**Perceived and Measured Associations Between Attractiveness and Key Traits: A Bayesian Meta-Analysis**

Junsong Lu1\*, Chujun Lin1

1 Department of Psychology, University of California San Diego

**Author Note**

Junsong Lu  <https://orcid.org/0000-0001-6987-6228>

\*Corresponding author *E-mail address*: jul140@ucsd.edu

**Research Proposal**

Physical appearance is one of the most immediately accessible cues in social interactions. In 1972, a landmark study by Dion and colleagues(Dion & Walster, 1972) introduced the concept that “what is beautiful is good,” demonstrating that people tend to attribute positive qualities to physically attractive individuals. Specifically, attractive people are attributed as more socially desirable and competent. Subsequent research has consistently confirmed that the beauty-is-good effect is both strong and widespread (Eagjy et al., 1991; Feingold, 1992, 2017; Talamas et al., 2016). Alongside these findings, researchers have considered this effect as a stereotype or bias(Lee et al., 2017; Schein et al., 2017), with explanations emerging from fields such as economics, social psychology, and evolutionary psychology.

The first explanation comes from economics (for a review, see Maestripieri et al., 2017). Becker (2010) proposed that differential attributions to attractive versus unattractive individuals are akin to prejudice, describing it as a taste-based discrimination, independent of actual productivity in the labor market. However, this account is descriptive rather than explanatory, offering no insight into the underlying mechanisms driving such discrimination. More relevant explanations have been developed by social psychologists, primarily through stereotype-based theories. One prominent example is status generalization theory (SGT), which posits that external status characteristics (e.g., attractiveness) are unconsciously used to form expectations about performance (Webster & Driskell, 1978). Similarly, implicit personality theory (IPT) suggests that people hold cognitive structures—representations of personality traits and their inferential relations—where attractiveness serves as a social category linked to evaluative dimensions like sociability and intellectual competence (Eagjy et al., 1991). The third thread of reasoning, evolutionary theories, offers alternative explanations. According to the evolutionary byproduct account, the beauty advantage is an unintended consequence of biases originally evolved for mating and mate selection. This preference for attractive potential partners is deeply rooted in human psychology and extends into non-mating social interactions (Mulford et al., 1998).

Empirical studies have largely confirmed the robustness of the beauty-is-good stereotype while offering more nuanced modifications to existing theories. Many of these studies are characterized by a series of meta-analyses conducted in the 1990s. In 1991, Eagjy et al. (1991) applied IPT to the beauty-is-good stereotype. By synthesizing previous research, they demonstrated that the effect is not a broad, general phenomenon but is more pronounced in domains such as social competence and interpersonal ease. A key mechanism underlying this effect is that attractive individuals elicit more positive reactions from others, providing more accessible information for perceivers. Although Eagjy et al. suggested that true covariance between attractiveness and social competence may also contribute, they did not provide direct empirical evidence for this link. Subsequent meta-analyses sought to address this gap, prompting reflection on whether the beauty-is-good effect is genuinely a stereotype (Feingold, 1992; Jackson et al., 1995; Langlois et al., 2000). For instance, Feingold (1992) explored the relationship between attractiveness and both perceived and measured personality traits. They found little to no covariance between attractiveness and traits like sociability, dominance, mental health, and intelligence. However, this finding was contradicted by Jackson et al.’s (1995) meta-analysis, which identified a significant association between attractiveness and intelligence in children, supporting the expectancy theory or self-fulfilling prophecy (Snyder et al., 1977).

The debate over the discrepancy between perceived and measured associations between attractiveness and traits continues, despite numerous published meta-analyses in the 1990s. Moreover, this topic remains contentious across various traits. In response, new theories have been proposed to explain the covariance between traits and how they are perceived.

