Trust and mistrust when students read multiple information sources about climate change

Ivar Bråten [a,*], Helge I. Strømsø [a], Ladislao Salmerón [b]

[a] *Institute for Educational Research, University of Oslo, P.O. Box 1092, Blindern, N-0317 Oslo, Norway*
[b] *Department of Developmental and Educational Psychology, University of Valencia, Avda Blasco Ibáñez 21, 46010 Valencia, Spain*

Abstract

The present study investigated how undergraduates judged the trustworthiness of different information sources that they read about climate change. Results showed that participants ($N = 128$) judged information from textbook and official documents to be more trustworthy than information from newspapers and a commercial agent. Moreover, participants put most emphasis on content and least emphasis on date of publication when judging document trustworthiness. When judging the trustworthiness of the textbook, they emphasized criteria differently than when evaluating other types of documents. Results also indicated that readers low in topic knowledge were more likely to trust less trustworthy sources and failed to differentiate between relevant and irrelevant criteria when judging the trustworthiness of sources.
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1. Introduction

An essential aspect of solving information-based problems (Brand-Gruwel, Wopereis, & Vermetten, 2005) is to judge the trustworthiness of sources when reading multiple documents on a particular issue. Surely this pertains not only to the context of formal education. At least in democratic societies, citizens daily encounter conflicting information about controversial issues of personal as well as social importance, with this information located in diverse sources such as books, magazines, newspapers, and the World Wide Web (Rouet, 2006). In order to take a stand on such issues, as well as to participate in democratic discourse regarding their solution, citizens need to evaluate the degree to which the different sources they encounter can be trusted. In this article, this general state of affairs is illustrated by discussing the timely issue of climate change.

Imagine that a person has just read a newspaper article written by a journalist describing the disastrous consequences of global warming due to manmade discharges of carbon dioxide into the atmosphere. However, later the same day this person comes across an article in a popular research magazine where a scientist argues that global warming is mainly related to natural variations and, therefore, to a little extent reversible through human efforts. Of course, the person may very well leave this field of opposing views without bothering too much about trying to decide between them. However, the confusion created by the two apparently irreconcilable views may also initiate a cognitive process where the person tries to evaluate which is the more trustworthy of the two sources. In this process, the person may more or less consciously and systematically compare the authors of the two texts and come to the conclusion that the journalist is probably the shiftier person. Moreover, based on his or her general impression of newspapers, the person may feel that the newspaper article is less serious than the article in the research magazine. At the same time, however, the person may find the content of the newspaper article more comprehensible and its argumentation more transparent, as well as more in line with his or her personal opinion about the issue, based on prior knowledge, political sympathies, and general environment-friendly attitudes. In the end, the person may therefore lean towards the

* Corresponding author. Tel.: +47 22 85 52 82; fax: +47 22 85 42 50.
  E-mail address: ivar.braten@ped.uio.no (I. Bråten).

view that global warming is caused and, accordingly, can be reversed by mankind's activities, even though he may also want to seek more information about the issue, for example, through discussions with colleagues and friends or by accessing the Internet.

What the imaginary person concludes from this evaluation process may arguably have serious consequences. That is, whom and what people choose to trust when it comes to an issue of such vital importance as global warming may have far-reaching implications not only for individuals but also for society at large. In fact, the main reason why the present study focuses on the issue of climate change is that this is an issue where the trustworthiness of information has been in the forefront of public debate, not least because of its potential implications for how this issue is understood and, eventually, solved. Other research (Britt & Aglinskas, 2002) has shown that source information is often not attended to spontaneously by students. It was assumed, however, that the issue of climate change, being controversial, complex, and frequently discussed in different kinds of mass media, could make participants pay more attention to such information. Therefore, in the present study, students read multiple authentic, conflicting texts about climate change and were then asked to rate the trustworthiness of each text, as well as the emphasis they put on different criteria when judging text trustworthiness. The main aim was to gain understanding of how judgments involving trust and mistrust come into play when readers are dealing with multiple information sources concerning the controversial but crucial issue of climate change.

1.1. Prior research

Systematic research on the role of source characteristics when people judge the trustworthiness of information was initiated by social psychologists interested in studying persuasion. For example, within the framework of the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986), it has been demonstrated that information about the source (e.g., expertise) may have an impact on people's evaluative judgments of (or attitudes towards) various issues, either because such information is effortfully processed and elaborated upon by the individual, or because it is just cueing a quick judgment without much scrutiny or elaboration (for review, see Petty & Wegener, 1999). According to the ELM, the extent to which people scrutinize and elaborate upon relevant information (including source information) in a persuasion context, is determined by their motivation as well as their ability (e.g., prior knowledge). It also follows from the model that source characteristics which are elaboratively processed will have a stronger (i.e., more persistent and resistant) impact on people's judgments of an issue than source characteristics which are used as simple cues. Moreover, whether people carefully scrutinize or perform a cursory analysis of the same source characteristics may sometimes have very different consequences for their judgments, with a source that seemed to represent objective expertise on a first glance, for example, turning out to be a highly biased agent upon more careful analysis (cf. Petty & Wegener, 1999).

Another social psychology model that has framed much research on the role of source information is the Heuristic-Systematic Model (HSM; Chen & Chaiken, 1999). The HSM particularly highlights how judgments on various issues are formed on the basis of heuristic processing of source characteristics, that is, low-effort activation and application of rules or heuristics that are stored in memory (e.g., "expert statements can be trusted"). According to this model such rules or heuristics may be cued by easily processed source characteristics, and their use may lead to judgments that are consistent with or contradictory to judgments formed on the basis of more systematic (i.e., analytic or comprehensive) processing of the actual content of the message.

Among researchers interested in reading, it has been recognized for quite some time that experts in a domain regularly pay attention to information about the sources they are reading, and that they use relevant criteria to judge the trustworthiness of those sources (Bazerman, 1985; Lundeberg, 1987; Wineburg, 1991; Wyatt et al., 1993). For example, Bazerman (1985), who studied physicists reading articles in their area of expertise, observed that readers judged the trustworthiness of texts by referring to the competence of the author. Especially, advanced training in domains such as law and history seems to alert readers to the crucial role played by source information. Thus, Lundeberg (1987) had law professors and attorneys read legal cases, noting that these experts paid close attention to source information such as the name of the judge, the type of court, and the date. In turn, they used this information to evaluate the texts, as when one of the professors after having sought out the name of the judge who wrote the opinion, remarked that this judge was "one of the giants" (p. 413). This admiration makes it easily understandable that the reader would also credit the content of the text. In a much cited study, Wineburg (1991) reported that expert historians who worked through multiple documents about a particular historical event typically sought out and considered the source of each document to determine its evidentiary value. Thus, the sourcing strategy used by the experts involved that they regarded the source of the document as key information, vital in the process of evaluating the trustworthiness of the document. As one historian explained: "Knowledge of the source helps you understand, helps you predict what you might find…how reliable it might be, or unreliable" (Wineburg, 1991, p. 79; see also, Wineburg, 1998).

In contrast, novice readers of the same documents in Lundeberg's (1987) and Wineburg's (1991) studies often ignored information about sources, and to the extent that such information was attended to at all, it was treated as any other kind of information. In addition, novices were found to regard the textbook as more trustworthy than texts written by persons directly involved in the events (primary sources) and texts written by persons commenting on the events (secondary sources) (Wineburg, 1991; see also, Perfetti, Britt, Rouet, Georgi, & Mason, 1994).

Considering that the novice readers in Lundeberg's (1987) and Wineburg's (1991) studies were undergraduates and high-school seniors, respectively, it is not surprising that younger students, in elementary and secondary school, generally fail to