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Abstract

Narrative texts are easier to understand and remember than expository texts, but are they also more influential or persuasive? Prior evidence is mixed. An experiment with 824 undergraduates tested whether brief narrative texts could influence participants' reported preferences about end-of-life medical treatments. The hypothesis that narrative texts would be more influential than expository texts was not confirmed. Preferences were, however, influenced more by reading about what doctors prefer for themselves than by what non-physicians prefer.

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Narrative and expository texts differ in structure and comprehension ease, with narratives typically being easier to understand and remember (Clinton et al., 2020; Graesser, 1985; Graesser et al., 1980; 2011; Haberlandt & Bullock et al., 2021; Mensink, Kendeou, & Rapp, 2021). Are narratives also more influential or persuasive? The evidence is mixed. In Tversky & Kahneman's (1974; Kahneman & Tversky, 1981; 1996) heuristics and biases framework the simulation and representativeness heuristics are both examples of being inappropriately influenced by a plausible story. Bullock et al. (2021) found that narratives can be persuasive, but not more persuasive than comparable expository texts. Similarly, Ecker et al. (2020) found that narratives were no more effective for correcting misinformation. Furthermore, a meta-analysis by Freling et al. (2020) found that narratives were actually less persuasive than expository statistical information overall, with narratives being more persuasive only for high-stakes or personally relevant issues.

Medical and health decisions are personally relevant and potentially high-stakes issues for which narratives have sometimes been found to be particularly persuasive (De Wit & Vet, 2008; McQueen et al. 2011). Could preferences regarding end-of-life care be influenced by narratives? Medical professionals express preferences for far fewer end-of-life interventions such as CPR, intubation, or a feeding tube than do patients or family members (Ang, Zhang & Lim, 2016; Gallo et al., 2003; Periyakoil et al., 2014). One potential contributing factor could be the influence of narratives. The stories that doctors know about intensive medical treatments are quite different from those in television dramas. Portrayals of CPR, for example, in TV and movies vastly over-represent the likelihood of positive outcomes (Diem et al., 1996). Physicians,

on the other hand, are more likely to have first-hand narratives with much more negative outcomes (Gawande, 2014).

This study's primary hypothesis was that people's stated preferences regarding end-of-life care options would be influenced by information presented in brief texts, with larger effects for narrative texts than expository texts (IV1 = text type). A second hypothesis was that objective information about the probabilities of outcomes would influence preferences (IV2 = outcomes: positive vs. negative). A third hypothesis was that knowing the preferences of other people would influence reported preferences (IV3 = opinion source: doctors vs. patients).

Method

Participants were 824 undergraduates in Intro to Psychology.

A modified version of the Hopkins Precursors Study (Gallo et al., 2003) was administered with 11 questions about whether medical procedures would be wanted in a situation involving brain damage and no chance of recovery. Answers were on a 5-point likert scale from "No, definitely would not want" (1) to "Yes, definitely would want," (5). A prior "background information" paragraph implemented the experimental manipulations.

There were 9 conditions: A baseline condition (minimal information, 45 words) plus 8 conditions defined by crossing three factors:

- *Text Type*: expository (178 words) vs. narrative (203 words)
- *Source* of opinions: doctors (42 words) vs. public (44 words)
- *Outcome* statistics that are: optimistic (54 words) vs. pessimistic (50 words)

All of the information in the background information passages was factual, taken directly from either news reports or published research. The experimental manipulations were

accomplished simply by the selection and framing (Tversky & Kahneman, 1981) of the factual information that was presented.

Results

Results are reported for participants who were coded as having fully read the background content passages (per-word reading times of 100 ms or greater: "readers," N = 495) and for "all" 820 participants.

The responses for the 10 life-extending procedure questions (not including "Pain medication") were averaged to create a scale indicating the degree to which participants would want "Interventions" (See Figure 1).

Did any of the conditions differ from baseline? The mean agreement ratings (1=No, 5=Yes) for the 9 conditions including the baseline were analyzed in a generalized linear model (R stats package, function glm). The overall effect of condition was significant, F (8, 447) = 2.69, $p = 0.01$ for readers; F (8, 740) = 2.31, $p = 0.02$ for all participants. Paired comparisons with a Bonferroni adjustment indicated that only three of the eight conditions had agreement ratings significantly lower than baseline, and all three featured opinions of doctors: Expository texts, Optimistic outcome information, Doctors' opinions ($p = 0.03$ readers, $p = 0.13$ all), Narrative, Optimistic, Doctors ($p = 0.02$ readers, $p = 0.04$ all), and Narrative, Pessimistic, Doctors ($p = 0.03$ readers, $p = 0.72$ all).

