Blinded by the headline? An experiment on readers' processing of two-sided titles and arguments in online science articles

Stephan Winter[1], Carolin Straßmann[1], Eva Wilden[2], & Thomas Ernst[1]

[1]University of Duisburg-Essen, Germany, [2]University of Vechta, Germany

The Internet has become an important source of science information for laypersons – but not all documents adequately represent the current state of research and not all readers have the skills to understand complex scientific information (Sinatra, Kienhues, & Hofer, 2014). This study investigated under which conditions readers a) consider conflicting evidence in their attitudes on scientific topics and b) rely on less effortful heuristics.

Prior research has shown that only readers with advanced epistemological beliefs (people who believe that knowledge can change) process two-sided messages including pros and cons of a scientific debate in an adequate way, while people with naive beliefs tend to ignore counterarguments (Winter, Krämer, Rösner, & Neubaum, 2015). Besides the valence of readers' attitudes, message sidedness might also affect attitude certainty: Since two-sided messages appear more balanced they may arouse the impression of providing a 'complete' overview and thus strengthen attitude certainty. Focusing on a mode of superficial processing, it can further be asked whether the text itself has to be two-sided for this effect or whether announcing a two-sided message in the headline (two-sided framing; Rucker, Petty, & Brinol, 2008) is already sufficient.

In an experiment (N= 613) with a 3x2-between-subjects design we systematically varied the argumentation structure of a science blog article on nanotechnology (pro vs. con vs. two-sided) and message framing in the headline (either one-sided or two-sided). Results primarily showed main effects of the structure of argumentation on readers' attitudes: Two-sided messages comprising conflicting information were particularly influential for readers with advanced epistemological beliefs. Framing effects on attitude certainty were only found for readers with naive epistemological beliefs suggesting that most readers are less susceptible to mere illusions of complexity. Theoretical implications on the role of epistemological beliefs and practical implications for science communication in the digital age will be discussed.

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