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Brief Report

Do early caregiving experiences shape what people find attractive in adulthood? Evidence from a study on parental age

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ABSTRACT

The purpose of this research was to examine whether early caregiving experiences are associated with adult mate preferences. Participants completed an online survey in which they rated the attractiveness of target faces. Participants born to older parents were more attracted to older faces compared with participants born to younger parents. The results are consistent with the idea that early experiences may play a role in shaping later mate preferences.

1. Introduction

One of the iconic images in psychology is that of Konrad Lorenz being followed by a trail of goslings. Lorenz, a Viennese ethologist studying animal behavior in the middle of the 20th century, was well known for his research on filial imprinting—the process by which young animals learn to identify their primary caregivers. According to his research, young geese would often imprint upon the first suitable moving object they saw. Under normal circumstances, that object would be a gosling's mother. Lorenz, however, demonstrated that goslings would imprint upon a number of different objects if the early caregiving environment were modified accordingly. For example, when Lorenz himself was the first moving object his goslings saw, they imprinted upon him and followed Lorenz around as if he were their mother.

Although many psychologists are familiar with canonical accounts of early imprinting, what is less well known is that, when Lorenz's goslings reached sexual maturity, they attempted to mate with humans, including Caucasian men with white beards (Lorenz, 1970). In other words, it appeared that early experiences not only played a role in helping young animals learn the characteristics of their caregivers, those experiences also played a role in shaping the characteristics they sought in a mate. This phenomenon has been demonstrated in a variety of species. For example, researchers using cross-fostering designs have shown that zebra finches raised by Bengalese finches later prefer to mate with Bengalese finches over members of their own species (Immelmann, 1969).

Taken together, these early studies suggest that caregiving experiences are associated with adult mate preferences in a variety of species. Does a similar phenomenon take place in humans? A growing body of research suggests that it might (e.g., Aronsson, 2011; Bereczkei, Gyuris, & Weisfeld, 2004; Fraley & Marks, 2010). For example, Perrett et al. (2002) digitally manipulated the apparent ages of faces and asked participants to rate the attractiveness of those faces. People who were born to older parents were more attracted to older-looking faces compared with people who were born to younger parents. Similarly, daughters of older fathers have been shown to choose and marry older partners (Wilson & Barrett, 1987; Zei, Astolfi, & Jayakar, 1981). Additionally, people reported greater attraction to smokers if they had a parent who smoked when they were growing up (Aronsson, Lind, Ghirlanda, & Enquist, 2011) (see Heffernan & Fraley, 2013, for a review of the existing literature).

The goal of the present research was to examine further the association between early caregiving experiences and adult attraction by focusing on an aspect of developmental experience that is relatively easy to assess and is not prone to retrospective biases. Specifically, we extended Perrett et al.'s (2002) paradigm to examine whether variation in attraction to older vs. younger faces could be explained, in part, by variation in the age of people's parents when they were born. Our work went beyond previous research in four ways. First, we focused on attraction more generally rather than on mate selection per se (e.g., Wilson & Barrett, 1987; Zei et al., 1981). We did so because we expect that to the extent to which early experiences shape mate preferences, they have their effects more powerfully on who it is that people find attractive rather than who it is that people marry (which, conceptually, may be influenced by a variety of additional factors). Second, to improve upon Perrett et al.'s (2002) study we statistically

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controlled participant age because parental age and participant age tend to be positively correlated. Due to this confound, it is possible that people may report finding older adults more attractive if they were born to older parents not because of developmental influences per se, but because the raters are older too. In the Perrett et al. (2002) study, the researchers determined that participant age did not have a main effect on attractiveness judgments, so they did not control for this variable in their analyses. However, their sample size was relatively low ($n = 83$), raising the possibility that their power to detect the influence of age may have been low. Third, we use much larger sample sizes than previous studies have used (e.g., Perrett et al., 2002, $N = 83$; Wilson & Barrett, 1987, $N = 314$) to detect with greater fidelity the effect of parental age. Fourth, Perrett and colleagues used computerized face images that were digitally manipulated to vary in age. Although this allows for greater control over the manipulation of age, it also has the potential cost of producing artificial-looking images. Instead, we used photographs of real faces that varied in age, potentially allowing for greater ecological validity.

On the basis of previous research, we expected that when rating adult targets, people would tend to find older faces less attractive than younger faces (Kenrick & Keefe, 1992). However, we expected that this effect would be moderated by the age of peoples' parents when they were born. Specifically, we hypothesized that people born to older parents would find older faces more attractive than people born to younger parents.

