Let's Get Physical: Immortality and Collectivism

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Introduction

  Every human being is faced with the uninvited reality that we will eventually die, yet we have the utmost difficulty accepting this. Our attempts to manage this existential dread could be a primary motivator for both our greatest achievements and our worst displays of violence. Terror Management Theory (TMT) seeks to explain how our fear of death influences human behaviors and what strategies we deploy to defend against this potentially deliberating anxiety. This theory is founded on cultural anthropologist Ernest Becker's concept that human activity is largely motivated by our attempts to protect against death through culture and meaning in our lives (Solomon et al., 2015). We instill faith in our culture to manage our fears of death through our beliefs and to establish a sense of eternal significance through the contributions we make to that culture, thereby strengthening our self-esteem and sense of value (Solomon et al., 2015).

  Worldview and self-esteem can vary between different cultures. A meta-analysis by Burke and colleagues (2010) examined effect sizes and found significant differences between cultures when reminded of death. Cultures have different ways of integrating death into daily lives. When given death reminders, also referred to as mortality salience (MS) manipulations, the cultures that are more open about death, typically more collectivistic cultures, might be less affected by death reminders than cultures that are more closed off about death or more individualistic (Burke et al., 2010). Cultural ideals and identities within these cultures are leaned into even more when death is brought into the picture (Solomon et al., 2015; Burke et al., 2010).

  Moreover, strong cultural worldviews are incredibly important in keeping thoughts of death out of mind. If these worldviews are weak or are threatened, thoughts of death are more easily accessed (Helm et al., 2019). One study found that in American undergraduate students, death thought accessibility (DTA) was increased with high levels of loneliness or isolation from others but was reduced with greater levels of self-esteem in individuals (Helm et al., 2019). Similarly, DTA was found to be significantly reduced in individuals who were thinking of both a meaningful life and a meaningful death; in other words, such individuals were not able to conjure thoughts of death as easily (Van Tongeren et al., 2022).

  Furthermore, humans attempt to exceed death and manage anxiety through symbolic and literal immortality. Symbolic immortality is the perception that we are a representation of something bigger that will continue long after our death. Our symbolic eternal life may include our work, offspring, becoming an important figure in history, activism, and social contributions that we make throughout our lives (Solomon et al., 2015). Another form of immortality is literal immortality, which is the belief that life continues in some form after death. Heaven, reincarnation, souls, and afterlife are some examples of this from different cultures (Van Tongeren et al., 2022).

  Additionally, individuals may strive to achieve symbolic immortality through meaningful heroism within their own culture, therefore easing their death anxiety. Moreover, individuals who engage in important actions with a group are more likely to be satisfied with their personal values (Elad-Strender, 2016). On the other hand, after receiving a death reminder, individuals who were provided with hopes of literal immortality lessened their pursuit of symbolic immortality (Dechesne et al., 2003). Interestingly, after being primed with death, low Socio-Economic Status (SES) individuals were found to connect more to collectivist immortality

strategies, whereas individuals with high SES were more aligned with individualist immortality strategies (Castano & Dechesne, 2005). In addition, close relationships with those who reassure our cultural worldviews have a significant impact on our ability to manage our death anxiety (Volini, 2017).

Jiyoung and Yungwook (2021) revealed that collectivist cultures like South Korea prioritize the society's needs over their own self-interest, especially in the face of traumatic events. Additionally, psychological closeness directly increased prosocial behavior in this study. Similarly, an examination of participants in Costa Rica, another collectivist culture, found evidence that individuals who were primed with thoughts of social isolation felt more ingroup bias than those in a control group (Castano & Dechesne, 2005). Contrary to this, research by Rothschild and colleagues (2009) found evidence that reminders of death, when paired with compassionate religious values, reduced feelings of aggression and violence towards out-groups.

Whereas there have been multiple studies done on symbolic and literal immortality as described earlier, the physical immortality aspect has not yet been well researched. Both symbolic and literal immortality are more focused on how someone's legacy or bloodline carries on, but these do not examine how someone may react to having the ability to physically live forever and how this may change their views if they could share this ability with others to avoid the anxiety of death. Adding physical immortality to the equation can help expand understandings of human behavior and TMT. The purpose of this current study is to test if being reminded of death influences one's choice in physical immortality, either themselves alone or with others. We anticipate that individuals who are reminded of their death will be more likely to select group immortality options over the self-immortality option because reminders of death increase feelings of community and closeness with others.

Method

Participants

One hundred and twenty participants from Fort Lewis College and social media consented to participating in this study. Thirty percent were male, 65% were female, and 5% other/non-binary/third gender. Sixty three percent were Caucasian/White, 24% were Native American/Indigenous/Native Alaskan, 8% were Hispanic, 2% were Asian, and 1% were Black. Seventy three percent were non-religious ad 27% were religious. Fifty percent identified as Democrats, 21% were Independent, 19% were other, and 10% were Republican. Ages ranged from 18 to 79 with an average age of 29 (SD=15.98).

Materials

The Mortality Attitudes Personality Survey (MAPS) was used as the death prime and control. MAPS contains two open-ended prompts (Rosenblatt et al., 1989), one asking the participant to think about their own death/the worst dental pain they have experienced. The other asks about the emotions that the thought of death/dental pain arouses within them (see Appendix A).

A delay passage was used to make sure death thoughts fade from consciousness so that the dependent variable measured distal death defenses (Burke et al., 2010). The passage used

was "The Growing Stone," a common delay passage used in many TMT studies (Cox & Arndt, 2008). Participants read the passage and then answer a question concerning how they feel about the descriptive qualities of the passage on a five-point scale (see Appendix B).

The death thought accessibility (DTA) measure was utilized to see if there was a difference in the groups when it comes to the immortality scenario. This measure has been used in multiple studies showing a difference between death primed participants and neutral (dental pain) primed participants only after a delay (Hayes et al., 2010). The measure includes words with missing letters that participants fill out, six of which have potential death fragments: "BUR_ _D", "DE_ _", "GRA_ _" (see Appendix C for full list).

An immortality scenario was utilized to measure the collectivism aspect of our research. There are multiple parts to this scenario. In the first part, participants were told that they found an elixir of life that means they have no chance of dying if they choose to take it and the world continues on indefinitely. After the prompt is a question asking how likely they are to take the potion on a scale of zero (0) percent chance to one hundred (100) percent chance, going up by increments of 10. In the next part, a new scenario prompts them with an option of (1) destroying the potion, (2) taking it themselves with a 100% chance of it working, (3) sharing it with their close circle (5-10 people/animals) with 75% chance, (4) extended circle (15-20 people/animals) with a 50% chance, or (5) everyone (entire population/animals) with a 25% chance of success. After choosing, an open-ended question asks them why they chose the answer they did (see Appendix D for full scenarios).

Procedure

All data was gathered through an online survey sent out through email and social media postings. Participants were given an informed consent form before starting the survey, were able to pull out at any time, and had the ability to refuse to answer any questions they did not want to answer. The entire survey took around 15 minutes to complete.

Each participant was given basic demographic questions and then randomly assigned to one of the two groups for MAPS. After answering the two MAPS prompts, participants were given the delay passage to read. Subgroups within the death primed group and dental primed group were also randomly assigned to either receive the death thought accessibility measure after the delay or to go straight to the immortality scenario. Upon completion of the survey, participants were debriefed.

<div align="center">

Results

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Overall, participants in the dental pain group were significantly more likely to choose to take the immortality potion [M=33.03, SD=31.89, t(118)=-2.36, p=.010] as well as share the potion [M=3.46, SD=1.90, t(118)=-2.53, p=.006]. The death thought accessibility (DTA) measure did not yield any significant results.

When looking at demographics, there were four groups that had significant differences. First, as shown in Figure 1, participants who were not at all religious or slightly religious in the dental pain group were significantly more likely to choose to take the immortality potion (M=37.40, SD=32.31) than those in the death reminder group (M=21.36, SD=33.34), t(85)=-2.27, p=.01. Displayed in Figure 2, non-religious participants in the dental pain group were also

significantly more likely to share the potion with others (M=3.86, SD=1.78) than the non-religious participants in the death group (M=2.62, SD=2.10), $t(85)$=-2.95, p=.002.
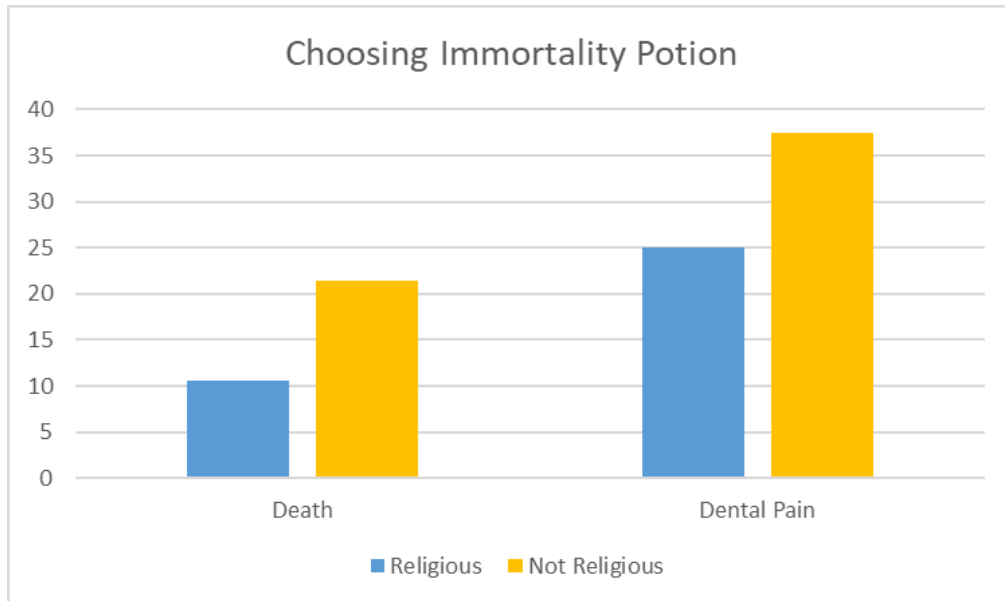

