Published in final edited form as:

Int J Psychol. 2014 August ; 49(4): 313–317. doi:10.1002/ijop.12025.

Closing the empathy gap in college students' judgments of end-of-life tradeoffs

Joseph D. W. Stephens,

North Carolina Agricultural and Technical State University

Danielle S. Neal, and

North Carolina Agricultural and Technical State University

Amy A. Overman

Elon University

Abstract

When considering hypothetical end-of-life scenarios involving 80-year-old intensive-care unit patients, young adults are more likely than older adults to judge that shorter lifespan would be a fair trade in exchange for a more pleasant death (Bryce et al., 2004). This result has been interpreted in terms of an empathy gap, in which individuals fail to relate to the affective states of others. If so, the effect should be reduced when young adults consider scenarios involving patients similar to themselves. The present study examined college students' willingness to trade healthy lifespan for better death in end-of-life scenarios involving 80-year-old and 22-year-old cancer victims. Results indicated students under 30 were less likely to trade lifespan in the 22-year-old scenarios, and were less likely to trade lifespan in either set of scenarios when the 22-year-old scenarios were presented first. The findings are consistent with an empathy gap account of judgments concerning end-of-life care.

Keywords

empathy gap; age; end-of-life; decision making

Individuals in one affective state tend to be inaccurate in predicting what their own preferences would be in a different state (e.g., Wilson & Gilbert, 2003). These "empathy gaps" also influence people's judgments of how others would feel or behave in situations different than their own (Van Boven & Loewenstein, 2003). Loewenstein's (2005) review of medical decision-making argued that empathy gaps can have important consequences in domains such as end-of-life (EOL) care, in which the patient and decision-maker are often different people, whose affective states may not match.

As an example of empathy gaps' influence on decisions regarding end-of-life care, Loewenstein (2005) cited an earlier study (Bryce et al., 2004) in which participants were

asked to consider dimensions along which EOL care could be a relatively more positive or negative experience for the patient, such as the level of pain or discomfort, or financial and emotional support. Bryce et al. had participants read several scenarios involving two hypothetical 80-year-old intensive-care unit (ICU) patients. In each, one of the patients had relatively worse EOL care than the other. Participants were then asked to make the overall quality of life equivalent across the two patients by specifying what the healthy lifespan of the patient with better EOL care would need to be. Participants were expected to adjust downward the healthy lifespan of the patient with better EOL care as a tradeoff for the more positive experience. The purpose of the study was to determine how much value participants placed on the various dimensions of EOL care in terms of lifespan traded, and what factors reliably predicted participants' willingness to trade lifespan in this manner.

The Bryce et al. (2004) study was not explicitly concerned with empathy gaps, but Loewenstein (2005) cited it as an example of an empathy gap because it found that younger participants (under 40) were more likely to trade lifespan in the EOL scenarios, and traded a greater amount of lifespan than older participants (over 40). According to an empathy-gap interpretation, young participants experienced a greater distance than older participants between their own situations and that of the patient in the EOL scenario. This affective distance presumably led young participants to underestimate the preciousness of remaining lifespan relative to older participants.

However, the influence of participant age on EOL tradeoffs in Bryce et al. (2004) could be due to factors such as differences in general attitudes towards death between young and older adults, rather than the affective distance between participants and hypothetical patients. Because all of the scenarios used by Bryce et al. involved 80-year-old men, the age difference between participants was merely observed, and not experimentally manipulated.

The current study tested the claim that EOL tradeoffs of the type studied by Bryce et al. (2004) are influenced by empathy gaps, by asking college students to judge EOL scenarios involving young patients (22 years) and older patients (80 years). If EOL tradeoffs are influenced by affective distance between the decision maker and the patient, then college students should be less willing to trade off healthy lifespan for someone more like themselves. Additionally, the affective distance in the 80-year-old scenarios should be reduced if participants encounter the 22-year-old scenarios first, similar to the effect of exercising prior to making judgments about others' thirst (Van Boven & Loewenstein, 2003). Thus, in addition to the effect of patient age on EOL judgments, we expected to find an interaction based on scenario order, such that responses to the 80-year-old scenarios would be more dependent on which scenarios were presented first.

Method

Participants

Students at two universities in the southeastern United States participated by accessing an online survey ($N = 209$). Participants were recruited from undergraduate psychology courses and received extra credit for participation. All study procedures were approved by the institutional review boards of both institutions.

Materials

The online survey used in this study was modeled after the computer-based survey developed by Bryce et al. (2004). The current survey presented two pairs of brief scenarios; each pair contrasted two individuals who were diagnosed with cancer and subsequently died. One pair of scenarios involved 80-year-olds (labeled “Elder A” and “Elder B”), and one pair involved 22-year-olds (labeled “Student A” and “Student B”).

The first scenario in each pair described a person (Elder A/Student A) whose EOL experience included several negative elements, including “bad side effects from chemotherapy and radiation,” “family went bankrupt from medical costs,” and “died slowly on a ventilator in the ICU.” The second scenario in each pair described a person (Elder B/Student B) whose cancer was discovered at a late stage and whose death came more quickly and with fewer negative elements than the first scenario (e.g., “less financial burden,” “no hope for treatment so they just got hospice care,” and “died in pleasant surroundings with loved ones around”).

One positive element was included in the Elder A/Student A scenarios that was not present in the Elder B/Student B scenarios: specifically, a statement regarding something that the person lived to witness – i.e., Elder A “lived to see grandchildren graduate from college” and Student A “lived to see graduation day.” This statement was intended to encourage participants to place some value on longevity. Other than age and the slight difference in the “witnessed event” statement between Elder A and Student A, the elder and student scenarios were identical.

For each pair of scenarios, the survey specified the age of the person with the “bad” death when diagnosed with cancer (i.e., 80 years, 0 months, 0 days for Elder A; 22 years, 0 months, 0 days for Student A). Participants read the following text (substituting the word “student” where applicable):

Consider the differences in overall quality of life between these two elders. Do you think that Elder B had a better overall quality of life than Elder A? If so, use the drop-down menus below to adjust the amount of Elder B’s life that was lived in perfect health (before diagnosis) so that Elder B’s overall quality of life would be equivalent to Elder A. If you do not wish to answer this question, simply leave the responses blank.

Participants then chose the number of years, months, and days in the healthy lifespan of the person with the “good” death that would equate quality of life between the two individuals. After reading and responding to each pair of scenarios, participants were asked which person’s life they would rather have for themselves. Apart from the scenarios, participants were asked to specify their own age, sex, race, marital status, whether they had children, whether they had experienced the loss of a loved one, whether they knew someone who had been diagnosed with cancer, and the importance of religion in their lives.

Procedure

Participants accessed the survey via a weblink provided by their course instructors. Approximately half of participants received a version of the survey in which the elder

scenarios were presented first, and approximately half received a version in which the student scenarios were presented first; order was randomly assigned. Questions concerning participants' religiosity and familiarity with death and cancer were presented at the beginning of the survey, and demographic items were presented between elder and student scenarios.

Results

The .05 level of significance was adopted throughout all statistical analyses. Of the 209 respondents who accessed the survey, 75 failed to respond to at least one EOL scenario and were excluded from further analysis.¹ Eleven additional participants over age 30 were excluded because they were relatively dissimilar to the patients' age in the "student" scenarios.² Of the remaining 123 participants, 83 (67.5%) were female. Seventy-nine participants (64.2%) identified as African American; 37 (30.1%) identified as White; and seven (5.7%) identified as another race or did not specify their race. Twelve participants (9.8%) indicated they were married/cohabiting, and seven (5.7%) reported having a child. A majority of participants reported having experienced the loss of a loved one (111 participants; 90.2%) and knowing someone who had been diagnosed with cancer (106 participants; 86.2%). Eighty-five participants (69.1%) responded that religion was either "important" or "very important" in their lives.

End-of-Life Tradeoffs

Participants' responses to the two pairs of EOL scenarios were analyzed with respect to two dependent variables: first, whether lifespan of the person with the "good death" was reduced in either pair of scenarios; and second, the size of the reduction among those participants who did reduce lifespan.

Were participants more likely to trade lifespan in the elder scenarios?—In the elder scenarios, participants were fairly equally divided on whether to reduce healthy lifespan for the individual with the "good" death, whereas a majority of participants did not reduce lifespan in the student scenarios (Table 1). Additionally, few participants reduced lifespan in the student scenarios without also doing so in the elder scenarios. A McNemar test on the data in Table 1 confirmed that the distribution of reduction vs. non-reduction responses differed across the elder and student scenarios, $\chi^2(1, N = 123) = 4.03, p = .045, \phi = .51$.³

Participants' lifespan reduction decision in each pair of scenarios was also examined with respect to scenario order: i.e., whether the elder scenarios or the student scenarios appeared first in the survey (Table 2). A chi-square test of independence found a significant relationship between scenario order and reduction responses, $\chi^2(3, N = 123) = 11.3, p = .01$, Cramer's $V = .30$. In particular, these factors interacted such that participants who encountered the student scenarios first were less likely to reduce lifespan for Elder B only

¹Number of incomplete surveys did not significantly differ based on scenario order (44 for elder first; 31 for student first), $\chi^2(1, N = 75) = 2.25, p = .13$.

²With one exception (noted below), all statistically significant findings remained so with these individuals included.

³Result was not significant with individuals over 30 included, $\chi^2(1, N = 134) = 3.23, p = .072$.

and more likely not to reduce lifespan in either pair of scenarios. This pattern is consistent with the interpretation that judging the student scenarios first reduced affective distance in the subsequent elder scenarios.

Finally, binary logistic regression was used to examine whether any other factors predicted participants' likelihood of reducing lifespan in exchange for a "good" death. In this analysis, the dependent variable was whether each participant had reduced lifespan in at least one pair of scenarios. The regression was performed using the forward stepwise (conditional) method, and included the following predictor variables: order, sex, religiosity, race, location, age, death of a loved one, knowledge of a person with cancer, and marital status (three additional participants were left out of the regression because they had not responded to all of these items on the survey). A significant model emerged, $\chi^2(1, N = 120) = 5.06, p = .024$, which included only order as a significant predictor, $\beta = .836$, Wald $\chi^2(1) = 4.94, p = .026, e^{\beta} = 2.307$.

How much lifespan did participants trade?—Among participants who traded lifespan in both pairs of scenarios ($N = 38$), the amount of reduction was directly compared. For elder scenarios, the mean reduction was 83.2 months ($SD = 66.4$) and median was 60.0 months. For student scenarios, the mean reduction was 35.0 months ($SD = 33.6$) and median was 24.0 months. Since the distributions of reductions were positively skewed, means of reductions were compared using log-transformed data, and medians were compared using sign tests. A paired-samples t -test on log-transformed reductions found that the mean difference across scenarios was significant, $t(37) = 4.22, p < .001, d = .80$. Likewise, a related-samples sign test on non-transformed data found a significant median difference between scenarios, $p < .001, PS_{dep} = .79$.

Log-transformed length of reduction was also compared across scenario orders, among participants who reduced lifespan for Elder B ($N = 59$), and separately among participants who reduced lifespan for Student B ($N = 47$). Significantly less lifespan was traded for Elder B when the student scenario was judged first, $t(57) = 2.26, p = .03, d = .60$. No order effect was found for the reduction in Student B's lifespan, $t(45) = 1.10, p = .28$.

Discussion

Bryce et al. (2004) found that younger individuals (under 40) were more likely to trade healthy lifespan in exchange for a better death when judging EOL scenarios. The present study tested the claim (Loewenstein, 2005) that those findings constitute an example of an empathy gap, in which young adults placed less value on longevity than older adults due to the greater age difference between themselves and the patients in the EOL scenarios. The empathy-gap hypothesis was tested by asking college students to consider two sets of EOL scenarios: one involving elderly cancer victims and one involving young cancer victims. If empathy gaps influence young adults' willingness to trade healthy lifespan for better EOL care, then this willingness should be reduced when considering scenarios involving young patients compared to scenarios involving older patients.

As predicted by the empathy-gap hypothesis, college student participants were less likely to trade healthy lifespan in the scenarios that involved 22-year old students versus those involving 80-year-old elders, and among participants who traded lifespan in both pairs of scenarios, the absolute length of traded lifespan was greater in the elder scenarios than in the student scenarios. Importantly, additional lifespan trading differences were found based on the ordering of scenarios. Participants who encountered the student scenarios first were more likely *not* to trade lifespan in either pair of scenarios than those who encountered the elder scenarios first. Additionally, participants who traded lifespan in the elder scenarios traded less lifespan when the student scenarios were judged first. Together, these results support the hypothesis that there was a greater affective distance between young participants and EOL scenarios involving 80-year-olds versus 22-year-olds. The results further suggest that considering EOL scenarios for 22-year-olds reduced the affective distance in subsequent judgments by increasing the perceived similarity between participants and hypothetical elders. Another recent study (Wolpin, Yzerbyt, & Corneille, 2011) similarly found that empathy gaps in predictions of willingness to dance in public were reduced when participants were primed with conditions that increased perceived similarity between self and others. In this respect, the order effect observed in the current study also reflected the tendency for individuals to display egocentrism in social judgments (e.g., Dunning & Hayes, 1996). Whereas egocentrism can sometimes be found to *cause* empathy gaps (e.g., Van Boven, Dunning, & Loewenstein, 2000), in the present study the empathy gap was reduced when participants were prompted to view hypothetical others' desires as more similar to their own.

