Journal of Experimental Social Psychology 45 (2009) 983–986

Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

FlashReports

Sad, thus true: Negativity bias in judgments of truth

Benjamin E. Hilbig

University of Mannheim, Center for Doctoral Studies in Social and Behavioral Sciences, and Psychology III, Schloss Ehrenhof, 68131 Mannheim, BW, Germany

ARTICLE INFO

Article history:
Received 24 October 2008
Revised 30 March 2009
Available online 16 April 2009

Keywords:
Negativity bias
Positive–negative asymmetry
Truth judgment
Validity
Elaboration
Persuasion
Framing

ABSTRACT

An effect observable across many different domains is that negative instances tend to be more influential than comparably positive ones. This phenomenon has been termed the negativity bias. In the current work, it was investigated whether this effect pertains to judgments of truth. That is, it was hypothesized that information valence and perceived validity should be associated such that more negative information is deemed more true. This claim was derived from the findings that negative instances tend to demand more attentional resources and that more elaborate processing can render messages more persuasive. In three experiments, manipulating information valence through framing – and assessing judgments of truth – the hypothesized negativity bias was corroborated. Potential explanations and implications for further research are discussed.

Across various disciplines within scientific psychology and beyond, one commonly accepted and well documented phenomenon is the so-called 'negativity bias'. This term refers to the general tendency for negative information, events, or stimuli to have a greater impact on human cognition, affect, and behavior than comparably positive instances. In broad reviews of the extant literature Baumeister, Bratslavsky, Finkenauer, and Vohs (2001) as well as Rozin and Royzman (2001) come to the conclusion that 'bad is stronger than good' across a wide range of domains such as impression formation, perception, memory, decision making, and many others. However, I am aware of no study investigating whether negative information is – per se – deemed more valid or true. It is therefore the aim of the current article to explore whether the perceived veracity of information is impacted by its valence. Stated bluntly, it was tested whether instances may not (only) be 'sad, but true' – as the every-day aphorism implies – but possibly 'sad, *thus* true'.

Why should we be more inclined to accept negative information as more accurate? Even though it is beyond the scope of this report to test specific mechanisms responsible for the hypothesized valence-validity association, it seems appropriate to point out from which theoretical positions it was derived. First, it has been argued that negative instances are often more informative (Peeters & Czapinski, 1990) – parallel to the higher informativeness of disconfirming evidence (Leyens & Yzerbyt, 1992). So, there could be a simple direct association between valence and (perceived) veracity.

Secondly, there is evidence for increased elaboration of negative instances which has been termed 'informational negativity effect' (e.g. Lewicka, 1997; see also Lewicka, Czapinski, & Peeters, 1992). Specifically, different lines of research indicate that negative stimuli are detected more reliably (Dijksterhuis & Aarts, 2003), lead to more elaborate attributions (Bohner, Bless, Schwarz, & Strack, 1988), and generally demand more attention, thus entailing more elaborate processing (Baumeister et al., 2001). Rozin and Royzman (2001) refer to these findings as negative differentiation, stating that 'our cognition is perhaps more complex, elaborated, and fine-tuned' (p. 299), comparing negative instances to positive ones.

Finally, there is a noteworthy body of literature which confirms that more elaboration, deeper processing, and high processing motivation can increase the persuasiveness of messages (e.g. Petty & Briñol, 2008; Shiv, Britton, Payne, Mick, & Monroe, 2004). Similarly, though investigating the realm of wishful thinking rather than negativity bias, Bar-Hillel, Budescu, and Amar (2008) showed that the causal link 'I focus on, therefore I believe in' (p. 283) is well-supported. Also, elaboration can increase the perceived truth of past-events, even and especially when these never happened, which has been explained as an effect of constructive processing (Kealy, Kuiper, & Klein, 2006).

So, since negative information is often especially diagnostic, we may have learned to pay increased attention to it. Consequently, it is more likely to demand thorough processing than positive information. Finally, given that more elaboration can yield more persuasion, information valence will impact truth judgments. However, before testing the proposed process it is clearly necessary to show that the to-be-explained effect actually exists. That

E-mail address: hilbig@psychologie.uni-mannheim.de

0022-1031/$ - see front matter © 2009 Elsevier Inc. All rights reserved.
doi:10.1016/j.jesp.2009.04.012

is, I first aimed to demonstrate that more negative instances are indeed deemed more veridical.

This conjecture was tested in three experiments which investigated participants' judgments of truth concerning different statements comprising statistical information, taken from the German Police Crime Statistics 2007 (Federal Criminal Police Office, n.d.) and the Statistical Yearbook 2008 (Federal Statistical Office, n.d.). Experiments 1 and 2 were conducted as online-surveys adhering closely to the standards for internet experiments suggested by Reips (2002). Experiment 3 was administered via ordinary questionnaires.

Importantly, to test the hypothesized valence-validity association, information shown to participants would need to differ in valence but not in objective accuracy. In effect, the actual accuracy of the information provided must be held constant across experimental conditions. A typical method for equating information while manipulating its valence is framing (Kahneman & Tversky, 1984). That is, formally equivalent messages are framed as gains vs. losses or, more generally, positively vs. negatively. This principle was used in the experiments reported herein.