A second ANOVA tested the effects of the three IVs, without including the baseline condition. The main effect of Source was significant, indicating that participants were less inclined to endorse end of life interventions after reading that physicians do not want such interventions for themselves, compared to reading about the less clear preferences of non-physicians: F (1, 390) = 9.66, $p = 0.002$ for readers; F (1, 663) = 6.34, $p = 0.012$ for all

participants. No other main effects or interactions were statistically significant. Thus the results supported the hypothesis that knowing that doctors do not want to be given end of life procedures would make participants less likely to want such procedures for themselves, but there was insufficient evidence to support the hypotheses that narratives are more persuasive than expository texts, or that participants can be influenced by optimistic vs. pessimistic data about the outcomes of medical interventions. A Bayesian ANOVA in JASP (2024) using the default priors found strong support for a main effect of Source ($BF_{10} = 13.0$), but moderate support for the null hypothesis in the case of the main effects of Outcome ($BF_{10} = 0.12$) and Text Type ($BF_{10} = 0.11$).

The survey item about Pain Medication was analyzed individually. It is of interest because, unlike the other 10 items on the survey, it is not a life-extending intervention. In previous surveys doctors responded very differently to questions about pain medication than to questions about CPR and other life-extending interventions (Gallo et al., 2003). We might, therefore, expect a different pattern of responses for Pain Medication (see Figure 2).

Because the answers on a single likert-type item (unlike a likert-type scale composed of multiple items) tend to be highly non-normal, a binomial model was used for the analysis. Responses were recoded into two categories: "Yes" for the responses "Probably would want" and "Yes, definitely would want"; and "Not Yes" for the other three response categories. The recoded binary responses were analyzed using a generalized linear model (R stats package, function glm) specifying a binomial probability distribution family (logit link function).

Did any of the eight experimental conditions differ from the baseline response for the Pain Medication question? The overall effect of condition was not significant, X^2 (8) = 7.95, p = 0.44 for readers; X^2 (8) = 7.47, p = 0.49 for all participants. Thus, in contrast to the life-extending

interventions, there was no evidence that any of the manipulation texts had any effect on participants' ratings of whether they would want pain medications.

Discussion

Contrary to the primary hypothesis of this study, the brief texts in these experiments had relatively little effect on survey respondents' stated preferences regarding end-of-life care, and narrative texts were not more persuasive than expository texts. Informing participants that interventions such as CPR have a very low success rate also had no reliable effect. The only manipulation that reliably influenced participants' ratings was whether the source of information about other people's preferences was physicians. Participants were more likely to reject life-extending procedures when made aware that doctors overwhelmingly reject such procedures for themselves.

