



# The emotional responses of browsing Facebook: Happiness, envy, and the role of tie strength



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## ABSTRACT

On Facebook, users are exposed to posts from both strong and weak ties. Even though several studies have examined the emotional consequences of using Facebook, less attention has been paid to the role of tie strength. This paper aims to explore the emotional outcomes of reading a post on Facebook and examine the role of tie strength in predicting happiness and envy. Two studies – one correlational, based on a sample of 207 American participants and the other experimental, based on a sample of 194 German participants – were conducted in 2014. In Study 2, envy was further distinguished into benign and malicious envy. Based on a multi-method approach, the results showed that positive emotions are more prevalent than negative emotions while browsing Facebook. Moreover, tie strength is positively associated with the feeling of happiness and benign envy, whereas malicious envy is independent of tie strength after reading a (positive) post on Facebook.

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## 1. Introduction and theoretical background

New communication technologies such as social media have made social news more pervasive (Bazarova, 2012). Facebook continuously keeps users updated with a variety of posts, and passive consumption of news updates is the main Facebook activity that people engage in (Wise, Alhabash, & Park, 2010). The majority of these updates are positive (Barash, Ducheneaur, Isaacs, & Bellotti, 2010; Utz, 2015). There is evidence for emotional contagion, showing happiness can spread through the news updates on online social networks (Coviello et al., 2014; Kramer, Guillory, & Hancock, 2014). However, recent studies also indicate that exposure to positive posts on Facebook may induce envy and lead to depression (Steers, Wickham, & Acitelli, 2014; Tandoc, Ferrucci, & Duffy, 2014) and reduced well-being over time (Kross et al., 2013; Verduyn et al., 2015). Given that Facebook has over 1.35 billion active users (Facebook, 2014) and there are on average 1500 potential stories for users to check per visit (Facebook, 2013), we are eager to understand how Facebook affects users' emotions and identify relevant factors that will determine emotional reactions. We argue that tie strength (relationship closeness) between the user and the poster is one important factor that should affect emotional outcomes.

### 1.1. Psychological effects of social media usage

The use of social media such as Facebook can cause both positive and negative feelings, and the results of prior studies on the psychological effects of social media usage are quite mixed. From a long-term perspective, the use of social media offers benefits such as the possibility of developing and maintaining social capital and social connectedness (Ellison, Steinfield, & Lampe, 2007; Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013; Sheldon, Abad, & Hinsch, 2011); Nevertheless, it may also lead to negative outcomes such as social overload (Maier, Laumer, Eckhardt, & Weitzel, 2012), an over-optimistic perception towards others' lives (Chou & Edge, 2012), and a decrease in life satisfaction (Kross et al., 2013). From a short-term perspective, the use of Facebook can evoke a feeling of flow, which is characterized by high positive valence and high arousal (Mauri, Cipresso, Balgera, Villamira, & Riva, 2011), and "joyful and fun" are the most common positive feelings reported by users while using Facebook (Krasnova, Wenninger, Widjaja, & Buxmann, 2013). Nonetheless, the consumption of social news on Facebook can also trigger invidious emotions such as jealousy and envy (Krasnova et al., 2013; Muise, Christofides, & Desmarais, 2009; Tandoc et al., 2014).

Faced with mixed results from prior research on the psychological effects of Facebook usage, it is important to differentiate between interactive and non-interactive social media behavior (Burke, Marlow, & Lento, 2010; große Deters & Mehl, 2013; Wise et al., 2010). Previous research has shown a consistent relation between using FB for interpersonal interaction and positive

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psychological outcomes (Burke et al., 2010; Hampton, Goulet, Marlow, & Rainie, 2012; Kim & Lee, 2011). However, it remains unclear as to what the psychological outcomes of non-interactive Facebook behavior are.

### 1.2. Psychological effects of browsing Facebook

In this paper, we focus only on the psychological effects of passive consumption. Previous research has revealed that the more time individuals spent browsing Facebook, the more negative their mood was immediately afterwards, and this was mediated by a feeling of not having done anything meaningful (Sagioglou & Greitemeyer, 2014). Users may experience the feelings of exhaustion and information overload when they are continuously browsing social news (Maier et al., 2012). Also, being exposed to social news on Facebook can evoke feelings of envy (Krasnova et al., 2013). However, when it comes to momentary experiences, users often feel pleasant and positively aroused when browsing Facebook (Mauri et al., 2011; Wise et al., 2010).