We should be clear that, although our work is inspired by Lorenz's and other's research on sexual imprinting in animals, we are interested in the basic question of whether early experiences are related to what people find attractive as adults. We are not making the assumption that the *mechanisms* that give rise to this phenomenon in humans are the same as they are in geese and other species. In fact, many explanations that are discussed in this literature focus on the role of mere exposure and familiarity in shaping mate preferences rather than imprinting per se (e.g., Fraley & Marks, 2010). We discuss potential mechanisms in Section 4, however, for now, we wish to emphasize that the primary goal of this research is to help establish the phenomenon itself so that future research can begin to investigate the mechanisms that might explain it.

2. Method

2.1. Participants

Over 3000 participants provided data on the study website. For the present study, we analyzed data from 2278 participants who completed the full survey, who had not previously taken the survey, and who reported their parents were between the ages of 13 and 50 when the participant was born. The majority of the sample was women (80.7%). The proportion of women in our study was higher than most internet studies (see Gosling, Vazire, Srivastava, & John, 2004). However, in the past we have had similarly high proportions of women participating in our research (e.g., Fraley, Heffernan, Vicary, & Brumbaugh, 2011). The average participant age was 25.03 (range: 18–73 years). When participants were born, on average their mothers were 28.23 years old (range: 13–48, skewness = 0.02) and their fathers were 30.77 years old (range: 13–50, skewness = 0.14). The majority of our sample was from the United States (70.9%) with the remainder of the sample from Canada (6.8%), the United Kingdom (4.0%), and elsewhere (18.3%).

2.2. Procedure

Data were collected through an internet survey designed to assess the features that people find most attractive in others. The survey was administered on the second author's website, www.yourpersonality.net, which contains a variety of psychological web studies. The host site can be found via key word searches related to personality and relationships. It receives about 1000 visitors per day, however not all visitors participate in each study posted on the web site.

Participants were asked a number of questions about themselves, including their year of birth, their country of origin, the birth years of their parents, and the sex to which they were primarily attracted. Then participants were presented with 25 faces of their preferred sex. The faces were presented one at a time, in a randomized order. Participants were instructed to rate the attractiveness of each face on a 5-point Likert scale (1 = *very unattractive*; 5 = *very attractive*). Upon completion, participants received personalized feedback about the features that were common to the faces they rated as most attractive (e.g., eye color, hair color, and facial shape).

2.3. Materials

The facial-rating task was created using facial photographs obtained with permission from facity.com—a website that hosts photographs of people from countries around the world that are all taken in a standardized fashion (i.e., a standard distance, with the subject's hair pulled back and minimal cosmetic make-up and jewelry). Facity.com also provides the birth year of each person photographed. We selected approximately 50 photographs of men and 50 photographs of women from the website that represented people of varying ages.

Next, a research assistant coded all the faces for attractiveness, ethnicity, and other facial features. We retained only the photographs that were rated as average or above average on attractiveness (rated 4 or above on a 7-point Likert scale with 1 = *very unattractive* and 7 = *very attractive*). The photographs were divided into five age groups for each sex based on the year of birth provided on facity.com: twenties, thirties, forties, fifties, and sixties–seventies. (We combined the photographs of people in their sixties and seventies because there were fewer photographs of individuals in these age ranges.) For each age group, we randomly selected five photographs. If there were fewer than 5 suitable photographs in an age group, we returned to facity.com and selected additional photographs of moderate attractiveness or above until there were 5 photographs for each age group totaling 25 photographs of female faces and 25 photographs of male faces.

3. Results

We used multilevel modeling to examine the variation in attractiveness ratings. At the within-persons level, we used photo age as a predictor for the attractiveness ratings. The between-persons equations contained participant sex, participant age, and parent age (when participants were born). All age variables were transformed to range between 0 and 1. The Level 1 variable (photo age) was group-mean centered and all Level 2 variables (participant sex, participant age, mother age at birth, and father age at birth) were grand-mean centered. We estimated parameters for two random slope models, one that used the mother's age at participant birth and a second model that used the father's age at participant birth.

The results for the model using mother's age are summarized in Table 1. We expected that participants born to older parents would rate the faces of older individuals as more attractive than participants born to younger parents. The key test of this hypothesis is the interaction between parent age at the time of participant birth and photo age. Indeed, this interaction was statistically significant: