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Body Image

High cognitive load during attention to images of models reduces young women's social comparisons: Further evidence against cognitive efficiency

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ABSTRACT

Mental processes that are conducted frequently can become highly cognitively efficient, meaning they can be carried out while we are doing other tasks (i.e., under high cognitive load). Given that young women report frequently comparing their appearance to models in media images, we examined whether such social comparisons are cognitively efficient. Our sample (N = 227) consisted of young women who felt above-average pressure from the media regarding appearance. Cognitive load was manipulated by memorizing either a simple (low load) or complex (high load) sequence of colours from attractive-model or control images. Participants who viewed models under low load compared themselves with the models, and significantly decreased in appearance satisfaction (but experienced no statistically significant change in negative affect). Participants under high load made fewer comparisons and their appearance satisfaction did not significantly decrease. These results suggest that social comparisons are not highly cognitively efficient and instead require cognitive effort.

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1. Introduction

When it comes to evaluating the self, it has been argued that most, perhaps even all, of what we really want to know is relative (Alicke, 2007; Gilbert, Giesler, & Morris, 1995; Mussweiler & Rüter, 2003). A full understanding of how much of some personal quality we have – say, intelligence, happiness, or beauty – or how successful we are – as might be measured by popularity, social status, or wealth – involves knowing what others have and comparing our lot to theirs. So, understandably, making a social comparison, where we compare some aspect of the self to another person (Festinger, 1954), is a common experience. Social comparisons are described as upward when made with those who have more of something than we do, downward when with those who have less, and lateral when with our approximate equals.

Studies using Ecological Momentary Assessment (EMA) show that most young women compare their personal qualities and lifestyles with other people on a daily basis (McKee et al., 2013). With regard specifically to their physical appearance, EMA studies find that, on average, young women make social comparisons several times a day (Fardouly, Pinkus, & Vartanian, 2017; Ridolfi, Myers, Crowther, & Ciesla, 2011), although there is considerable variation in this. Young women who spend a lot of time thinking about, or wanting to be, thin (those high on thin-ideal internalization) and women with higher body dissatisfaction – either as a persistent trait or a temporary state – make upward appearance comparisons more often than other women (Leahey, Crowther, & Ciesla, 2011; Rogers, Fuller-Tyszkiewicz, Lewis, Krug, & Richardson, 2017).

When we do something frequently, it is possible that the process of doing it becomes highly cognitively efficient (Bargh, 1994). A highly cognitively efficient mental process requires few cognitive resources, meaning it can be conducted relatively effortlessly and with little attention (Payne, 2012). Consider reading, for example. At first, reading takes time, mental effort, and conscious attention. But with practice a skilled reader need only briefly glance at words and their meaning becomes almost effortlessly apparent. Even so, these efficient mental processes can still influence our thoughts and feelings. For instance, a fully literate person effortlessly reading unpleasant things about herself might well experience changes in her self-evaluation and affect.

The present study is the latest in a series assessing the cognitive efficiency of young women's appearance comparisons with media images of physically attractive models. Do these social comparisons ever become effortless, as reading seems to? We examined

comparisons with model images for three reasons. Firstly, comparisons with media images of models are relatively common among young women (Fardouly et al., 2017; Ridolfi et al., 2011). Secondly, claims that comparisons with media images are highly cognitively efficient (see Want, Botres, Vahedi, & Middleton, 2015 for examples) outnumber studies that have directly tested this claim. Finally, and most importantly, comparing with such images is thought to be detrimental to young women's satisfaction with their own appearance (Want, 2009), although perhaps only, or especially so, for women already prone to dissatisfaction with their appearance (Ferguson, 2013). How cognitively efficient such comparisons are may have implications for interventions designed to reduce their frequency and effects. In short, the more cognitively efficient comparisons are, the harder they will be to mitigate, just as it is hard to avoid reading words once we have become skilled readers (Stroop, 1935).

If social comparisons are highly cognitively efficient then people ought to make them just as easily whether or not they are currently mentally preoccupied with other tasks (i.e., under high cognitive load). Thus, Payne (2012) argued that evidence of a highly cognitively efficient process comes when the effects of that process are seen just as strongly, if not more strongly, under high cognitive load as under full, undivided, attention. Gilbert et al. (1995) provided evidence of just this sort for young women's social comparisons with peers. In Gilbert et al.'s Study 1, participants' self-evaluations of ability were affected by seeing a peer perform better or worse than themselves despite participants being under high cognitive load from memorizing an eight-digit number. Gilbert et al. concluded that social comparisons can be conducted "without conscious effort" (p. 234), and in their Study 2 found evidence suggesting that these highly efficient social comparisons can have emotional consequences as well.

However, in other studies (Want & Saiphoo, 2017; Want et al., 2015), young women placed under similarly high cognitive load – again by memorizing a complex eight-digit number (e.g., 59368724) – while viewing media images of models showed no evidence of having compared with them. Specifically, while participants placed under low cognitive load (by remembering the simple eight-digit number, 11111111) experienced an increase in negative affect and a decrease in satisfaction with their own appearance after viewing models, participants under high cognitive load showed no such effects. These later studies suggest that social comparisons with attractive models in media images are inhibited by high cognitive load and are therefore not highly cognitively efficient. However, limitations of these studies may have led to an underestimation of the cognitive efficiency of young women's social comparisons with media images. We address these limitations here.

1.1. Limitations of previous studies

Participants in the high-load conditions of Want et al. (2015) and Want and Saiphoo (2017) may have been unaffected by the images because they were not paying attention to the images. In those studies, participants memorizing either the simple or complex number were instructed to pay attention to images of models, but their attention was not directly measured. It is possible that to avoid being distracted while memorizing the complex number, participants in the high-load conditions ignored the images. In the present study, we manipulated cognitive load by asking participants to remember a complex or simple sequence of colours of clothing items worn by the models in the images, effectively forcing participants to pay at least some attention to the images to learn the sequence. An additional benefit of this method is that thinking about an aspect of the models' appearance (i.e., the colour of their clothes) while viewing them may be a more externally

valid method of inducing high cognitive load than remembering numbers.

The second limitation of previous studies (Want & Saiphoo, 2017; Want et al., 2015) is that the participants came from diverse ethnic backgrounds, yet the models to which they were exposed were all Caucasian women. This potentially underestimated the cognitive efficiency of appearance comparisons because comparisons to Caucasian models may be highly cognitively efficient only for Caucasian women. There is evidence suggesting that non-Caucasian women are less likely to compare themselves with Caucasian models (DeBraganza & Hausenblas, 2008; Jefferson & Stake, 2009; Warren, Gleaves, Cepeda-Benito, Fernandez, & Rodriguez-Ruiz, 2005), meaning that these comparisons are less likely to become highly cognitively efficient for non-Caucasian women. In the present study, we looked for evidence of the cognitive efficiency of social comparisons with media images of models in a sample exclusively of Caucasian women.

Finally, neither Want et al. (2015) nor Want and Saiphoo (2017) included a direct measure of whether social comparisons to models were reduced under high-load conditions compared to low-load conditions. Instead, differences in the amount of comparison were inferred from the differing effects of the images on negative affect and appearance satisfaction between the conditions. To assess more directly whether high cognitive load inhibits social comparisons with media images, the present study included a self-report measure of the extent to which participants compared themselves to the models.

Thus, in the present research, Caucasian participants were exposed to media images of models (or control images) and asked to memorize either a complex or simple sequence of colours from the images. As in previous studies (Want & Saiphoo, 2017; Want et al., 2015), participants' negative affect and appearance satisfaction were measured pre- and post-exposure. Participants also reported how much they compared themselves to the images during exposure. We tested only young women who reported feeling a higher-than-average amount of pressure from the media regarding their appearance, given that these are the young women who most frequently make upward social comparisons to media images in their daily lives (Rogers et al., 2017). They are therefore the people most likely to make comparisons with media images efficiently.

1.2. Research question

If social comparisons are highly cognitively efficient then social comparisons should be unimpeded by high cognitive load and there should be no significant differences between the high- and low-load conditions. That is, participants should report making similar levels of comparisons to, and be similarly detrimentally affected by, the models in the high- and low-load conditions. Alternatively, if comparisons are not highly efficient then only participants in the low-load condition should make comparisons to, and be affected by, the model images.

2. Method

2.1. Participants

The final sample included 227 Caucasian female undergraduate students. To maintain comparability with samples from previous studies (Want & Saiphoo, 2017; Want et al., 2015) all participants were between 17 and 27 years old and scored 3.75 or above on the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4) Pressures: Media subscale (Schaefer et al., 2015). An additional 43 participants were tested, but their data were excluded. Twenty-two were excluded for failing a manipu-