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Labovitz School of Business & Economics, University of Minnesota Duluth, 11 E. Superior Street, Suite 210, Duluth, MN 55802

Virtually Unhappy: How Probability Neglect in Social Comparison Biases Judgments of Satisfaction With Life

Mudra Mukesh, IE Busines School-IE University, Spain

Dilney Gonçalves, IE Busines School-IE University, Spain

Contrary to prior research and convention we demonstrate that a large friend network on social networking sites can be detrimental to individuals' life satisfaction. Having more friends leads to lower life satisfaction because people fail to integrate the probability of encountering ostentatious information on social networks when assessing life satisfaction.

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Mudra Mukesh, IE University, Spain

Dilney Goncalves, IE University, Spain

EXTENDED ABSTRACT

Our perception of how great (or not!) our lives are is often based on comparisons with others' lives (Corcoran, Crusius, and Mussweiler 2011; Festinger 1954). With the proliferation of social networking sites, our ability to get a glimpse of others' lives is magnified, with vast information available at our fingertips. However, the representativeness of this information is contentious since people have a tendency to selectively share information that is self-enhancing (Manago et al. 2008) while observers tend to underestimate the prevalence of misery among others (Jordan et al. 2011). When individuals read the information provided by friends online, they may compare facets of their life to the vivid content posted, to assess how well they are doing (Wood 1996; Wood, Taylor, and Lichtman 1985).

Whilst the dominant paradigm used in social comparison literature acknowledges that cues used to make social comparisons are subjective, it doesn't remedy the fact that people don't have perfect information about others (Prentice and Miller 1993). When judging life satisfaction, people need to make inferences about the others' life satisfaction based on sampled pieces of information, however these inferences are likely to be subject to cognitive biases. Probability neglect—ignoring actual probability of events (Rottenstreich and Hsee 2001; Sunstein 2002) is one such bias. On social networking sites, people with large number of friends would be likely to encounter a larger sample of ostentatious information each time they visit the site. Probability neglect would thus result in people not accounting for probability of observing ostentatious information and, consequently assuming that the *amount* of ostentatious information viewed on a social networking site reflects *how good* the lives of their connections are. Thus, people would rely on the *number* of informational cues ignoring the probability of observing such cues given the number of friends. So even if research (Ellison, Steinfield, and Lampe 2007; Helliwell and Putnam 2004) and popular wisdom might favor having more friends for a better life, we hypothesize that reading others' posts on social networking sites will have a negative (positive) impact on life satisfaction for people with a large (small) number of friends. Furthermore, probability neglect in this domain could be a result of accessibility bias since information that is implicit is often ignored or underweighted by people (Tversky and Koehler 1994). Thus, we hypothesize that making the relationship between number of friends and ostentatious posts accessible will reduce the bias.

We conducted two studies to test our hypotheses. In the first study (N = 158), the participants, recruited online, were randomly assigned to one of the two conditions: *Updates* or *Control*. In the *Updates* condition the participants viewed the first five updates on their homepage on Facebook. They then categorized the updates and indicated the number of updates in each category. Subsequently, participants completed the Satisfaction with Life Scale (SWLS; Diener et al. 1985) and the Social Comparison Orientation (CO) scale (Gibbons & Buunk 1999). The *Control* group only responded to the scales. Information relating to number of Facebook friends and demographics was collected.

We found a significant positive correlation between the number of ostentatious updates (operationalized as sum of purchase, travel related and professional achievements updates) and the number of Facebook friends. More importantly, we found a significant interaction of number of Facebook friends with *Updates* Condition ($t(152)$

$= -2.59$; $p < .05$) where CO was included as a control variable. A spotlight analysis compared the effect of reading updates (vs. control) on participants' life satisfaction at large and small (one SD above and below mean) number of Facebook friends. When the number of friends was small, viewing updates increased life satisfaction ($B = 0.554$; $t(152) = 2.089$; $p < .05$). However, when the number of friends was large, viewing updates decreased life satisfaction ($B = -0.554$; $t(152) = -2.103$; $p < .05$). Thus the results provided support for our hypothesis.

The second study was undertaken to examine if individuals can correct their judgments when provided information about the correlation between number of Facebook friends and the number of ostentatious updates. Moreover we wanted to test the hypothesis that the bias occurs because of low accessibility of the aforementioned correlation (Accessibility Hypothesis) at the time of assessing life satisfaction. To rule out alternate explanations we also test if the bias occurs because people have no knowledge about the phenomenon (Knowledge Hypothesis). Participants (N = 204) were recruited online and assigned to one of the three conditions: *debias-before-update*, *debias-after-updates* or *no-debias*. In the *debias-before-update* condition, the debiasing information that related the correlation between number of friends and number of ostentatious information was presented before the participants read updates. In the *debias-after-update* condition the debiasing information was presented after the participants read updates but just before the SWLS. No information regarding the correlation was presented in the *no-debias* condition. In the end, all participants completed the SWLS.

Planned contrasts showed that the difference between *no-debias* and the two *debias* conditions was not statistically significant ($F(1, 201) = 0.530$; $p = .468$). Thus, we found no support for the knowledge hypothesis. Supporting the accessibility hypothesis, the difference between *debias-before-updates* and *no-debias* conditions to the *debias-after-updates* condition was statistically significant ($F(1, 201) = 5.115$; $p = .025$).

The contribution of this article is twofold. Firstly, we show how ignoring the probability of available information used to make social comparisons can impact the outcome of those comparisons. Thus, this research represents one of the first studies to focus on the nature of informational cues people use to make social comparisons. By introducing the concept of probability neglect in the domain of social comparisons, this research paves the way for seamless integration of social comparison literature with decision-making literature. Secondly, we demonstrate, within the powerful context of Facebook, that a large friend network on social networking sites may be detrimental to the well-being of users. With more than 845 million users and 50% of them logging on to Facebook everyday (Facebook 2012), this research has resounding practical implications for the life satisfaction of millions.

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