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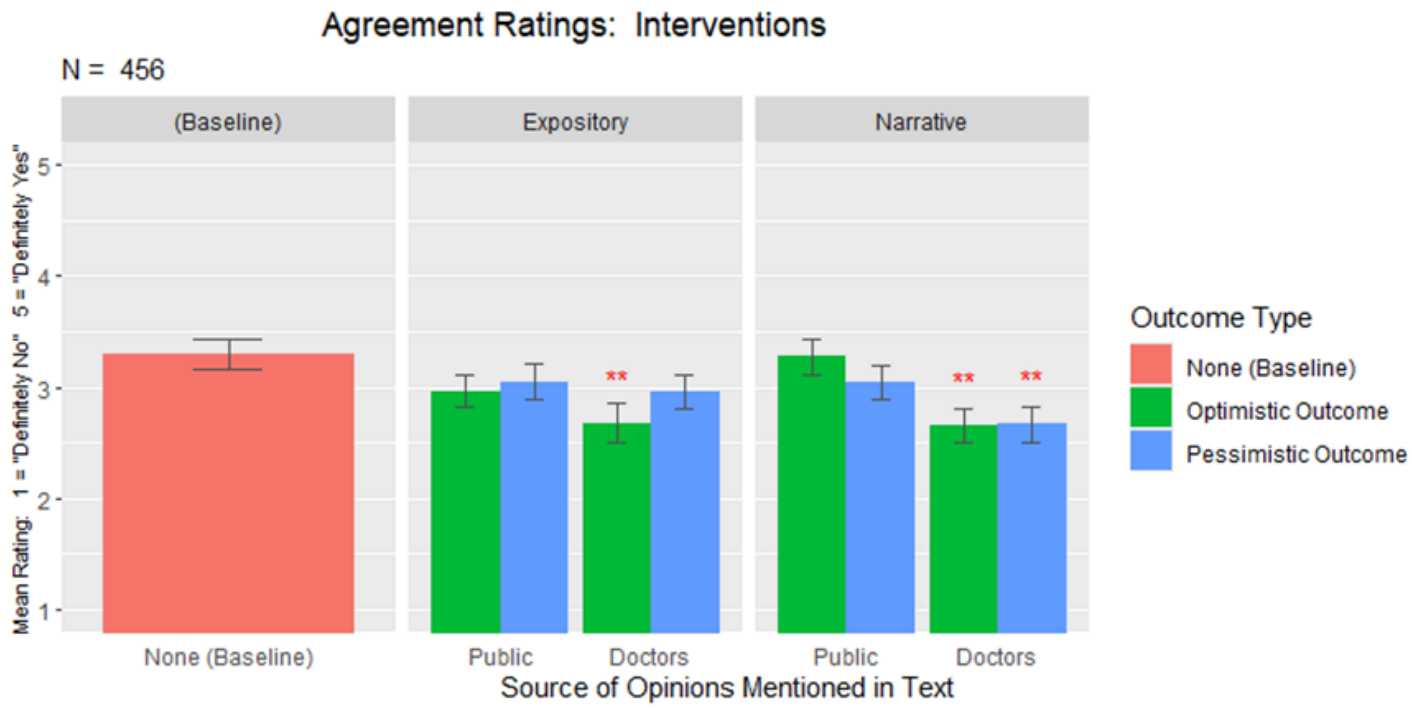
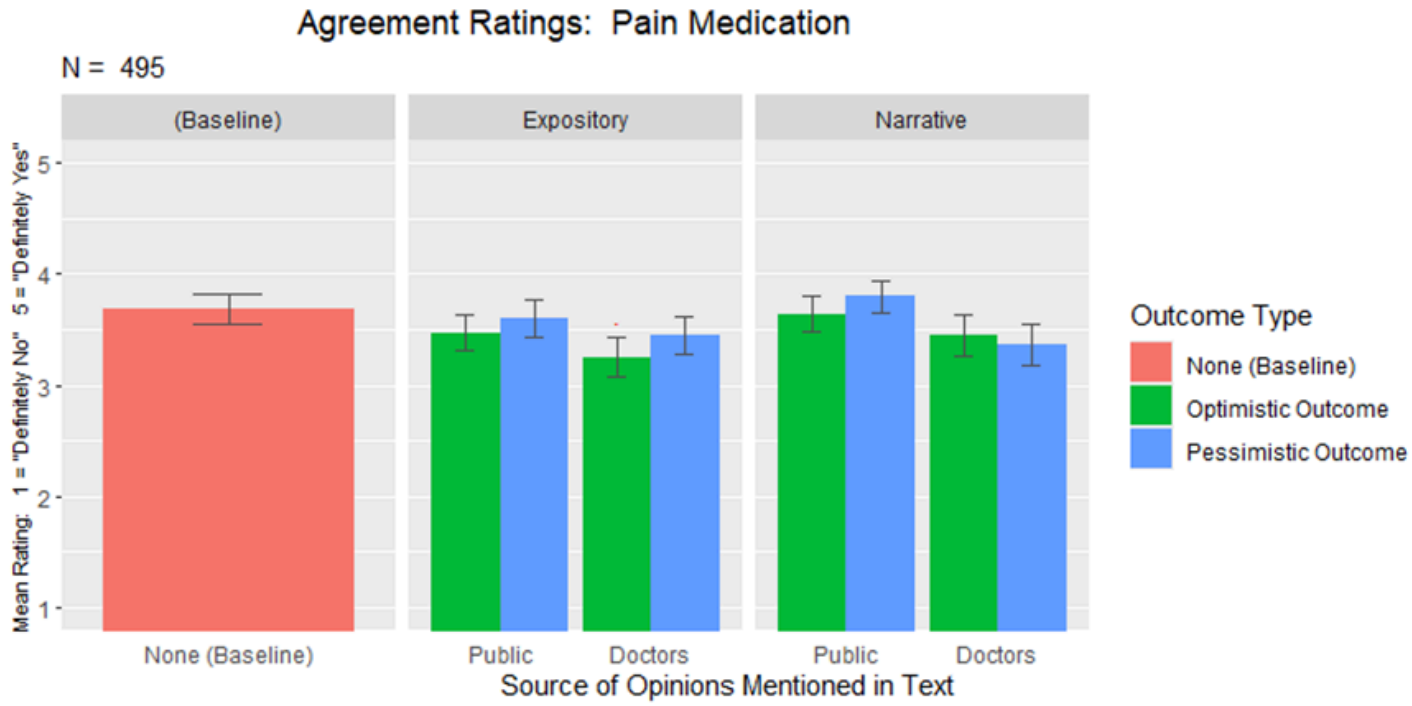
Figure 1



Unadjusted paired comparisons to the baseline condition: ** = p < .01; * = p < .05; . = p < .10

Figure 2



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