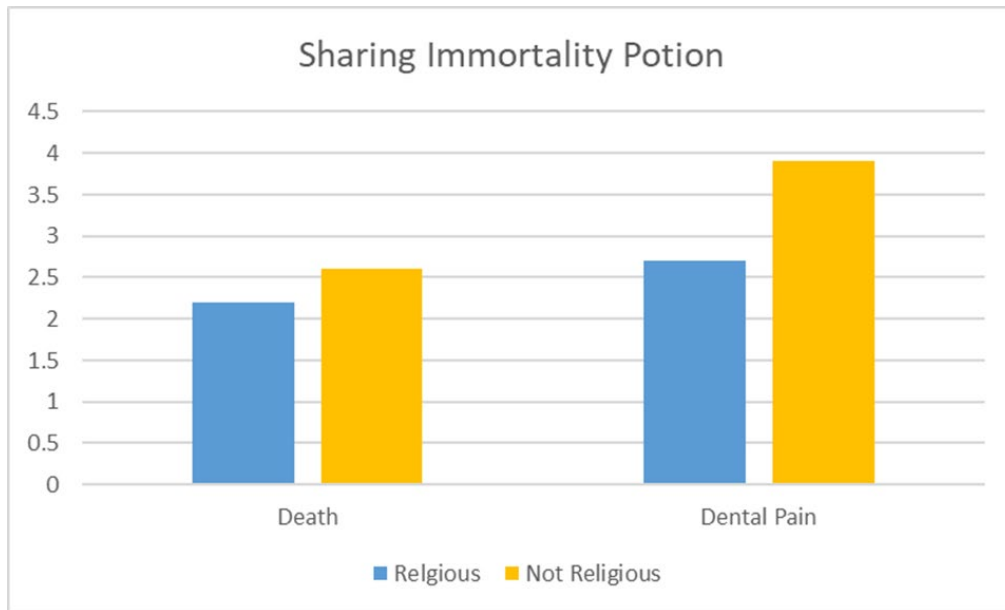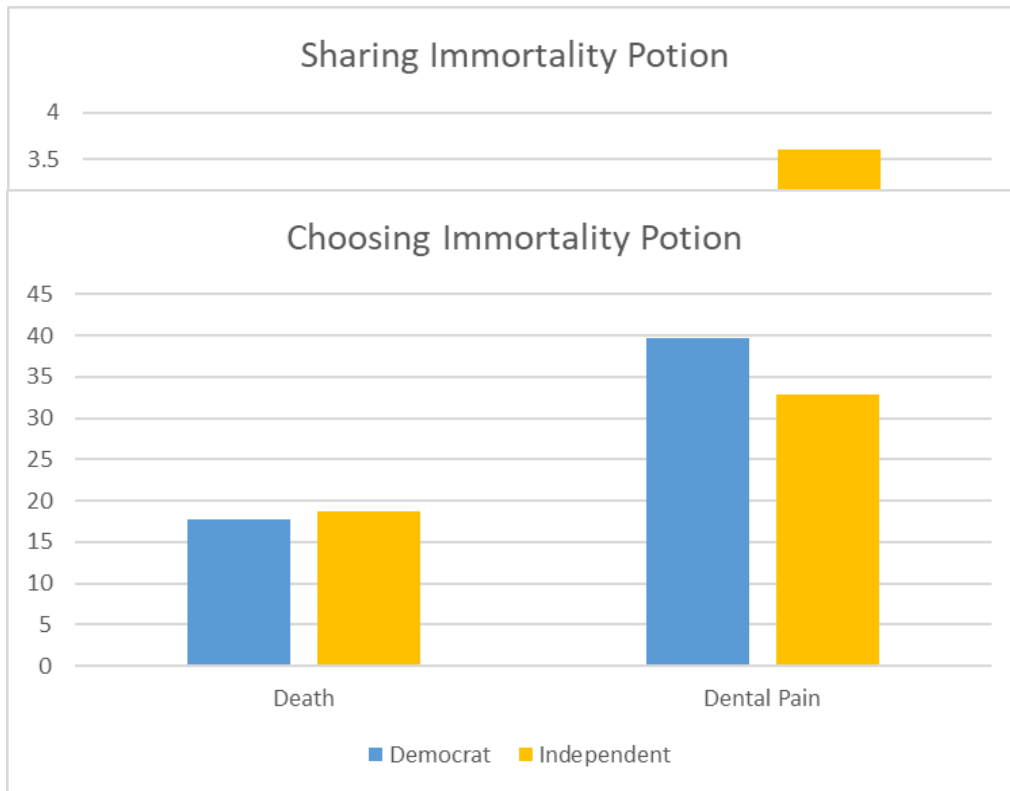*Figure 1.* Choosing the immortality potion by religiosity

Figure 2. Sharing the immortality potion by religiosity

There were also significant differences by gender, as seen below in Figure 3. Women in the dental pain group were significantly more likely to share the potion with others (*M*=3.60, *SD*=1.94) than women in the death group (*M*=2.68, *SD*=2.17), *t*(72)=-1.90, *p*=.03. There was a trend towards significance when women in the dental pain group (*M*=31.74, *SD*=28.85) were choosing if they would take the potion compared to women in the death group (*M*=20.56, *SD*=30.41), *t*(72)=-1.61, *p*=.06.

Figure 3. Sharing the immortality potion by gender

The next demographic that had a significant difference between the death and dental pain groups was political affiliation (see Figure 4). Democrats were the only political party that had any difference between groups. Those in the dental pain group (*M*=39.70, *SD*=32.63) were significantly more likely to choose to take the potion than the democrats in the death group

(*M*=18.69, *SD*=30.00), *t*(56)=-2.68, *p*=.005.

