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LETTER TO THE EDITOR

Female Choice and the Evolution of Penis Size

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Masters and Johnson (1970) argued that the size of a man's penis is not important for the sexual satisfaction of women. However, empirical evidence does not support this argument. In particular, studies find that women are interested in penis size and consider it to be important for their sexual satisfaction (Dixson, Dixson, Bishop, & Parish, 2010; Francken, van de Wiel, van Driel, & Weijmar Schultz, 2002; Stulhofer, 2006). As such, female choice should have been one of the selection forces responsible for determining men's penis size: women would tend to prefer to mate with men who had a penis of a size that could provide them with adequate sexual satisfaction. In other words, the human penis should have partially evolved to provide sexual satisfaction to women. I will argue that the variation observed in the length versus the girth of the penis constitutes evidence that female choice has been exercised on the penis size.

With respect to the size of a penis, there are two aspects, namely length and girth. Women appear to be more interested in the latter than in the former. More specifically, in one study, women were asked about the importance of these two aspects of penis size (Francken et al., 2002). About 21 % rated length as important and about 33 % rated girth as important. Other studies produced similar results (Shaeer, Shaeer, & Shaeer, 2012; Stulhofer, 2006). A study designed specifically to examine differences in female preference in these two dimensions asked 50 female students to judge which felt better, i.e., was penis width or length more important for their sexual satisfaction (Eisenman, 2001). None reported they did not know or that width and length were equally satisfying, and a large majority, 45 of 50, reported that width was more important.

Overall, empirical evidence indicates that women are concerned about their partners' penis size and, in particular, they are more concerned about their partners' penis girth rather than length. In turn, this suggests that the selection force coming from female choice exercised on penis size is asymmetrical; that is, it is stronger on the girth than on the length. The variation that a trait exhibits is contingent upon the strength of the selection pressure exercised on it (Crespi & Vanderkist, 1996; Fisher, 1958). If selection pressure is strong, any deviations from an optimal design would be rapidly selected out from the population, resulting in little variation in this trait. On the other hand, if the pressure is weak, it will take more time for deviations to be selected, resulting in a higher variation in this trait. On this basis, it can be predicted that the human penis will exhibit less variation in terms of girth than in terms of length.

To test this prediction, I employed evidence from a study which attempted a systematic review of the literature in order to construct nomograms for penis length and circumference (Veale, Miles, Bramley, Muir, & Hodsoll, 2015). The mean length of the erect penis was estimated to be 13.12 cm ($SD = 1.66$) and the erect mean circumference to be 11.66 cm ($SD = 1.10$). In order to compare which trait exhibits more variation, the coefficient of variation was estimated for each case. This constitutes a measure of relative variability; it is the ratio of the standard deviation to the mean (coefficient of variation = SD/mean), and it is used for comparing the degree of variation across different datasets. Consistent with the prediction, the coefficient of variation was higher for penis length (0.126) than for penis girth (0.094).

In sum, I argue that female choice has been an important selection force operating on the human penis, with the difference in the variation of length versus girth to provide evidence in favor of this hypothesis. However, there may be

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other reasons (e.g., anatomical) behind this difference that also need to be investigated.

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