Original Article

Shaping men's memory: the effects of a female's waist-to-hip ratio on men's memory for her appearance and biographical information

CrossMark

Carey J. Fitzgerald [a,*], Terrence G. Horgan [b], Susan M. Himes [c]

[a] Department of Social Sciences, University of South Carolina, Beaufort, USA
[b] Department of Psychology, University of Michigan, Flint, USA
[c] Department of Psychology, Kansas State University, Manhattan, USA

ARTICLE INFO

ABSTRACT

Previous research has shown that people are better at remembering attractive faces than unattractive faces, possibly because physical attractiveness is a sign of increased mate value. However, perceivers may rely on additional appearance cues (e.g., bodily features, dress) when assessing mate value. Thus, men may remember more about a female target when she possesses more attractive bodily features, such as a waist-to-hip ratio that approaches the optimal .70. Two studies were conducted to examine whether female waist-to-hip ratio influences the number of details men recall and recognize about a female target. Study 1 utilized a free recall method, whereas Study 2 consisted of a recognition method. Results indicated that men who viewed a female target with a waist-to-hip ratio of .50 or .90 recalled and recognized significantly fewer details than men who viewed a female target with a waist-to-hip ratio of .60, .70, or .80. These data illustrate adaptive memory, whereby perceivers better remember information of greater adaptive value to them, because this information may lead them to make better fitness-related decisions about whom to potentially mate with. Limitations regarding the realism of the photographs and generalizability of the data are also discussed.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

There has been a growing interest in comparing men's memory for others' appearance and personal information to that of women's (Horgan, Schmid Mast, Hall, & Carter, 2004; Horgan, Stein, Southworth, & Swarbrick, 2012). However, no research has examined factors that might influence men's accuracy for a female target's appearance and personal information. One potential factor, rooted in evolutionary psychology, is the female target's potential mate value. Women's waist-to-hip ratio (WHR) has been linked to men's perceptions of their attractiveness and mate value (Singh, 1993). Men's episodic processing of a female target's other appearance features (e.g., her hair) and information about her (e.g., her family) may be influenced by the extent to which her WHR deviates from the ideal, with greater encoding of cues occurring when her WHR is closer to the ideal of .70. Enhanced male memory for the appearance and background of a woman with a WHR around .70 would be in keeping with the theory that human memory evolved to preferentially encode information of greater adaptive value (e.g., Klein, Cosmides, Tooby, & Chance, 2002). This is an important practical question too, because, although women tend to be the "selectors" early on in the courtship process, men tend to be the ones who initiate sexual activity in heterosexual relationships (Moore, 2010; Vannier & O'Sullivan, 2011).

1.1. Person memory: appearance cues and biographical information

During first encounters, perceivers are initially exposed to the appearance cues and statements of their targets, among other useful cues (e.g., the context). Appearance cues include the target's physical features (face), dress, and personal artifacts (e.g., eyeglasses). Statements include what the target shares about himself/herself, either verbally or in a written format, such as in a biographical sketch on an online profile page. This is an important area of study because the processing of a target's appearance cues and statements is an important first step to perceivers' subsequent judgments about the target (e.g., Funder, 1995). Perceivers can automatically categorize a target into socially meaningful groups (young female in college) as well as make specific inferences (e.g., intelligent, attractive) and global impressions (e.g., the target is similar or dissimilar to the perceiver) about him or her on the basis of such cues. For example, a wealth of evidence has shown that perceivers use target appearance cues to make judgments about targets' affective states, personality traits, and social characteristics (Back, Schmuckle, & Egloff, 2010; Berry & McArthur, 1986; Borkenau & Liebler, 1993, 1995; Ekman, Sorenson, & Friesen, 1969; Feinberg, Mataro, & Burroughs, 1992; Rosenfeld & Plax, 1977).

* Corresponding author.
  E-mail address: cfitzger@uscb.edu (C.J. Fitzgerald).

The research on perceivers' memory for targets' appearance and statements has focused on comparing men's and women's memories. Men tend to be less accurate than women at remembering a target's overall appearance (Hall & Schmid Mast, 2008; Horgan et al., 2004; Schmid Mast & Hall, 2006). Horgan et al. (2012) did not find a gender difference in memory for personal information that was verbally reported by a target, although women were better at recalling shared target family information. Why men's memory for a target's appearance and statements (viz., family information) is worse than women's is unclear (Hall & Schmid Mast, 2008; Horgan et al., 2012; Schmid Mast & Hall, 2006). Because of this, attention has turned to factors that could enhance or impair perceivers' memory for a target. For example, women showed superior memory for a man's physical features when they were considering him as a short-term partner, whereas women had better memory for what he had said when they were thinking about him as a long-term partner (Horgan, Broadbent, McKibbin, & Duehring, 2015). Women's mating strategy was manipulated in an effort to influence the relative importance of specific male cues to their episodic processing of information about him (i.e., adaptive memory). To date, no research has examined the role of adaptive memory processes in men's accuracy for a female target.

1.2. Evolutionary psychology, adaptive memory, and target attractiveness

The notion of adaptive memory is rooted in evolutionary psychology, which has become a powerful theoretical framework for exploring factors linked to human's social and sexual behavior (e.g., Confer et al., 2010). From an evolutionary perspective, human memory evolved to serve our species' survival and reproductive needs and goals (Klein et al., 2002; Marzi & Viggiano, 2010; Nairne & Pandeirada, 2008; Smith, Jones, Feinberg, & Allan, 2012). Moreover, humans should better encode information of greater adaptive value to them (i.e., information more beneficial to their survival or reproduction), resulting in superior memory for such information. Nairne, Thompson, and Pandeirada (2007), for example, found that words were better recalled when they were first rated for their survival relevance, and perceivers' memory for targets' faces appears to be better when those targets display cues of superior genetic fitness, namely greater facial attractiveness (Marzi & Viggiano, 2010; Scheib, Gangestad, & Thornhill, 1999). Because decision-making rests on memory, either implicit or explicit (Nairne & Pandeirada, 2008; Weber, 2006), superior memory for information of greater adaptive value would allow perceivers to make potentially better fitness-related decisions (e.g., where more nutritious food is located; whom to mate with).

