen regional differences in the tone of remembrance, reflecting how place and proximity modulate legacy construction.

The differences observed by gender and age also signal that the same cultural scripts and stereotypes that guide how people are perceived in life are preserved in legacy, shaping how people are remembered after death. The persistent emphasis on *achievement* and *power* in men's obituaries versus the focus on *benevolence* in women's obituaries connects with two broader person-perception frameworks: a) the Stereotype Content Model (70, 71), which argues that humans reliably judge others on two core dimensions: warmth (e.g., trustworthy, friendly, sociable) and competence (e.g., agentic, effective, capable), and b) Social Role Theory (46), which posits that people infer traits from the roles men and women are more frequently observed occupying (e.g., women in caregiving roles and men in leadership roles). Our results suggest these dimensions of social judgment can become crystallized in collective memory and remembrance. Person-perception frameworks might also help explain why personal values in men's obituaries vary more across the lifespan. In particular, obituaries written through a lens of competence may focus more on topics like career achievements, wealth, or influence, which tend to increase with age. In contrast, obituaries written through a lens of warmth may focus more on aspects like a person's role in their family or their personality traits, which tend to remain more stable with age. In this way, our results extend person-perception frameworks from living social interactions to posthumous narratives. Gender stereotypes, therefore, may not just reflect interpersonal and intergroup biases, but they may also be embedded, and transmitted across generations, in our cultural practices of legacy and memorialization.

Notably, one of the strongest effects was that men were remembered more for *conformity* than women, which may seem to run counter to traditional gender stereotypes. However, in this context, *conformity* language often contained words like "law," "served," and "directions," which are words that may surface in obituaries through references to military service, civic involvement, and professional discipline. Indeed, thematic mentions of military service were associated significantly and positively with linguistic signatures of *conformity* valuation (*SI Appendix*, Table S16). Accordingly, rather than connoting submissiveness, conformity here may signal structured responsibility and adherence to social order, traits aligned with the competence dimension of the Stereotype Content Model (70, 71) and consistent with culturally masculine social roles. Thus, while the findings pertaining to *conformity* may initially appear to violate gender stereotype expectations, they may, alongside the findings discussed above pertaining to *achievement* and *power*, instead reflect how male-coded scripts around competence and social obligation are encoded in legacy.

Beyond the empirical insights presented here, our approach offers a framework for the psychological study of legacy by shifting focus from how individuals *wish* to be remembered to how they *actually* are remembered by others. Whereas prior work on legacy and legacy motivation has primarily examined self-reported desires for symbolic immortality or value transmission (1–5), obituaries provide an ecologically valid, third-party glimpse into

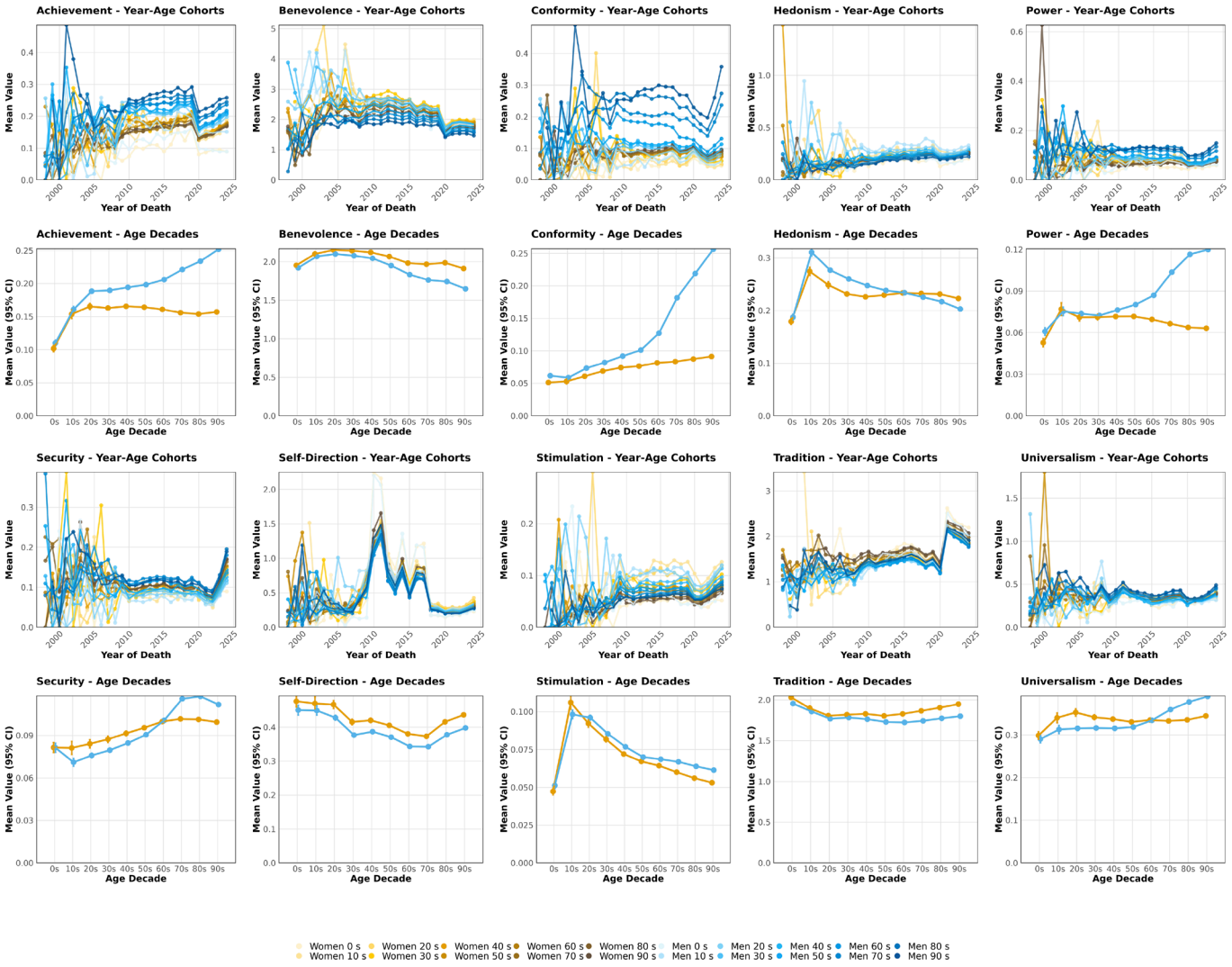

Fig. 6. Age and gender effects over time for personal values. Each panel displays the mean prevalence of a personal value in obituaries, plotted separately by gender (men = blue; women = orange). The first and third rows show trends from 1998 to 2024 by year of death, broken down by age-at-death cohorts. Each line represents a distinct cohort (e.g., those who died in their 50s, 60s, etc.), allowing comparisons across both age and historical period. We interpret the trends before 2005 with caution due to the substantially lower sample sizes in these years relative to future years. The second and fourth rows display average value expression by age-at-death decade (e.g., 0- to 9-y-olds, 10- to 19-y-olds, ..., 90- to 99-y-olds), collapsed across years. Those greater than 100 y old were removed in these plots due to such low prevalence of these individuals. Error bars represent 95% CI. Across values, gender-by-age interactions show clear patterns. Conformity increases more steeply with age for men than for women, with the largest gender difference emerging in later life. Women's value profiles remain relatively stable or gradually change with age across most domains. In contrast, men's profiles show more pronounced age-related variation, particularly in achievement and power.

how those values are culturally encoded, socially recognized, and preserved after death. By analyzing millions of obituaries across nearly three decades, we demonstrate how remembered legacy is not static, but evolves and is dynamic over time. We reveal patterns in how society assigns value to lives, how different values are emphasized or deemphasized during shared events of cultural significance, and how social stereotypes are either reinforced or challenged across generations. This temporal scope opens the door to a more plastic and socially grounded understanding of legacy as a psychological construct that is shaped both by historical moment and cultural memory. And, because legacy motivations influence a range of real-world behaviors, from charitable giving (6, 7) to end-of-life decisions (8), our approach has practical implications for how such motivations are activated, sustained, socially reinforced, and transmitted across time. In this way, obituaries can serve as more than time capsules of *individual* remembrance, but also windows into the evolving social afterlife of society itself.

Limitations. There are several limitations of our work that need to be acknowledged and addressed in future scholarship. First, although we conducted analyses on demographic characteristics like gender and age, analyses focused on other key characteristics like race, income, and political leaning were not examined due to a lack of data. Another category worth exploring is a person's professional occupation, given different stereotypes associated with specific professions (72). Further, our effect sizes using these variables are small, but within range of other studies in the psychology of language tradition (73–76). Small effects at this scale still matter (77) because they can reveal durable cultural scripts in society. Additionally, our analysis relied on predicting the gender of the deceased using names, as the original dataset did not have gender labels.

The generalizability of these findings is also worthy of discussion. This research can speak to the US cultural context, but not other countries. Cross-national comparisons could identify how variability in national culture (78), norms (79), and intergenerational

values (80) potentially influence the way we remember those who have passed. A final limitation worth considering is the format of the language in the texts we analyzed. Obituaries are short and constrained. However, this limitation also provides a strength, namely that the brevity of an obituary encourages its writer to be intentional—every word is meaningful. Further, a consistent structure allows researchers to attribute their findings to content, not form. And, even provided the limitations of brevity and structure inherent to obituaries, we found a wealth of individual variation in the content encapsulated within them. Accordingly, we contend there are limitations and strengths associated with our use of obituaries, and we believe they provide fertile ground to test social, psychological, and sociological theories of how we memorialize others.

Future Directions. The study of obituaries opens a broad array of future research endeavors. First, we examined only personal values in language and in the current investigation, we considered obituaries as third-party legacy reflections. This conceptualization allows for a robust and highly powered reexamination of established theories of legacy in a more ecologically valid setting. Extant research, for instance, suggests that there are three types of legacies: biological (our descendants), materials (our property and resources), and values (the teachings and values we pass on) (5). However, these categories were generated as the result of only a few interviews. Analyzing obituaries would allow us to investigate these patterns across all categories in a much larger, diverse, and well-powered design. Further, we selected three cultural events to investigate how personal values were linked to such events, but there are others that could be analyzed in future work.

