



ELSEVIER

Available online at www.sciencedirect.com

 ScienceDirect

Personality and Individual Differences 43 (2007) 1267–1277

PERSONALITY AND
INDIVIDUAL DIFFERENCES

www.elsevier.com/locate/paid

Second to fourth digit ratios and the implicit gender self-concept

Stefan C. Schmukle ^{a,*}, Susanne Liesenfeld ^b, Mitja D. Back ^a, Boris Egloff ^a

^a *Department of Psychology, University of Leipzig, Seeburgstraße 14-20, 04103 Leipzig, Germany*

^b *Department of Psychology, Johannes Gutenberg-University Mainz, Germany*

Received 15 December 2006; received in revised form 5 March 2007; accepted 20 March 2007

Available online 11 May 2007

Abstract

Intersexual and intrasexual variation in the ratio of index and ring finger lengths (2D:4D) is thought to be a marker of fetal androgen and estrogen levels. Thus, 2D:4D ratios have been expected to be associated with the development of the gender self-concept (masculinity vs. femininity). These associations have, however, proven to be empirically rather small and lower than expected. By arguing that early developmental events more greatly influence implicit as compared with explicit self-concepts, we hypothesized that 2D:4D ratios might be associated with the implicit gender self-concept – assessed using an Implicit Association Test – as opposed to the self-reported explicit gender self-concept. Results showed that the implicit gender self-concept indeed significantly correlated with 2D:4D ratios for men, whereas these measures were dissociated for women. In contrast and as expected, we found only small correlations between 2D:4D ratios and the explicit gender self-concept for both sexes.

© 2007 Elsevier Ltd. All rights reserved.

Keywords: Digit ratio; 2D:4D; IAT; Implicit measures; Gender self-concept; Sex role

* Corresponding author. Tel.: +49 341 9735923.

E-mail address: schmukle@uni-leipzig.de (S.C. Schmukle).

1. Introduction

The ratio of the lengths of the human index and ring fingers (2D:4D) is a sexually dimorphic trait (see Manning, 2002 for a review). On average, men have smaller 2D:4D ratios than women, a difference that has also been observed for children as early as two years of age (Manning, Scutt, Wilson, & Lewis-Jones, 1998). Differences in 2D:4D are thought to emerge during fetal development, to be fixed by the 13th intrauterine week, and to remain stable thereafter (Garn, Burdi, Babler, & Stinson, 1975; Manning, 2002; Trivers, Manning, & Jacobson, 2006).

There is accumulating evidence that 2D:4D is a marker of prenatal exposure to gonadal hormones: (a) Individuals with congenital adrenal hyperplasia (CAH) who are exposed to abnormally high levels of androgens during prenatal development show more masculine 2D:4D ratios (Brown, Hines, Fane, & Breedlove, 2002; Ökten, Kalyoncu, & Yaris, 2002; see, however, Buck, Williams, Hughes, & Acerini, 2003 who could not confirm this result with X-rays of left hands). (b) Female opposite-sex dizygotic twins have masculinized 2D:4D ratios (van Anders, Vernon, & Wilbur, 2006). (c) The concentration of fetal testosterone and estradiol correlates with the 2D:4D ratio at the age of 2 years (Lutchmaya, Baron-Cohen, Raggatt, Knickmeyer, & Manning, 2004). This association of prenatal exposure to gonadal hormones and finger length ratio seems to be caused by gene regulation, since two *homeobox* gene clusters, *Hoxa* and *Hoxd*, influence the development of both digits and gonads (Kondo, Zákány, Innis, & Duboule, 1997).

A primary function of prenatal exposure to gonadal hormones is the establishment of morphological and neurological sex differences. Via differentiation of the brain into a more masculinized tissue by the presence of testosterone on the one hand and a more feminized by its absence on the other, gonadal hormones also appear to influence the development of human behaviors that show sex differences (Collaer & Hines, 1995). It is difficult to analyze this influence on human behavior empirically, since experimental hormone administration in humans is restricted for obvious ethical reasons and because direct measures of fetal hormone concentration are mostly unavailable. However, 2D:4D ratios are an easily available, indirect measure of prenatal exposure to gonadal hormones (Lutchmaya et al., 2004; Manning, 2002; Manning et al., 1998) and can be used to test the influence of fetal steroids on any sexually dimorphic personality trait (Austin, Manning, McInroy, & Mathews, 2002). Indeed, the expected association between 2D:4D and sexually dimorphic personality traits has been observed for several sex-differentiated traits, e.g. sensation seeking (Austin et al., 2002; Fink, Neave, Laughton, & Manning, 2006), depression (Bailey & Hurd, 2005a), aggression (Bailey & Hurd, 2005b), and spatial abilities (Sanders, Bereczkei, Csathó, & Manning, 2005).

However, rather unexpectedly, only small and inconsistent associations were observed between 2D:4D ratios and different gender self-concept measures (i.e., measures of masculinity vs. femininity). Although in a first study an association of 2D:4D ratios with a relative measure of masculinity vs. femininity was reported for women (Csathó et al., 2003), two recent studies with larger sample sizes failed to replicate this result (Lippa, 2006; Rammsayer & Troche, 2007). Lippa used several gender self-concept measures and observed only a single weak association between 2D:4D and occupational preferences in women, which was even in the unexpected direction (with

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات