

Does News Value Help Learners Sharing Relevant Information?

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Abstract: Opinion formation requires a specific kind of information processing, consisting of perceiving, elaborating, and sharing of information. To support this information processing, we adopt the news value theory. Value of news is expressed by particular characteristics, ascribed by journalists. A pilot study showed that laypeople can accurately identify the so called news factors. A research program using systematically prepared material will investigate how news factors influence information processing and whether they enhance learning.

Introduction

Information processing in the context of opinion formation contains at least three steps: First, people perceive information from a huge amount of incoming news; second, they elaborate information which they regard as relevant; third, people compare and spread news by talking about them. We believe that these processes are also part of the information processing collaborative learners do to build knowledge. First, collaborative learners perceive, for example, particular knowledge or opinions of others. Then, they elaborate the perceived pieces of information. Finally, they share some of it with others to create common knowledge artifacts. Therefore, our research about information processing for opinion formation might contribute to collaborative learning.

Theoretical Background and Methodology

We propose to draw on the news value theory (Galtung & Ruge, 1965) that deals with particular selection criteria that make events become news, and that is related to Lippmann's (1922) early work on the value of news. From all the events taking place journalists can only perceive a few, and from these few they need to select an even smaller number of events for publishing (or *sharing* them with an audience). By means of so called news factors journalists ascribe certain characteristics to events and thereby give them a value (Galtung & Ruge, 1965). The higher the value, the more it becomes probable that an event will get published as news. Eilders (1997) showed that recipients process news in a very similar way as journalists do. Thus, from all published pieces of information recipients also *perceive* only a few. Furthermore, Eilders found that news factors also affect the *elaboration* of information as measured by memory performance. Ruhrmann and Göbbel (2007) proposed a set of news factors that we adapt for our research: "Relevance", "Proximity", "Prominence", "Personalization", "Aggression", "Negative consequences", "Controversy", "Unexpectedness", "Continuity", and "High status". In the following, news factors are discussed with respect to some underlying psychological concepts to better understand their possible effects on information processing. For example, "Relevance" or "Proximity", are based on the feeling of potentially being involved. "Personalization" refers to processes of identification or role-taking (van Dijk, 1988). Sensational or negative news benefits from the evolutionary tendency to pay attention to unknown things, because they might be dangerous (Davis & McLeod, 2003). This is the case for "Aggression" or "Negative consequences". "Controversy" can stimulate creativity as it presents conflicting positions, and raises attention as it could indicate an important result for society (Eilders, 1997). Messages that are inconsistent with an existing schema surprise recipients and arouse their attention (Schützwohl, 1998); "Unexpectedness" refers to this phenomenon. In contrast, "Continuity", "Prominence", and "High status" refer to familiar stimuli and might therefore attract attention (cf. availability heuristic; Tversky & Kahneman, 1973). Research about information processing with emergent technologies might benefit from news value theory and can potentially adapt it. Microblogging systems, such as Twitter, are therefore appropriate for our research. With microblogging users can *share* information by simply forwarding it to others, so they create content without writing new messages, thereby increasing experimental systematicity and tractability. Although research of news value theory already addressed information processing, there is not yet research using carefully manipulated material with systematically varied news factors. Furthermore, using Twitter situates research questions in the context of Web 2.0 and collaborative learning.

Our research program first explores identification abilities of news factors, and then investigates sharing and elaboration of information in combination with news factors. Experimental studies will show whether news factors improve the information processing and how a group awareness tool could additionally enhance opinion formation. At first, we investigated if news factors are actually generally valid criteria (Eilders, 1997), that means whether laypeople rate information as journalists do and if not, what the differences are. In this first study 43 participants took part (13 males and 30 females, $M = 26.09$ years, $SD = 5.55$). On the basis of communication scientists' ratings, we created a set of 63 short messages about a wide range of topics, and

prepared the messages so that each of them contained particular news factors. These underlying news factors were uncorrelated and balanced in their occurrence. For the study the participants received a short description of news factors, and were subsequently asked to rate all messages with regard to their news values.

Results and Outlook

To measure the agreement between the scientists' and the participants' ratings we refer to the signal detection theory and used the sensitivity index d' . Signal detection theory does not only regard the hits (participants ascribed a news factor that we also ascribed) but also considers the false alarms (participants ascribed a news factor that we did not ascribe). The results indicate that laypeople identify news factors quite well (see Table 1). Sensitivity is high especially for news factors that refer to a cue word, for example a famous name for "Prominence". This corresponds to former findings that recipients do not perceive information in its presented complexity but reduce them to few aspects (cf. Ruhrmann & Göbbel, 2007). Response bias is also indicated by the hit rates and the false alarm rates, and it captures the general tendency to respond yes or no. Most of the news factors were ascribed conservatively, indicating that participants clearly recognized if those news factors would have been present. These findings are a first important step towards an investigation using carefully manipulated material with systematically varied news factors. However, news factors do not only have a diagnostic value, but can also be used to improve information processing. In this regard, learning environments could benefit from the news value theory as information can be presented and varied by news factors. Therefore, news factors can be seen as a way to filter information and influence users' behavior. We plan to develop a group awareness tool that provides visualized feedback of the users' selections and sharing decisions. Research of group awareness and social navigation has shown that visualized information on other users' behavior can influence navigational behavior of users (Buder, Bodemer, Dehler, & Engelmann, 2009). Hence, combining the potential influence of news factors on information processing with principles of group awareness and social navigation might enhance learning and opinion formation.

Table 1: Sensitivity of identification of news factors by the participants.

News factor	Sensitivity d'	Response bias c
Prominence	2.59	0.46
Aggression	2.51	0.46
Controversy	1.71	-0.07
Personalization	1.70	0.37
Negative consequences	1.65	0.44
High Status	1.65	0.01
Relevance	1.22	-0.19
Proximity	1.08	0.48
Continuity	1.07	-0.25
Unexpectedness	0.91	-0.14

$d > 1$ good detection; $d > 2$ very good detection; $c < 0$ liberal response tendency; $c > 0$ conservative response tendency

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