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Relational affordances of information processing on Facebook

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ABSTRACT

Facebook is increasingly considered as a trusted medium for obtaining news, but the abundance of information on the platform often leads users to experience information overload. Consequently, users need to develop strategies to process information. A survey conducted through a Facebook application reveals that the tie strength of Facebook friends influences how users perceive information on Facebook. Specifically, they appear to rely on heuristic cues (e.g., Facebook "likes" and comments) to process information from weak ties, but these cues are not used when processing information from strong ties. These so-called *relational affordances* have significant implications for platform design and marketing.

1. Introduction

Recent years have seen the emergence of a new form of digital communication technology, commonly referred to as *social network sites* (SNSs). These have evolved into two main types: the ones which are *person based*, i.e., centered around the individual user's personal profile and network (e.g., Facebook and LinkedIn), and *content based*, where the content is of primary importance (e.g., Pinterest, Instagram; [92]. Although person-based SNSs such as Facebook have been originally viewed only as tools to support interpersonal connections [44], presently, the platforms are used for a variety of purposes. Recently, they have become popular as sources of news: 30% of US adults use Facebook as a source of news and 78% report being exposed to news when using the platform for other purposes [76]. The reason why Facebook has become popular as a news source is that friends act as information gatekeepers, vetting the significance and relevance of content [83]. In the same way as users rely to their friends for product recommendations [33], they also trust them to provide credible news when they are browsing on Facebook, especially in an age when the status of traditional news sources is declining [3].

The popularity of Facebook as a news source can be in part attributed to the particular form of communication, which the platform offers; it provides a form of many-to-many communication, which enables people to broadcast information simultaneously to their entire network [84]. In the literature, *broadcasting* of this kind is referred to as communal continuous conversations, because they can be seen by all participants in the network, and are available for asynchronous communication, even though the players involved may change [61]. Broadcasting allows users to communicate more quickly and effectively: they can engage with twice as many people than they can through directed or reciprocal communication [29], and can make contact particularly with those outside their usual circle of friends. Broadcasting also creates trustworthy environments for information exchange [67], provides a starting point for conversations, and allows users to stay in regular contact with a large circle of friends [13].

One result of broadcasting, however, is that users have to process large amounts of information, as the networks of users grow and users become more engaged on SNSs [31]. Most of today's consumers of news feel overloaded by the amount of news they encounter [42]. Moreover, broadcasting on Facebook can be associated with low-quality interactions, self-promotion, and mendacious behaviors [84]. Thus, the increased quantity and

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low quality of information can lead users to experience information overload on Facebook, making them feel stressed and anxious [90], which may result in them becoming less active on the platform or even quitting it altogether [91].

SNSs platform designers therefore try to provide users with features that allow them to process information more effectively. We argue that several features of Facebook can help users identify relevant information on the platform: "likes," comments, post length, and post type. However, how users use these features to process information on Facebook has not yet been sufficiently explored – a research gap we want to fill in this study. In this paper, we consider how the technological features provided by the platform seem to imply a certain homogeneity of use, yet because these features are perceived differently by different users, they are in fact used in a variety of ways [47]. Thus, we would like to uncover the ways in which these features are used.

The main reason behind the popularity of Facebook (or any other person-related SNS) as a news source is that information is tied to the person who is sharing it, who acts as trustworthy source of this information [14]. Thus, tie strength with the person sharing the information might influence how a user perceives that information. Although many previous studies have found that SNSs are most valuable for communicating with weak ties [20,72], more recent studies state that users can communicate with similar degrees of efficiency with both their weak and strong ties [2]. As the Facebook platform provides no way of distinguishing between ties of different strengths, we argue that users use the various features differently when communicating with strong vis-a-vis weak ties. As such, they will interact with different frequency, and with different types of information, and will also perceive the platform features differently, depending on the nature of the relationship that they have with the person sharing the information – and we refer to this as *relational affordances*. Platform features, such as "likes" and comments, can be especially helpful when evaluating information from weak ties as with ties of this type, there is insufficient basis for a trusting relationship, unlike with strong ties. The research question we answer in this paper is: *How does the interplay between platform features and tie strength influence the likeability and usefulness of information on Facebook?*

In order to answer this question, we used a specially designed Facebook application to examine a sample of 810 pieces of content from 135 Facebook users. Our findings suggest that, as expected, Facebook users use platform features to process information from their weak ties, where comments and "likes" play different roles in terms of their impact on perceived usefulness and likeability of information. At the same time, no features are needed to process information from their strong ties. These findings suggest that practitioners need to consider this heterogeneity of platform uses, and that researchers should also consider the concept of relational affordances when theorizing about SNSs.