One key trait in this debate is intelligence. Zebrowitz et al. (2002) proposed a developmental model of the attractiveness-intelligence relationship, suggesting that various developmental pathways, such as genetic and environmental influences, contribute to this association. Contrary to earlier meta-analyses (Feingold, 1992), their findings showed a consistent link between intelligence and attractiveness from childhood through middle adulthood. Building on the good genes hypothesis (Thornhill & Gangestad, 1993, 1999), Zebrowitz et al. introduced the bad genes hypothesis and the face overgeneralization hypothesis (Zebrowitz, 2017; Zebrowitz et al., 2003; Zebrowitz & Rhodes, 2004), proposing that while attractiveness predicts intelligence at lower levels, people tend to overgeneralize this association across the full range of attractiveness. In response, another evolutionary theory emerged—the assortative mating hypothesis—which challenges the idea that the beauty-is-good effect is purely a stereotype (Kanazawa, 2004, 2006). This account suggests that individuals pair based on traits that increase status, leading men to mate with more attractive women. Resulting offspring is thus higher in both traits characterizing their parents. A recent version of this theory also accommodates potential nonlinear relationships between traits (Conroy-Beam et al., 2019). However, the predictive power of the assortative mating hypothesis may be limited in monogamous societies and thus was not fully supported by subsequent studies (Mitchem et al., 2015).

A second trait of interest is physical health. The association between health and attractiveness remains inconsistent across both theoretical accounts and empirical findings (De Jager et al., 2018; Kalick et al., 1998; Sheehan & Hamermesh, 2024; Weeden & Sabini, 2005). The good genes hypothesis suggests that health is not merely the absence of disease but the ability to convert biological energy into fitness (Thornhill & Gangestad, 1999). Supporting this, Thornhill and Gangestad (2006) found that fluctuating asymmetry, a factor contributing to lower attractiveness, is negatively associated with self-reported respiratory infections. In contrast, the bad genes hypothesis posits that attractiveness is a reliable cue for health only at the lower end of the spectrum, with the perceived link between health and attractiveness exaggerated across the full range of attractiveness (Zebrowitz & Rhodes, 2004). Reflecting this theoretical debate, empirical findings are similarly mixed on whether attractiveness is a reliable indicator of physical health (Weeden & Sabini, 2005).

The literature review revealed several meta-analyses that have examined both perceived and measured relationships between attractiveness and theoretically relevant traits. However, most of these reviews were conducted nearly 30 years ago and do not incorporate more recent empirical findings. The current study aims to perform a more comprehensive meta-analysis on the perceived and measured associations between attractiveness and key traits. In addition to attractiveness, we will focus on four traits of theoretical relevance: intelligence, health, dominance, and sociability. The first two traits are selected due to ongoing debates in the literature, while the latter two are chosen for their central role in person perception (Abele & Bruckmüller, 2011; Fiske et al., 2002; Oosterhof & Todorov, 2008).

The current study advances the literature by addressing several unresolved issues from previous reviews. First, recent debates have highlighted discrepancies between perceived and measured associations with attractiveness, challenging earlier meta-analytic conclusions. It remains unclear whether these new findings overturn established conclusions. Second, new theoretical accounts and predictions for both measured and perceived traits have emerged (Conroy-Beam et al., 2019; De Jager et al., 2018; Kanazawa, 2004; Zebrowitz & Rhodes, 2004). The support for these new theories across empirical findings is still uncertain. For instance, the assortative mating hypothesis suggests that if person perception is influenced by the beauty-is-good stereotype, there should be discrepancies in the reliability of trait judgments based on how strongly they are affected by attractiveness (Conroy-Beam et al., 2019). Such discrepancies would not be expected if true associations were present.