Experiment 1

The first experiment was conducted as an online-survey. After providing consent and demographic information, participants were shown statistical information from the crime domain and instructed to provide a truth rating. As information, the success rate[1] of crimes from the category of rape and aggravated sexual coercion (denoted 'rape' in what follows) was presented. The actual success rate (85%) was used. Half of the participants were told that 85% of attempted instances of rape were successful (negative frame), while the other half were told that 15% were unsuccessful (positive frame). All participants were then asked to judge the truth of the stated information on a 4-point scale. One hundred and ten participants (84 female, aged $M = 25$, $SD = 7$) were recruited via a mailing list and randomly assigned to one of these conditions.

Additionally, since effects of dispositional optimism or pessimism may play a role, individual scores on these factors were assessed by means of a German version (Glaesmer, Hoyer, Klotsche, & Herzberg, 2008) of the revised Life-Orientation-Test (Scheier, Carver, & Bridges, 1994), filled out by participants before the judgment task.

Results and discussion

Participants rated the information to be true with $M = 2.9$ ($SE = .09$) in the negative vs. $M = 2.5$ ($SE = .11$) in the positive framing condition, $t(104.5) = 2.9$, $p = .004$, Cohen's $d = .60$, resembling a medium to large effect size (Cohen, 1988). The results are displayed in Fig. 1. Controlling for optimism and pessimism in a one-way ANCOVA revealed that both covariates had significant effects, but the effect of framing condition remained significant and actually increased very slightly (from $\eta_p^2 = .075$ to $\eta_p^2 = .076$). In sum, the hypothesized negativity bias was corroborated using formally equivalent information and manipulating its frame. However, the success rate of a crime is a concept not easily understood (higher success rates being more negative) and so the results may be distorted by participants misunderstanding the task. Therefore, the experiment was repeated using the clearance rate[2] as information, instead.

[1] 'Success rate' denotes the proportion of successful attempts to a crime. So, in the current case, this ratio refers to instances in which the victim was actually raped.

[2] 'Clearance rate' denotes the proportion of registered cases of a crime which were cleared by the police or associated forces. That is, a high clearance rate indicates that culprits were caught in most instances.

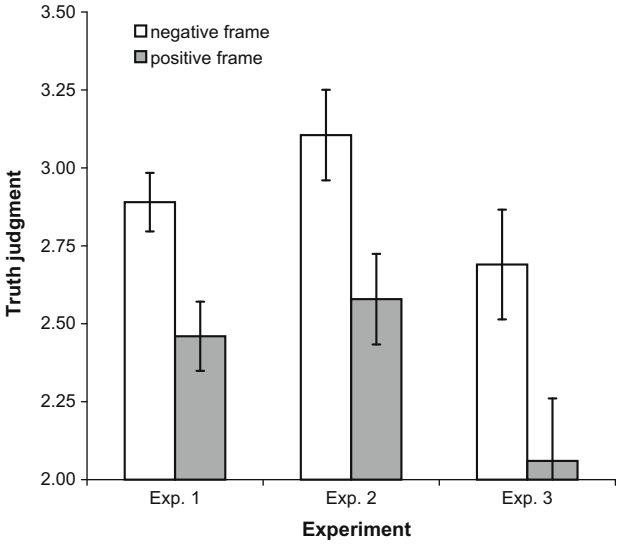

Fig. 1. Mean truth ratings (original scale ranging from 1 to 4) for the negative vs. positive framing conditions in each of the experiments. Error bars represent one standard error of the mean.

Experiment 2

Following the logic of Experiment 1, the information frame was again manipulated. Thirty eight participants (30 female, aged $M = 17.3$, $SD = .50$, recruited from a high school course of introductory psychology) were randomly assigned to two groups. These were shown the actual clearance rate of rape (70%), either framed positively (70% of cases cleared) or negatively (30% of cases not cleared) and asked to judge, again on a 4-point scale, the truth of the provided statement. Also, like in Experiment 1, individual differences in optimism and pessimism were assessed (before the judgment task).

Results and discussion

As can again be seen in Fig. 1, participants' truth ratings were higher in the negative ($M = 3.1$, $SE = .15$) as compared to the positive framing condition ($M = 2.6$, $SE = .15$), which was significant with $t(36) = 2.6$, $p = .015$, $d = .80$, and entailed a large effect size. Neither optimism nor pessimism explained additional variance. So, the negativity bias in judgments of truth, as found in Experiment 1, could be replicated. However, there are two limitations pertaining to Experiments 1 and 2 which deserve additional attention: First, online studies principally allow participants to cheat, that is, to look up the truth of information presented. Although there is no immediate reason why this should have been more likely in the negative framing condition (thus leading to selectively higher truth ratings), a replication using simple questionnaires seemed desirable. Secondly, the negativity bias found may be specific to the crime domain. Thus, I aimed to replicate the reported effects in a different domain.

Experiment 3

The principal logic of this experiment was again to manipulate the frame of the information presented (between participants) while holding the actual validity constant. In contrast to the previous experiments, the information was not from the crime domain but from demographics. Specifically, participants were shown the probability of a marriage to be divorced within the first 10 years which is, in Germany, about 20% (Federal Statistical Office, n.d.).