One difference between the current results and those of Bryce et al. (2004) is that demographic variables did not predict the likelihood of trading lifespan, whereas Bryce et al. found a variety of demographic predictors, including race. Overall, the lack of significant demographic variables in the current study may reflect the relative homogeneity of the sample on most of the variables measured (Bryce et al. sampled a broader population). That race was not a significant predictor suggests race does not play a role in EOL judgments among college students.

Another interesting aspect of the current results is the relatively large amount of time traded by those who did trade lifespan. Although Bryce et al. (2004) did not report the amount of time traded by a directly comparable subgroup of participants, they did report a regression analysis that predicted 40.3 months traded by participants under 40. In comparison, the median amount of time traded (by young participants) in the elder scenarios in the current study was 60 months. Additionally, Bryce et al. reported that 83.1% of participants under 40 traded lifespan in at least one set of scenarios, whereas only 55.3% of participants in the current study traded lifespan in either pair of scenarios (in part because of reduced willingness to trade in the student-first order). Thus, the current results are in line with prior findings, in that participants were relatively more willing to trade lifespan in some respects but not others.

In summary, the current results underscore the importance of empathy gaps in how young adults make judgments about medical scenarios such as EOL care. College students' judgments appear to be influenced by the similarity of the patients' situations to their own

lives. A practical implication of these findings is that young-adult decision makers may be influenced to empathize with older patients to a greater extent by first considering equivalent situations that involve young patients.

Acknowledgments

D.N. was supported by grant number 5 R25 GM076162 from the National Institutes of Health. The authors thank C.J. Fleischmann for assistance with data collection.

References

- Bryce CL, Loewenstein G, Arnold RM, Schooler J, Wax RS, Angus DC. Quality of death: Assessing the importance placed on end-of-life treatment in the intensive-care unit. *Medical Care*. 2004; 42:423–431. [PubMed: 15083102]
- Dunning D, Hayes AF. Evidence for egocentric comparison in social judgment. *Journal of Personality and Social Psychology*. 1996; 71:213–229.
- Loewenstein G. Hot-cold empathy gaps and medical decision making. *Health Psychology*. 2005; 24:S49–S56. [PubMed: 16045419]
- Van Boven L, Dunning D, Loewenstein G. Egocentric empathy gaps between owners and buyers: Misperceptions of the endowment effect. *Journal of Personality and Social Psychology*. 2000; 79:66–76. [PubMed: 10909878]
- Van Boven L, Loewenstein G. Social projection of transient visceral feelings. *Personality and Social Psychology Bulletin*. 2003; 29:1159–1168. [PubMed: 15189611]
- Wilson, TD.; Gilbert, DT. Affective forecasting. In: Zanna, M., editor. *Advances in Experimental Social Psychology*. Vol. 35. New York: Elsevier; 2003. p. 345-411.
- Wolfin KA, Yzerbyt VY, Corneille O. On reducing an empathy gap: The impact of self-construal and order of judgment. *British Journal of Social Psychology*. 2011; 50(3):553–562. [PubMed: 21631539]

Table 1

Number of Participants Who Traded Healthy Lifespan for “Better” Death in Each Scenario

Elder Scenario	Student Scenario		Total
	Traded	Did Not Trade	
Traded	38	21	59
Did Not Trade	9	55	64
Total	47	76	123

Table 2

Percentage of Participants who Traded Healthy Lifespan by Scenario Order

Scenario Order	N	Elder Scenario Only	Student Scenario Only	Both Scenarios	Neither Scenario
Elder First	58	25.9%	12.1%	27.6%	34.5%
Student First	65	9.2%	3.1%	33.8%	53.8%
Total	123	17.1%	7.3%	30.9%	44.7%