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Blind men prefer a low waist-to-hip ratio

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Abstract

Previous studies suggest that men in Western societies are attracted to low female waist-to-hip ratios (WHR). Several explanations of this preference rely on the importance of visual input for the development of the preference, including explanations stressing the role of visual media. We report evidence showing that congenitally blind men, without previous visual experience, exhibit a preference for low female WHRs when assessing female body shapes through touch, as do their sighted counterparts. This finding shows that a preference for low WHR can develop in the complete absence of visual input and, hence, that such input is not necessary for the preference to develop. However, the strength of the preference was greater for the sighted than the blind men, suggesting that visual input might play a role in reinforcing the preference. These results have implications for debates concerning the evolutionary and developmental origins of human mate preferences, in particular, regarding the role of visual media in shaping such preferences.

Keywords: Waist-to-hip ratio; Mate preferences; Attractiveness; Congenitally blind

1. Introduction

One feature that appears to influence male mate preferences is female waist-to-hip ratio (WHR). At least in Western countries, it is generally found that men are attracted to females with a relatively low WHR (i.e., an hourglass-shaped body; Singh, 1993). Several explanations for this preference exist. One adaptive explanation is that low female WHR indicated health and fertility over evolutionary history, and as a consequence, selection engineered cognitive adaptations in males that utilize this cue. This hypothesis has received support from studies showing that relatively low WHRs may indeed be associated with health and fertility in females, at least in some populations (for an overview, see Singh & Randall, 2007). Recently, Lassek and Gaulin (2008) have further specified *how* female WHR might relate to fertility. They note that "upper-body fat has negative effects and lower-body fat has positive effects on the supply of long-chain polyunsaturated fatty acids that are essential for neurodevelopment" (p. 26). WHR might therefore serve as a proxy for the ratio of upper-body fat to lower-body fat, with low WHR reflecting a balance in favor of neurodevelopmental resources. Males that preferred low WHR may have had relatively competitive offspring, hence the preference evolved.

Other researchers have advocated less distal explanations. Johnson and Tassinary (2007a, 2007b), for example, have argued that the male preference for low WHRs may be a by-product of a general preference for characteristics matching the target's biological sex. Since women tend to have lower WHRs than men, women with relatively low WHRs display a more "feminine" body shape, making them more attractive. In a similar vein, Gray, Heaney, and Fairhall (2003) have argued that low WHR preferences may be the result of a generic psychological mechanism of enhanced responding to exaggerated features, or "supernormal" stimuli (Eibl-Eibesfeldt, 1970). If men represent a low WHR as "typical" of female bodies, and prototypical features elicit strong responses, this could lead men to prefer female WHRs that are even lower than normally attainable. Some studies suggest that men may indeed have a preference for extreme and unnaturally low WHRs (i.e., 0.50; Gray et al., 2003).

Initially, empirical studies supported the existence of a cross-cultural preference for low WHR, as this preference

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was found among a range of populations, including Caucasians, Hispanics, Indonesians, and Kenyans (e.g., Furnham, McClelland, & Omer, 2003; Furnham, Tan, & McManus, 1997; Henss, 1995; Singh, 1993; Singh & Luis, 1995). However, there is growing evidence that WHR preferences also differ between cultures, especially when comparing Western and non-Western, more isolated populations (Marlowe & Wetsman, 2001; Wetsman & Marlowe, 1999; Yu & Shepard, 1998). Some researchers have explained these cultural differences in terms of context-sensitive adaptation, that is, males might adjust their preferred attributes in females, including WHR, contingent on the specific tradeoffs posed by their local ecology (e.g., Anderson, Crawford, Nadeau, & Lindberg, 1992; Marlowe, Apicella, & Reed, 2005; Marlowe & Wetsman, 2001; Pillsworth, 2008; Sugiyama, 2004). In societies where food shortages are common, for instance, a higher female WHR may be associated with health and reproductive success, and this could lead to a local male preference for high WHRs (Sugiyama, 2004). Such context-sensitive mate preferences can become incorporated into the local cultural norms of a society (Gangestad, Haselton, & Buss, 2006), while cultural transmission processes may in turn reinforce and fine-tune these preferences, including preferences for certain body shapes (e.g., Swami, Einon, & Furnham, 2007; Yu, Proulx, & Shepard, 2008).

While the precise origins of men's low WHR preferences are still debated, several theories postulate a central role for visual input in the development of the preference, either implicitly or explicitly. Consider, for example, the notion that men believe low WHRs are typical of women, and women with low WHRs are therefore more attractive; although it is not always specified where this belief (about the distribution of male and female body types along the WHR dimension) comes from, we believe it is normally assumed to be the result of visual learning. Similarly, the perceptual fluency account supposes that men prefer whatever stimulus (i.e., female body type) the visual system is the most familiar with, presumably as a result of visual experience. Also, if cultural transmission affects the development of WHR preferences, it seems plausible that visual experience would play an important role in this process. Children, for example, may observe that women with low WHRs evoke more favorable responses from their parents and peers, both in the natural environment and in the media (cf. Yu, Proulx, & Shepard, 2008). Notably, some scholars have argued that low WHR preferences are *primarily* shaped by exposure to Western visual media (e.g., Harrison, 2003; Orgel, Urla, & Swedlund, 2005; Yu & Shepard, 1998). To examine the latter hypothesis, Yu and Shepard (1998) studied WHR preferences among men of an indigenous population of Matsigenka (southeast Peru) with little or no exposure to Western media. They found that these men did not display the same WHR preferences as men in Western societies. Yu and Shepard (1998) concluded that the observed cross-cultural *similarities* as found in previous work "only reflected the pervasiveness of Western media" (p. 322).

Given the central role ascribed by all these different theories to visual input in influencing ideals of attractiveness (Scott, Bentley, Tovée, Ahamed, & Magid, 2007; Swami & Furnham, 2008), an important question is whether men's preference for low WHRs also exists *independently* of visual input. To address this issue, we investigated the WHR preferences of congenitally blind men, who never experienced visual input in their lifetimes. In this manner, we can establish whether visual input is a necessary condition for WHR preferences to develop. In general, an exploration of the necessary and sufficient input conditions for a cognitive mechanism to develop may also speak to broader issues concerning the proper developmental conditions yielding reliable adaptation (Barrett, 2007; Sperber, 1994).

If visual input indeed plays a critical role in shaping WHR preferences, as some scholars propose (e.g., Harrison, 2003; Orgel et al., 2005; Yu & Shepard, 1998), then blind men might lack the preference for low WHR. A second possibility is that blind males do have a preference for low WHR, but that this preference is more pronounced in sighted men. This finding would be consistent with the idea that culture, through visual media (e.g., movies, magazines) and other visual input (e.g., observation of peer interactions), reinforces attractiveness preferences that already existed due to other causes. Third, blind men may exhibit a preference for low WHR as strong as their sighted counterparts, which would suggest that visual input (including direct exposure to visual media) does not substantially alter WHR preferences.

2. Methods

2.1. Participants and design

Nineteen men (ranging from 27 to 72 years old, mean age is 46.5, S.D.=14.43) who were blind from birth participated. Two men who reported that they could see vaguely were excluded from data analyses (this did not affect the main results). Thirty-eight men who were not visually impaired also participated. As explained below, these men were randomly assigned to either the sighted or blindfolded condition. In the sighted condition (N=19), age ranged from 23 to 69, mean age 45.4, S.D.=14.90; in the blindfolded condition (N=19), age ranged from 25 to 68, mean age 44.5, S.D.=14.75.

2.2. Procedure and materials

The male experimenter made appointments with the blind men to visit them at their homes (they lived across the Netherlands). The experiment was conducted inside a van that served as a mobile laboratory room. In the van there were two female mannequin dolls with adjustable waist and hip circumferences. The mannequins wore identical tight-