## **References**

Abele, A. E., & Bruckmüller, S. (2011). The bigger one of the “Big Two”? Preferential processing of communal information. *Journal of Experimental Social Psychology*, *47*(5), 935–948. https://doi.org/10.1016/j.jesp.2011.03.028

Becker, G. S. (2010). *The economics of discrimination*. University of Chicago press. https://www.google.com/books?hl=zh-CN&lr=&id=50qHcSNVVEMC&oi=fnd&pg=PP7&dq=The+economics+of+discrimination.+University+of+Chicago+Press.&ots=ETgYOdcvAi&sig=0Nh-vRwuBP8JpfMRLWR--zFeNIQ

Conroy-Beam, D., Roney, J. R., Lukaszewski, A. W., Buss, D. M., Asao, K., Sorokowska, A., Sorokowski, P., Aavik, T., Akello, G., Alhabahba, M. M., Alm, C., Amjad, N., Anjum, A., Atama, C. S., Atamtürk Duyar, D., Ayebare, R., Batres, C., Bendixen, M., Bensafia, A., … Zupančič, M. (2019). Assortative mating and the evolution of desirability covariation. *Evolution and Human Behavior*, *40*(5), 479–491. https://doi.org/10.1016/j.evolhumbehav.2019.06.003

De Jager, S., Coetzee, N., & Coetzee, V. (2018). Facial Adiposity, Attractiveness, and Health: A Review. *Frontiers in Psychology*, *9*, 2562. https://doi.org/10.3389/fpsyg.2018.02562

Dion, K., & Walster, E. (1972). WHAT IS BEAUTIFUL IS GOOD. *Journal of Personality and Social Psychology*, *24*(3), 285–290. https://doi.org/10.1037/h0033731

Eagjy, A. H., Ashmore, R. D., & Makhijani, M. G. (1991). What Is Beautiful Is Good, But. . .: A Meta-Anatytic Review of Research on the Physical Attractiveness Stereotype. *Psychological Bulletin*, *110*(1), 109–128.

Feingold, A. (1992). Good-looking people are not what we think. *Psychological Bulletin*, *111*(2), 304–341. https://doi.org/10.1037/0033-2909.111.2.304

Feingold, A. (2017). Understanding the physical attractiveness literature: Qualitative reviews versus meta-analysis. *Behavioral and Brain Sciences*, *40*, e28. https://doi.org/10.1017/S0140525X16000492

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Jackson, L. A., Hunter, J. E., & Hodge, C. N. (1995). Physical Attractiveness and Intellectual Competence: A Meta-Analytic Review. *Social Psychology Quarterly*, *58*(2), 108–122. https://doi.org/10.2307/2787149

Kalick, S. M., Zebrowitz, L. A., Langlois, J. H., & Johnson, R. M. (1998). Does Human Facial Attractiveness Honestly Advertise Health? Longitudinal Data on an Evolutionary Question. *Psychological Science*, *9*(1), 8–13. https://doi.org/10.1111/1467-9280.00002

Kanazawa, S. (2004). Why beautiful people are more intelligent. *Intelligence*, *32*(3), 227–243. https://doi.org/10.1016/j.intell.2004.03.003

Kanazawa, S. (2006). Violent men have more sons: Further evidence for the generalized Trivers–Willard hypothesis (gTWH). *Journal of Theoretical Biology*, *239*(4), 450–459. https://doi.org/10.1016/j.jtbi.2005.08.010

Langlois, J. H., Kalakanis, L., Rubenstein, A. J., Larson, A., Hallam, M., & Smoot, M. (2000). Maxims or myths of beauty? A meta-analytic and theoretical review. *Psychological Bulletin*, *126*(3), 390–423. https://doi.org/10.1037/0033-2909.126.3.390

Lee, J., Adams, G., Li, Y. J., & Gillath, O. (2017). Context matters for attractiveness bias. *Behavioral and Brain Sciences*, *40*, e33. https://doi.org/10.1017/S0140525X16000546

Maestripieri, D., Henry, A., & Nickels, N. (2017). Explaining financial and prosocial biases in favor of attractive people: Interdisciplinary perspectives from economics, social psychology, and evolutionary psychology. *Behavioral and Brain Sciences*, *40*, e19.