2. Theoretical background

Person-based SNSs such as Facebook are commonly defined as web-based services, which allow individuals to construct a public profile, list their connections to other users, and view and traverse this list of connections and those made by others in the system [11]. This definition focuses solely on the networking functionality, which constitutes the backbone of any SNS. However, the creation and processing of digital content have now become a more important part of any SNS [47]. Merely maintaining a profile on SNSs is not enough: only by actively sharing information can a user exploit the affordances of this technology effectively in order to stay in regular contact with a broad network of friends [44].

To benefit from the information shared on the platform, users have to process that information effectively. However, the frequency and ease with which information can be shared on the platform results in the sharing of trivial or over-detailed information, often of little interest to others [84]. Moreover, much of the information that users share on SNSs is ambiguous unless one understands its context [51]. With the increasing quantity and varying quality of information, users have to develop strategies on how to process this information in order to avoid information overload. To reduce the cognitive burden, users are known to rely on heuristic cues and bypass certain content [70,16]. Heuristic cues provide shortcuts and allow users to obtain an impression of the information more quickly and effectively [24]. Platform designers therefore build in functionality that can act as heuristic cues, such as "likes" and comments from other users. Our aim is to uncover how users use these cues to evaluate information on Facebook.

To develop our conceptual model of information processing on Facebook, we draw mainly on two theories: strength of weak ties [38] and the theory of affordances [57]. The original concept of affordances is rooted in ecological psychology, which states that animals do not perceive what a particular object is, but rather what kinds of uses it "affords" [35]. As such, the same object can be perceived differently by a different set of users completely or in different contexts. Information systems researchers have widely adopted this concept to describe the relationship of users to technology, and, specifically, to explain why different users might use technologies in different ways, and not as originally intended by the designers [57].

Affordances refer neither solely to the material properties of a technology nor to the personal qualities of the people who use it, but to people's perceptions of the technological artifacts [81]. Technological artifacts stay the same, but because people's perceptions vary, the affordances of those artifacts can vary depending on the person or context. For example, comments on Facebook can be used to provide support or voice disagreement with the information shared, depending on the context of the communication and how the platform is being used. However, on Facebook as two users are using the same technological feature from two different perspectives, e.g., one providing and another viewing the comment, it is not just about an individual user's perception of the technology, but it is a combination of affordances of these users. We argue that this *relational affordance* depends on the *strength of relationship* between the users and their patterns of communication on the platform; it also determines how the information is perceived, together with other technological features, such as post type and the number of comments and "likes."

The role of relationships in information processing and knowledge acquisition has been widely discussed in the social sciences since Granovetter's hypothesis on the strength of weak ties. As with the earlier forms of information technology (IT)-enabled communication [20,72], SNSs have been regarded as being of greatest value with weak ties as in these environments a tie of this kind requires less effort to maintain [26] and can provide the user with an unprecedented amount of novel information [14]. However, the high frequency of communication with strong ties means that similar amounts of novel information can be transferred on SNSs as can be achieved with weak ties [2]. Overall, we can conclude that SNSs can be used effectively to support both weak and strong ties, and that, on SNSs weak ties play a slightly more important role than they do in face-to-face interactions [31].

One problem that arises, however, is that common SNS functionality does not allow any distinction to be made between the ties of different strengths: on Facebook, one is either a friend or not. In real life, however, relationships are much more nuanced and differentiated by their underlying qualities [10]. Relationship strength is a very dynamic concept, so it cannot be incorporated into the design of a static platform. Therefore, we propose that in

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