Figure 4. Choosing the immortality potion by political party

Lastly, ethnicity was analyzed, as Figures 5 and 6 display. Caucasian participants in the dental pain group (*M*=33.77, *SD*=31.61) were significantly more likely to choose to take the potion than those in the death group (*M*=20.71, *SD*=32.26), *t*(85)=-2.01, *p*=.02. Sharing the potion with others followed the same trend with Caucasian participants in the dental pain group (*M*=3.51, *SD*=1.91) being significantly more likely to share the potion with others than Caucasian participants in the death group (*M*=2.42, *SD*=2.05), *t*(85)=-2.56, *p*=.006.
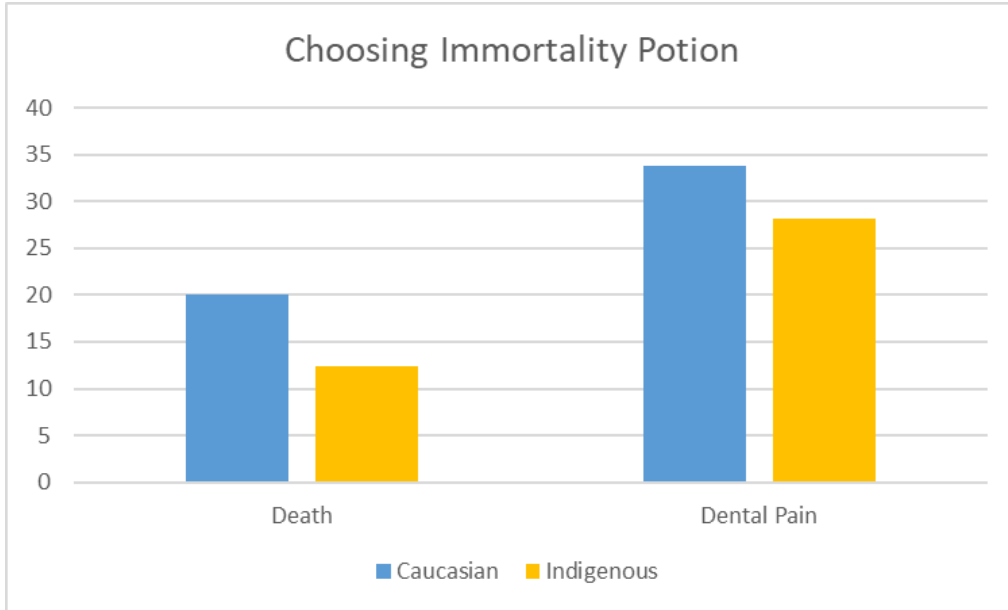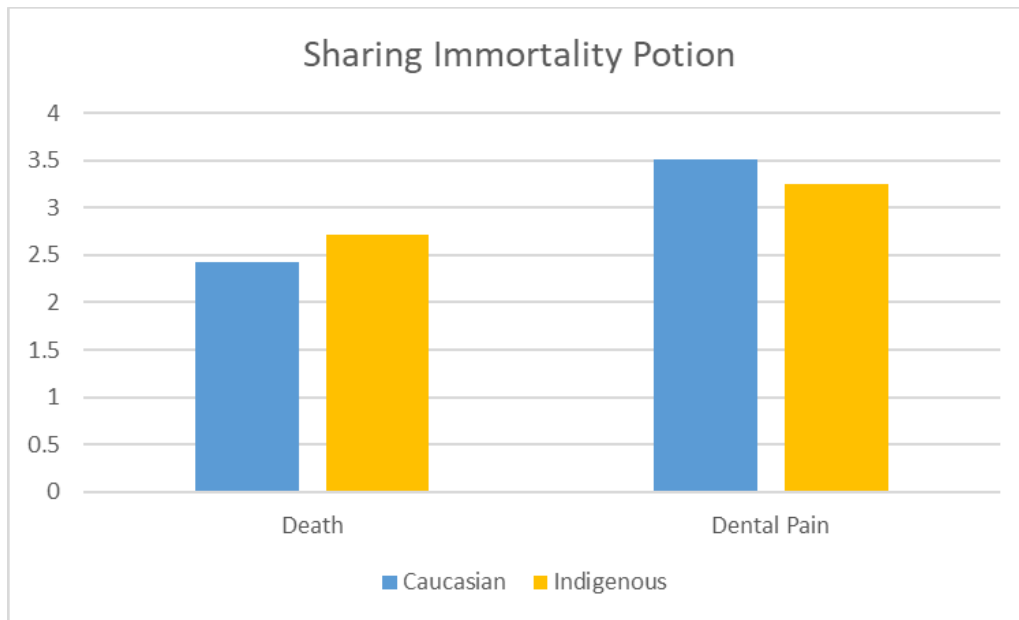
Figure 5. Choosing the immortality potion by ethnicity
Figure 6. Sharing the immortality potion by ethnicity

Discussion

Overall, our findings did not support our hypothesis that individuals reminded of their death would be more likely to choose group immortality because death reminders increase feelings of closeness to others. However, our results showed an unexpected opposite effect, in which individuals in the control dental pain group were significantly more likely to choose group immortality, whereas those in the death group were more likely to choose self-immortality. When analyzing different demographics, we also found significant differences by religiosity, gender, political affiliation, and ethnicity.

Moreover, non-religious, Caucasian women in the control group were the most likely to choose to take the potion as well as share it with others. Overall, participants who were not at all religious or slightly religious in the dental pain group were significantly more likely to choose the immortality potion. Non-religious participants in the control group were also significantly more likely to share the potion with others. Our results also showed that Democrats were the only political party that had any difference between groups. Those in the control group were significantly more likely to choose to take the potion than Democrats in the death group. Lastly, findings from Jiyoung & Yungwook (2021) that people think of the deaths of others when thinking of one's own death was supported by the current study as many participants stated concern for others as a factor in choosing to destroy the potion rather than share.

These results prompted the question of why thinking of death makes people less likely to take and share the potion with others. One possible explanation for this effect may be that, when participants were asked to share a short answer explanation for their choice, many of those who chose to destroy the potion provided cultural and collectivistic reasonings for their choice to destroy the potion. Examples of participants responses include: "[I] don't want anything to do with the potion, nor am I going to subject others/animals to the hell of eternal existence," "I only have the right to determine for myself" and "Do I really want to live on past my loved ones?"

Moreover, it is feasible that, because some religions include their own form of literal immortality as a major component, prolonging physical life would oppose this plan. Participants with this point of view responded with answers such as: "God has a perfect plan in life, death, and suffering, and that eternity will be spent in heaven" and "I have no desire to live on this earth for immortality. Instead, I am looking forward to immortality in heaven with God."

Another potential explanation for this effect could be that it would be unnatural and against the balance of nature to expand human lives indefinitely. Some examples of these thoughts from participants included: "We as humans aren't meant to live forever. We come here to fulfill our purpose and move on while the next generation comes in to fulfill their purpose" and "Part of life is dying, even [if] that means losing the ones closest to you; it's nature." It may also be correlated with human knowledge that our lives are limited, and we are willing to accept this regardless of our fears.

Several limitations occurred in our study. Firstly, the wording in regard to the effects of the potion may have been unclear to participants, affecting the selection of their immortality choice. Specifically, it was not explicitly stated that you would remain in good health and any physical diseases or conditions would not be detrimental. Second, we did not clarify whether you would continue aging physically if you took the potion, or if you would remain the same age indefinitely. Third, the description could have specified that others can decide if they want the potion as well or not, which may have been a common reason for destroying the potion. Overall, the study could have given more specific details about the effects of the potion and what would happen if you chose to take it. Another limitation was our sample size in specific demographics. Though our overall sample size (120) was favorable, several demographics including males, people with Black and Asian American ethnicities, and religious participants had a smaller sample size than others, which may have influenced our results.

Lastly, we did not fully consider the socioeconomic status (SES) of participants. Moreover, when asking the demographic questions, we did not ask questions about education level, the environment they are currently in/grew up in (rural, urban, suburban), and income.

Despite a number of limitations to this study, there were many strengths as well. The results of this study furnish new insight into a form of literal immortality that few studies in terror management theory (TMT) have researched previously. This line on inquiry may also develop new ideas for future TMT studies to use, as well as methods to study physical immortality in relation to TMT. Yet another strength to this study was the considerable number of Native American participants. Twenty-four percent of participants identified as Native American / Indigenous, and this ethnic group is consistently underrepresented in psychology research.

Future research should aim to explore mortality salience and physical immortality in more collectivist cultures as this study was primarily driven by Caucasian participants in the United States, which tends to be a more individualist culture. A focus on collectivist cultures such as Native American or Mexican cultures may produce different results than our findings as these are more family and group focused. They could produce either more results of participants choosing to destroy the potion because of religious or cultural reasons, or increased results of choosing to share the potion in align with our original hypothesis, as they may focus on living forever with a shared group. Nonetheless, we believe results would differ across cultures, and it would be crucial to understand the effects of mortality salience on physical immortality across multiple cultures. We would encourage future studies to offer more details or specifics as to the effects of an immortality potion, in an effort to lessen any confusion for participants when selecting their choice. We hope our methods will aid future studies in bridging the gap between terror management theory and its connection to physical immortality.

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Appendix A

MAPS

Following are two open-ended questions. Please respond to them with your first, natural response. We are looking for peoples' gut-level reactions to these questions.

PLEASE DESCRIBE THE EMOTIONS THAT THE THOUGHT OF YOUR OWN DEATH AROUSES IN YOU.

Now please describe more of your detailed thoughts related to the previous question. What will death be like physically for you?

PLEASE DESCRIBE THE EMOTIONS THAT THE THOUGHT OF DENTAL PAIN AROUSES IN YOU.

Now please describe more of your detailed thoughts related to the previous question. What will going to the dentist be like for you?

Appendix B

Delay "The Growing Stone"

Please read the following short passage from a novel and answer the questions below it.

The automobile swung clumsily around the curve in the red sandstone trail, now a mass of mud. The headlights suddenly picked out in the night—first on one side of the road, then on the other—two wooden huts with sheet metal roofs. On the right near the second one, a tower of course beams could be made out in the light fog. From the top of the tower a metal cable, invisible at its starting-point, shone as it sloped down into the light from the car before disappearing behind the embankment that blocked the road. The car slowed down and stopped a few yards from the huts.

How do you feel about the overall descriptive qualities of the story?

1. Extremely dissatisfied
2. Somewhat dissatisfied
3. Neither satisfied nor dissatisfied
4. Somewhat satisfied
5. Extremely satisfied

Appendix C

Death Thought Accessibility Word Association

1. BUR _ _ D   14. CHA _ _

2. PLA _ _   15. KI _ _ ED

3. _ _ OK   16. CL _ _ K

4. WAT _ _   17. TAB _ _

5. DE _ _   18. W _ _ DOW

6. MU _ _   19. SK _ _ L

7. _ _ NG   20. TR _ _

8. B _ T _ LE   21. P _ P _ R

9. M _ J _ R   22. COFF _ _

10. P _ _ TURE   23. _ O _ SE

11. FL _ W _ R   24. POST _ _

12. GRA _ _   25. R _ DI _

13. K _ _GS

Appendix D

Immortality Scenario

 You find an immortality potion that will make you healthy and live forever with no chance of death if you consume it, and the world will continue indefinitely.
(Use a sliding scale between 0% and 100% in increments of 10)
1. Would you choose to take the potion?
    No, never (0%) . . . . Yes, absolutely (100%)

    Why?

If you drink the entire potion yourself then you will have a 100% chance of immortality, if you only drink some of it and share it with others including animals, the chance of immortality decreases with each additional person/animal you choose to share it with. How likely are you to do the following?
1. Destroy (no immortality)
2. Self-100% chance
3. Close circle (5-10 people/animals) 75% chance
4. Extended circle (15-20 people/animals) 50% chance
5. Everyone (the entire population/animals) 25% chance

Please explain why you chose the answer you selected and how it made you feel.
How would you feel if the potion did not work?
How would you feel if the potion did work?