In an exploratory study (Krasnova et al., 2013), participants were asked to report their overall feelings after their most recent Facebook usage: 43.8% of the respondents reported at least one positive emotional outcome (such as feeling joyful/fun, satisfied, informed, excited, and relaxed), and 36.8% of the respondents reported at least one negative emotional outcome (such as feeling bored, angry, frustrated, guilty, tired, sad, lonely, and envious). However, it is unclear as to whether different feelings are triggered by different posts or whether a post can elicit several feelings. To the best of our knowledge, no research has been done that focuses on momentary feelings of browsing Facebook on an individual message level. To get a more comprehensive understanding on whether reading (positive) posts on Facebook leads to more positive emotions such as happiness or more negative emotions such as envy and boredom, we examine the feelings respondents report per post on their Facebook News Feeds. Before we turn to the underlying processes, we examine the prevalence of positive and negative emotions. Our first research question is therefore:

RQ1: What are the most prevalent momentary emotional outcomes of reading a post on Facebook?

### 1.3. Underlying mechanisms and the role of tie strength

More importantly, we are also interested in understanding the underlying mechanisms of the positive and negative emotions caused by passive consumption of social news, and aim to examine the role of relationship closeness in explaining those emotional outcomes (mainly happiness and envy). In a social network context, relationship closeness is often intertwined with the expression of “tie strength” (Gilbert, 2012): A *strong tie* is usually a close friend or family member, that with whom one shares an intimate relationship; and a *weak tie* is usually an acquaintance that one does not feel emotionally close to. As tie strength can also be measured by relationship closeness (Marsden & Campbell, 1984), in this paper, we treat “tie strength” and “relationship closeness” as interchangeable.

On Facebook, users can be exposed to posts from a variety of different people, including acquaintances, colleagues, best friends, and family members. Thus, the emotional outcomes of reading a post might not only depend on the content of the post, but may also be influenced by the relationship between the poster and reader. For example, if your best friend posts good or bad news on Facebook you might react differently to this compared to seeing an acquaintance that you haven't talked to in years posting the same news. No research has been done to examine the role of tie strength in interpreting the emotional outcomes after reading a post. Our second research question is therefore:

RQ2: What is the role of tie strength in explaining emotional outcomes such as happiness and envy?

Facebook users often post about their positive life events, successes, and entertaining status updates (Utz, 2011, 2015), and sometimes even present themselves in overly flattering ways (Barash et al., 2010; Mehdizadeh, 2010; Qiu, Lin, Leung, & Tov, 2012). Especially after reading these types of posts, feelings of happiness and envy are common emotional responses. Two mechanisms can explain this phenomenon: *emotional contagion* and *upward social comparison*. The feeling of happiness can be explained by the effects of emotional contagion (Cheshin, Rafaeli, & Bos, 2011; Hatfield, Cacioppo, & Rapson, 1993), i.e., the tendency for two individuals to emotionally converge; whereas the feeling of envy can be explained as a result of upward social comparison (Festinger, 1954).

In the following parts, we provide further information on these two mechanisms and explain why tie strength could matter for the emotions of happiness and envy respectively.

#### 1.3.1. Happiness: emotional contagion and the role of tie strength

Humans, as a species that are embedded in complex social networks, rely on the ability of sharing others' emotions (empathy) to engage in successful social interactions (Norscia & Palagi, 2011; Preston & de Waal, 2002). The ability to catch or experience other's feelings leads to the phenomenon of “emotional contagion”, which has been described as “the tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's, and, consequently, to converge emotionally” (Hatfield et al., 1993). Recent studies found that emotions such as happiness can be transferred from one person to another not only in face-to-face communication (Hancock, Gee, Ciaccio, & Lin, 2008; Hatfield et al., 1993; Neumann & Strack, 2000), but also in computer-mediated-communication (Cheshin et al., 2011; Coviello et al., 2014; Kramer, 2012). Therefore, observing others' positive news on Facebook may lead to happiness via emotional contagion.

Previous research (in offline settings) demonstrates that empathy is more pronounced when the relationship between two individuals within a dyad is closer (Beeney, Franklin, Levy, & Adams, 2011; Norscia & Palagi, 2011; Preston & de Waal, 2002). This is because kin relationships were extremely important to our ancestors' survival. And thus, the ability to empathize with close others would have facilitated social interactions (Norscia & Palagi, 2011). In addition, based on the Perception–Action Model for empathy, individuals with higher similarity and familiarity are more likely to catch emotions from each other (Preston & de Waal, 2002). Therefore, we would expect a positive moderating effect of tie strength on emotional contagion even in the computer-mediated communication context (e.g., when reading a Facebook post). More specifically, positive news may lead to happiness, and negative news may lead to sadness because of mood contagion, and the contagious effect is stronger when the news comes from a strong tie.

#### 1.3.2. Envy: social comparison and the role of tie strength

Envy, a pain caused by the good fortune of others, is another potential emotional outcome of encountering positive news on Facebook (Krasnova et al., 2013), and it might be a reason why browsing Facebook can lead to depression (Tandoc et al., 2014; Verduyn et al., 2015). Hence, we are also interested in understanding the processes underlying envy.

The concept of envy is often confused with jealousy, but clear differences exist: Jealousy arises when one has something but is afraid of losing it or has lost it to another person, while envy arises when another person has something that one does not have (Parrott & Smith, 1993). Recent literature on envy further

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