Finally, while our investigation assessed roughly three decades of remembrance, people have memorialized their loved ones for centuries (36). Accordingly, a more complete psychological record of societal meaning-making around death remains, at present, unwritten. Nonetheless, the breadth of intertemporal variability found in a few decades of data suggests that, across greater spans of time, the values societies uphold, the accomplishments they celebrate, and the lives they deem worthy of remembrance may shift in even more profound and revealing ways (see research on Life Course Theory for how historical and social context shape which traits and milestones are culturally valued at different points in time) (81). It also remains an open question whether other moments of collective crisis have similar impacts on remembered legacy across historical epochs. For instance, do the shifts we observed during the COVID-19 pandemic, the 2008 financial crisis, or 9/11 echo those that emerged during the 1918 influenza pandemic, the Great Depression, or other large-scale disruptions? Similar to how recent perspectives have suggested historical texts can serve as a vehicle toward developing a deeper understanding of human psychology across time (35), we argue that tracing the remembered values of ordinary people through wars, revolutions, social movements, and eras of transformation may offer unparalleled insight into the enduring narratives through which individuals, and the societies they make up, make sense of life, loss, and legacy.

Conclusion. Obituaries offer a record of how people construct meaning from life and loss. As brief but intentional reflections, they capture what loved ones believe made a person's life valuable, whether through relationships, accomplishments, service, or character. Our findings show that these reflections are shaped not only by who the deceased was, but also by broader social and historical forces. Gender and age link to the values that are emphasized, often reflecting cultural scripts about what is expected or celebrated across different roles and life stages. Major societal disruptions, such as the COVID-19 pandemic or 9/11, shift how lives are framed and which values come to the fore. Accordingly, obituaries function as time capsules that reflect what people, at a given moment in history, understand to be a life well lived. By studying how these patterns evolve across time and context, we can gain deeper insight into how societies define a worthy life, express loss, and pass on values across generations.

Method

Data Collection and Preprocessing. All obituaries were obtained directly from Legacy.com, the Internet's largest archive of written obituaries and memorials. According to prior reporting, Legacy hosts obituaries for approximately 70% of all deaths in the United States (82). The Legacy data in this paper span nearly 30 y from their API (1998 to 2024) and cover all 50 states. In addition to the obituary text, metadata included the age, name of the deceased, and other person-level categories. The average age for the deceased was 75.51 y (SD = 17.33 y).

A small percentage of texts were written in languages other than English, and these cases were excluded because our natural language processing procedures were germane to English-only texts. To identify differences in remembering by gender, we used the *gender* package (83) in R to predict gender identity from first names. Since we had the age of the deceased in this dataset, we used this package's name prediction algorithm fine-tuned by year. This tool matches the name of a person against the US Census and other databases to account for variability in name-gender links over time. We only included cases where a judgment in gender could be made (n = 19,750,436 men, n = 18,495,492 women), which totaled to a maximum dataset of 38,245,928 obituaries and 6,674,954,213 words.[‡] When age was included in analyses, the sample size was 11,652,778 obituaries due to data availability. A correlation matrix between personal values and key demographics is in *SI Appendix*, Table S21.

Automated Text Analysis. We used Linguistic Inquiry and Word Count (LIWC) (84) to extract social and psychological dimensions from the obituaries. LIWC operates on a simple word-counting system that counts the number of words in social (e.g., words about friends), psychological (e.g., words about emotion, affect, or cognition), and parts of speech (e.g., articles, prepositions) categories as a percentage of the total word count per text. For example, a statement like "We will remember her fondly" contains five words, and LIWC increments the following dimensions: first-person plural pronouns ("we"; 20% of the total word count), auxiliary verbs (e.g., "will"; 20% of the total word count), cognition words ("remember"; 20% of the total word count), third-person singular pronouns ("her"; 20% of the total word count), and positive emotion terms ("fondly"; 20% of the total word count). We used the 1,068-word personal values dictionary (15), validated by prior work, to measure personal values in language patterns from Schwartz's Theory of Basic Human Values (13, 39, 41). Top dictionary words associated with each personal value are represented in *SI Appendix*, Table S22.

Data, Materials, and Software Availability. Based on the terms of the data acquisition agreement, underlying data for this study cannot be made publicly available. However, those who are interested in forming a collaboration with the present authors to tackle additional empirical questions should contact the corresponding author (D.M.M.) to discuss this process. If a project commences, the authors may provide limited access to a sample of the data for analytic purposes. Direct access to the data (for a fee) from Legacy.com can be arranged by contacting personnel at media@legacy.com.

[‡]We also observed that some names in the dataset were also terms in personal values dictionaries (e.g., "law," "ward," "faith"). We reran the multiple regression analyses after removing first and last names from obituaries, and the results were consistent. Results in this paper include names in the obituaries.

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