In terms of adaptive value, attractive target cues (physical features, voice, etc.) appear to signal greater genetic quality and developmental stability to perceivers (Gangestad, Thornhill, & Yeo, 1994; Shackelford & Larsen, 1999). Because of this, the effect of target attractiveness on perceivers' memory has been studied extensively (Baker, Sloan, Hall, Leo, & Maner, 2015; Dixson, Grimshaw, Ormsby, & Dixson, 2014; Grabe, Samson, Zelenkauskaite, & Yegiyan, 2011; Maner et al., 2003; Marzi & Viggiano, 2010; Smith et al., 2012; Tsukiura & Cabeza, 2011; Treat, Viken, Kruschke, & McFall, 2011). This line of research has a few limitations, including a lack of attention to perceivers' memory for what an attractive target shares about himself/herself, a focus on memory for only a specific target cue (viz., attractive versus average faces), and no research on the effects of women's waist-to-hip ratio on men's memory.

The findings are mixed on whether perceivers have superior memory for statements linked to attractive targets. Smith et al. (2012) found that women's memory for objects was better when they were named in a lower-pitched male voice, which is perceived by females to be the more attractive male voice (Collins, 2000). Baker et al. (2015) noted that men showed better memory for details of a story they listened to while viewing attractive versus average female faces. However, Grabe et al. (2011) observed that men's memory was worse for news reported by a female anchor when she was dressed more attractively (her

appearance was more sexualized, including an accentuation of her hip-to-waist ratio). The obvious limitation to this line of research is that perceivers' memory for what the target had shared *about herself/ himself* – either verbally or in a written format – was not assessed.

Men's assessments of women's mate values are not limited to their appearance. Men value positive personality and social qualities in women, such as their disposition and intelligence (Buss, 1989; Zentner & Mitura, 2012). Moreover, the similarity between the perceiver and target in terms of values, attitudes, and demographics is a powerful determinant of long-term mating (Luo & Klohnen, 2005; Warren, 1966). What a female shares about herself and her family, such as in a biographical sketch, would provide crucial information about her likely mate value to men. To illustrate, a very attractive woman who reports that she has a menial job, limited education, and a prior history of substance abuse might be perceived as having a lower mate value to professional men looking to secure the best genes for their future offspring.

Attractive target faces are better remembered than unattractive faces (Maner et al., 2003; Tsukiura & Cabeza, 2011). Of importance, these studies have not measured perceivers' memory for additional appearance cues (e.g., bodily features, dress) on targets with attractive faces. This is problematic because, in everyday life, male (and female) perceivers are unlikely to focus exclusively on one target cue of high adaptive value, such as female facial attractiveness, when considering whether to pursue a sexual relationship with her. As stated previously, perceivers use a host of appearance cues, from physical features to dress, in their assessments of targets' personal and social characteristics (Back et al., 2010; Berry & McArthur, 1986; Borkenau & Liebler, 1993, 1995; Ekman et al., 1969; Feinberg et al., 1992; Naumann, Vazire, Rentfrow, & Gosling, 2009; Rosenfeld & Plax, 1977). To illustrate, a female target with an attractive face might not be a suitable mate to a young male if she displays other appearance cues of low adaptive value, such as bodily features that suggest she is unhealthy (e.g., too thin) or dress cues that suggest she possesses undesirable traits, such as promiscuity or criminality (e.g., prison garb).

There is a growing body of research illustrating the role of the female WHR in men's perceptions of female attractiveness (Dixson, Grimshaw, Linklater, & Dixson, 2011; Furnham, Tan, & McManus, 1997; Singh, 1993, 2002, 2004, 2006; Streeter & McBurney, 2003). Specifically, the research shows that a .70 WHR – in which the waist is 70% as large as the hips – is usually perceived by men to be the most attractive WHR (Singh, 1993, 2002). The explanation for this male preference relies on the idea that women with a .70 WHR are perceived to possess greater reproductive potential (Singh, 1993). This reproductive potential roughly translates to perceived attractiveness (i.e., women who are viewed as attractive are perceived as such because they possess greater reproductive potential). It is interesting to note that, despite the role of women's WHR in men's perceptions of their attractiveness and the role of target attractiveness to perceivers' memory, no research has examined whether men show superior memory for a female target who possesses a WHR that is at or near the ideal of .70 (i.e., relative to their memory for a female target whose WHR is more extreme, namely .50 or .90). Indeed, previous research has only examined the role of a woman's WHR (among other sexual cues) to men's memory for the news she was reporting (Grabe et al., 2011).

The aim of the present studies is to examine men's memory for a female target as a function of her WHR, which will be manipulated from .50 to .90. The notion of adaptive memory suggests that any cue that signals target attractiveness should trigger superior episodic processing in perceivers of that cue, from attention to memory, because it also signals potentially important genetic information regarding the target's survivability and reproductive potential (Gangestad et al., 1994; Maner et al., 2003; Nairne & Pandeirada, 2008; Shackelford & Larsen, 1999; Smith et al., 2012). We predict that men will show enhanced memory for a female target when her WHR is at or near the ideal of .70, relative to when it is more extreme, specifically .50 and .90. Unlike previous studies that have measured only perceivers'