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Authors

Egidi, Giovanna
Hasson, Uri

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Logical Effects on Anchoring

Giovanna Egidi (gegidi@ic.sunysb.edu)

Department of Psychology, SUNY Stony Brook
Stony Brook, NY 11794 USA

Uri Hasson (uhasson@uchicago.edu)

Department of Psychology, The University of Chicago
Chicago, IL 60615 USA

Research has repeatedly shown that people have a tendency to “anchor” onto suggested values when performing numerical estimations (Chapman & Johnson, 1999). But what is the source of this anchoring effect? Is it the number per se, or is it the entire sentence? Our hypothesis is that the anchoring effect is not determined solely by the numerical value but is at least partially determined by whether people conceive of the information in the statement as true or false. Such conceptions result in different degrees of anchoring.

To investigate this issue, we conducted two experiments in which we manipulated the way information was presented (Table 1):

Table 1: Stimuli in Experiments 1 and 2

Condition	Sentence
Unmarked	At the time of his death, Gandhi was 105 years old.
True	It is true that at the time of his death, Gandhi was 105 years old.
False	It is false that at the time of his death, Gandhi was 105 years old.
Not True	It is not true that at the time of his death, Gandhi was 105 years old.

Participants read one of these statements, indicated whether they agreed or disagreed with it and then wrote their own estimation.

We also manipulated the plausibility of the anchor. We wanted participants to disagree with the anchors, as our goal was to see what values participants would generate once they reject an anchor. We therefore chose 105 that should be rejected often but is a conceivable value for a lifespan and 160 that is not conceivable.

We predicted that in the Unmarked condition (see Table 1), it would be easier to reject 160 than 105. We therefore expected lower ratings following rejection of the 160 value. Framings of truth and falsity should have people consider the truth of the propositions, and therefore in these conditions we expected higher ratings in the 160 than in the 105 condition. This finding would be consistent with previous literature that has sometimes shown higher anchoring values for larger, even extreme, anchors (Mussweiler & Strack, 2000).

Figure 1 shows the target values provided by participants (N=194) in the six conditions. As can be seen, in the

Unmarked framing, ratings were higher for the 105 value. In the True and False conditions, ratings were higher for the 160 value, which resulted in a reliable interaction in the overall experiment; $F(2,88) = 2.99, p=.05$. The same pattern of results held when the analysis was conducted excluding 12 participants who had endorsed values of 105.

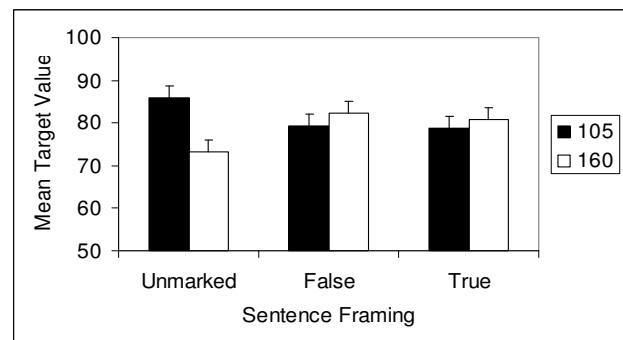


Figure 1: Ratings in Experiment 1

We also found that some participants disagreed with the False version of the statement, yet gave a value different from the anchor. This suggests that the proposition they were disagreeing with corresponded to the *truth* of the statement. Furthermore, this error was made more often for the False-105 condition than for False-160 condition. We therefore ran another experiment, where participants evaluated the Not-True conditions. Ratings were reliably higher in the 105 condition than in the 160 condition ($M = 86$ vs. 79); $t(77) = 1.6, p<.05$. Some participants again made the mistake of disagreeing with the Not-True statement and writing down the anchor. This occurred for 18 of the 53 participants in the 105 condition but for only 5 of the 49 in the 160 condition (chi-square = $9.3, p<.01$).

We discuss these results in light of current theories of anchoring that are based on either low-level numeric priming or selective access of information.

References

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