Barrier Title: Proportional dominance effect

*Report by David Reinstein*

# Related Terms

Drop in the bucket; mechanisms include “futility thinking” (Unger?), psychosocial numbing, quantitative confusion/innumeracy

# Description

*1-4 sentence description/definition of the barrier)*

People may be less willing to donate towards a cause when the magnitude of the underlying problem is (framed as) large. A certain amount of impact (e.g., relieving suffering) is perceived as smaller and thus less valuable when the underlying problem is larger.

# Conceptual Discussion:

*Overview of findings from papers, caveats, how the concept works, etc. Provides context for evidence section; Discussion of the relevant mechanisms at play; Discussion of the relevant established theories*

*Mechanisms*

Fetherstonhaugh et al (1997) highlight “Weber’s law”: Humans are sensitive to proportional changes/proportional differences in stimuli (loudness, brightness, etc); thus we are less sensitive to small changes relative to a larger baseline. There is evidence this also holds in assessing losses of life. ... the “subjective value of saving the specified number of lives is greater for a smaller tragedy than for a larger one” .

Baron attributes PD to quantity confusion and classifies this as “contamination by an irrelevant factor”; more generally, this could be seen in terms of *innumeracy*.

This may lead to a lower willingness to contribute to a problem when the apparent scale (or “denominator”) of the problem is larger (e.g., more lives at risk), holding constant the benefit per dollar contributed (cost per life saved). The *perceived* scale of the problem may depend on how it is framed by fundraisers, charities, and the media. However, this may not be completely manipulable: e.g., massive global problems may not be easy to “frame down.”

# EG Relevance

*How this particular barrier proves problematic for effective giving*

This effect represents a general departure from appropriate assessment of the marginal benefit (per cost) of a particular charity/intervention. Thus this is a general barrier to accurate assessment of effectiveness ergo a barrier to effective giving.

In addition, it might be argued that more effective interventions (e.g., targeting poor Africans versus US poverty) may tend to address problems that are inherently larger in scale and magnitude. These may be intrinsically harder to “frame down”, implying EG will suffer more from this bias.

# State of Evidence

*Key papers: Summarize findings and key takeaways, Short description of methods for relevant studies, Make sure to include both description of evidence and evaluation of evidence*

**Fetherstonhaugh et al 1997** (notes [HERE](https://docs.google.com/document/d/1YHaF4phpqthCEwwNdgd_QBZp5np0pHwHEJm3U2G1cxA/edit#heading=h.8ax2rgfz70of))

Methods

Range of hypothetical scenariae and evaluations, within-subject manipulations only (with clear contrasts), framed as aid/targeting not charitable donations, standard (mostly Economics) student subject pools.

These authors conducted survey experiments on standard (fairly small sample?) student participants. They presented a variety of hypothetical scenariae (e.g., “imagine themselves as a government official of a small, developing country”...), asking for ratings, rankings, etc.

Findings

> Studies 1 and 2 found that an intervention saving a fixed number of lives was judged significantly more beneficial when fewer lives were at risk overall. Study 3 found that respondents wanted the minimum number of lives a medical treatment would have to save to merit a fixed amount of funding to be much greater for a disease with a larger number of potential victims than for a disease with a smaller number.

Evaluation of paper’s evidence:

Strengths - Reasonably realistic frames, (mostly) consistent results across a variety of frames

Limitations - Hypothetical, framed, nonrepresentative, and does not directly address *own* contributions

Within-subject treatments here:

(+) allow estimation of heterogeneous responses,

(+/-) highlight the difference in denominators/proportions, making them salient; but this might also be expected to be an inhibitor of this (seemingly non-rational) effect, especially for the Economics-trained sample

Statistical tests (ANOVA) appear strong and highly significant in most cases, but further investigation warranted (e.g., pre-registration? Evidence of specification fishing and MHT?)

Brief on tangential papers (non charity) and papers supporting the mechanism

**Baron, 1997: “Confusion of Relative and Absolute Risk in Valuation”**

Methods

Hypothetical WTP questions. Within-subject manipulations only[[1]](#footnote-0); standard student subject pools, small samples.

S1: Questions about (hypothetical willingness to pay (WTP) for components of government government health insurance. “[Denominator] people die from this disease each year. Their average age is 60. How much are you willing to pay to cover a treatment that will save the lives of [Numerator] of these people?”... (Numerator=90 or 900; Denominator=100, 1000, or 10,000), all combinations presented to all participants.

S2: Set of causes, each gave WTP for a government program for a 5% reduction in that cause of death and for saving 2,600 lives, also rating prevalence and importance. He reports a very high correlation between WTP by these two measures, an “insensitivity to quantity”, and both WTP measures are higher when subjects report a higher prevalence (even controlling for stated importance).

Evaluation of paper’s evidence: This evidence appears highly limited. There is some evidence that denominators matter when they (arguably) should not, and participants show confusion between proportions and absolute amounts. The second experiment is highly cognitively demanding and participants have no strong incentive to “get this right.” The first experiment has arguable confounds: e.g., one might question the scientific credibility of the treatment that (claims to) save only a small number of lives out of a very large population. The evidence does not seem to offer much strength over and above the Fetherstonhaugh paper. I also found much of the statistical reporting to be incomplete or unclear, especially for study two. In general, this is, at its best, evidence of quantitative confusion which may go in either direction in any given context.

It is also detached from the charity realm, considering the domain of government expenditure and benefits that will accrue to the participant him or herself. For this reason, I listed it is tangential evidence and not charity specific evidence.

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**Jenni and Loewenstein (1997)** Provides support for the “reference group effect” (proportional dominance) as an explanation for the identifiable victims bias. (notes [HERE](https://docs.google.com/document/d/1YHaF4phpqthCEwwNdgd_QBZp5np0pHwHEJm3U2G1cxA/edit#))

*Overall evaluation of evidence*

*Evidence gap and suggestions for future work and approaches*

# Solutions

1. Framing
   1. Frame down denominator (suggestive evidence from …)
   2. Highlight numerator (impact) (evidence?)

*Evidenced solutions, Possible solutions*

1. They do reverse order of presentations for half the participants. They report a lack of significant order effects, but fail to discuss the power of such tests or examine first-presented choices in isolation. [↑](#footnote-ref-0)