Mitchem, D. G., Zietsch, B. P., Wright, M. J., Martin, N. G., Hewitt, J. K., & Keller, M. C. (2015). No relationship between intelligence and facial attractiveness in a large, genetically informative sample. *Evolution and Human Behavior*, *36*(3), 240–247. https://doi.org/10.1016/j.evolhumbehav.2014.11.009

Mulford, M., Orbell, J., Shatto, C., & Stockard, J. (1998). Physical Attractiveness, Opportunity, and Success in Everyday Exchange. *American Journal of Sociology*, *103*(6), 1565–1592. https://doi.org/10.1086/231401

Oosterhof, N. N., & Todorov, A. (2008). The functional basis of face evaluation. *Proceedings of the National Academy of Sciences*, *105*(32), 11087–11092. https://doi.org/10.1073/pnas.0805664105

Schein, S. S., Trujillo, L. T., & Langlois, J. H. (2017). Attractiveness bias: A cognitive explanation. *Behavioral and Brain Sciences*, *40*, e43. https://doi.org/10.1017/S0140525X16000649

Sheehan, C. M., & Hamermesh, D. S. (2024). Looks and longevity: Do prettier people live longer? *Social Science & Medicine*, *354*, 117076. https://doi.org/10.1016/j.socscimed.2024.117076

Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. *Journal of Personality and Social Psychology*, *35*(9), 656–666. https://doi.org/10.1037/0022-3514.35.9.656

Talamas, S. N., Mavor, K. I., & Perrett, D. I. (2016). Blinded by Beauty: Attractiveness Bias and Accurate Perceptions of Academic Performance. *PLOS ONE*, *11*(2), e0148284. https://doi.org/10.1371/journal.pone.0148284

Thornhill, R., & Gangestad, S. W. (1993). Human facial beauty: Averageness, symmetry, and parasite resistance. *Human Nature*, *4*(3), 237–269. https://doi.org/10.1007/BF02692201

Thornhill, R., & Gangestad, S. W. (1999). Facial attractiveness. *Trends in Cognitive Sciences*, *3*(12), 452–460. https://doi.org/10.1016/S1364-6613(99)01403-5

Thornhill, R., & Gangestad, S. W. (2006). Facial sexual dimorphism, developmental stability, and susceptibility to disease in men and women. *Evolution and Human Behavior*, *27*(2), 131–144.

Webster, M., & Driskell, J. E. (1978). Status Generalization: A Review and Some New Data. *American Sociological Review*, *43*(2), 220. https://doi.org/10.2307/2094700

Weeden, J., & Sabini, J. (2005). Physical Attractiveness and Health in Western Societies: A Review. *Psychological Bulletin*, *131*(5), 635–653. https://doi.org/10.1037/0033-2909.131.5.635

Zebrowitz, L. A. (2017). First Impressions From Faces. *Current Directions in Psychological Science*, *26*(3), 237–242. https://doi.org/10.1177/0963721416683996

Zebrowitz, L. A., Fellous, J.-M., Mignault, A., & Andreoletti, C. (2003). Trait Impressions as Overgeneralized Responses to Adaptively Significant Facial Qualities: Evidence from Connectionist Modeling. *Personality and Social Psychology Review*, *7*(3), 194–215. https://doi.org/10.1207/S15327957PSPR0703\_01

Zebrowitz, L. A., Hall, J. A., Murphy, N. A., & Rhodes, G. (2002). Looking Smart and Looking Good: Facial Cues to Intelligence and their Origins. *Personality and Social Psychology Bulletin*, *28*(2), 238–249. https://doi.org/10.1177/0146167202282009

Zebrowitz, L. A., & Rhodes, G. (2004). Sensitivity to “Bad Genes” and the Anomalous Face Overgeneralization Effect: Cue Validity, Cue Utilization, and Accuracy in Judging Intelligence and Health. *Journal of Nonverbal Behavior*, *28*(3), 167–185. https://doi.org/10.1023/B:JONB.0000039648.30935.1b