

The attractiveness advantage at work: A cross-disciplinary integrative review

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Compared with people of average attractiveness, the highly attractive earn roughly 20 percent more and are recommended for promotion more frequently. The dominant view of this “attractiveness advantage” is one of taste-based discrimination, whereby attractive individuals are preferred without justification in economic productivity. We conduct a comprehensive review of research on attractiveness discrimination, finding relatively more evidence that this phenomenon constitutes, to some extent, statistical (as opposed to solely taste-based) discrimination, in which decision makers assume that attractive people are more competent and discriminate based on instrumental motives. We then review research that speaks to whether decision makers might be correct in assuming that attractive workers are more productive, finding that the attractive possess a slight advantage in human and a notable advantage in social capital. We finally review studies evaluating whether an advantage exists beyond that explained by capital differences. We find that the current body of work provides inconclusive evidence of taste-based but relatively more conclusive evidence of statistical discrimination processes. Our integrative view suggests how attractiveness biases can be detected more effectively, and points to key directions for future research on the sources of the attractiveness advantage. We conclude by discussing the promise of an integrative approach to understanding other achievement gaps, such as those on the basis of gender, race, and social class.

INTRODUCTION

Allocating valued career outcomes, such as promotions, pay raises, and employment opportunities (Ng, Eby, Sorensen, & Feldman, 2005), on the basis of merit is a major concern from the perspective of organizational efficiency and fairness (Mahoney & Arnkoff, 1979; Milgrom & Roberts, 1992; Parsons, 1951; Weber, 1978). It is therefore not surprising that a large body of research has focused on uncovering reasons for achievement gaps of different social groups, most notably women, ethnic minorities, and workers from lower class backgrounds (see Castilla, 2008; Pager & Shepherd, 2008; Pitesa & Pillutla, 2019 for reviews). Organizational sciences (and related disciplines such as the sociology of work) are essential in these research endeavors, given that careers and socioeconomic achievement are shaped in the domain of work and organizations. Our review is concerned with explaining an achievement gap that is similar in size to gender, race, and class gaps (Laurison & Friedman, 2016; Patten, 2016), and affects employees irrespective of their gender, race, and class background, but has received far less attention in organizational sciences—the physical attractiveness gap, also known as the “attractiveness advantage” or the “beauty premium.” Compared with people of average attractiveness, attractive individuals earn roughly 20 percent more (Wong & Penner, 2016) and are recommended to be promoted more frequently (Chung & Leung, 1988; Marlowe, Schneider, & Nelson, 1996; Morrow, McElroy, Stamper, & Wilson, 1990; Ross & Ferris, 1981).

The dominant view in both social sciences and public discourse is that the attractiveness advantage represents a clear case of taste-based discrimination, or discrimination unrelated to merit. For example, Hamermesh (2011, p. 111) argues that “To some extent our preferences for beauty are purely discriminatory— are no different from the distastes of citizens in the majority for buying from, working with, or employing workers in some minority group.” Accordingly, some Americans consider “appearance discrimination more significant than ethnic discrimination” (Kuran & McCaffery, 2004, p. 727), and policymakers are increasingly urged to offer legal protections to less attractive people. Such legislation against “lookism” is already in place in some U.S. states as well as in France and Australia (Chopin & Germaine, 2017; Office of Human Rights, 2019; Santa Cruz Municipal Code, 2019; Victorian Equal Opportunity & Human Rights Commission, 2020). In the current review, we integrate

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and evaluate research across several social science disciplines to examine how the current state of scientific evidence speaks to the over arching social and organizational concerns that attractiveness favoritism is fully unmeritocratic. We leverage a distinction developed in economics but underused in organizational research on discrimination, differentiating between statistical discrimination (preference based on expected performance) and taste-based discrimination (preference unrelated to expected performance) (Becker, 1957; Phelps, 1972). Whereas taste-based discrimination violates dominant views of merit and justice, some forms of statistical discrimination are considered, to an extent, legitimate. For example, if an employer believes that intelligence is correlated with expected performance, then the employer is free to discriminate on the basis of intelligence tests (U.S. Equal Employment Opportunity Commission, 2020; Legislation.gov.uk, 2020).

We analyze the current body of evidence to ascertain whether documented attractiveness discrimination can be considered statistical, taste-based, or some degree of both. We integrate and extend past and, by now, dated reviews (e.g., Hosoda, Stone-Romero, & Coats, 2003), by incorporating a surge in research conducted in the past 18 years that resulted in a 900 percent increase in samples we review. We evaluate the strength of claims that attractiveness discrimination is taste-based, particularly when forces impacting individuals in the context of work and organizations are conceptually incorporated. When the literature on attractiveness discrimination is reviewed from this perspective, a novel and perhaps somewhat controversial insight emerges: Most work, including our own, arising from decades of research on attractiveness discrimination and claiming bias (i.e., taste-based discrimination) in favor as well as against attractive people did not use study designs which allow for the conclusion that favoritism of attractive people represents a bias or taste-based discrimination. Instead, decision makers seem to assume that attractiveness differences are correlated with performance differences, and discriminate on that basis, guided by their salient instrumental goals (which often entail performance maximization).

We then turn to the question of whether decision makers' assumptions concerning attractiveness as a correlate of performance are justified, and to what degree. Going back to the example of intelligence, because intelligence is a true correlate of performance (correlations between the two are cited to be between 0.45 and 0.58; Schmidt & Hunter, 2000), the current notions of meritocracy consider this form of statistical discrimination legitimate. By contrast, if statistical discrimination occurs on the basis of a factor a decision maker falsely believes to be a correlate of performance (e.g., social group membership that is in reality a zero-correlate of worker's capabilities), then such discrimination is considered unmeritocratic. Discrimination based on inaccurate assumptions of competence (e.g., that less attractive workers are less competent) disadvantages a person with no justification from the perspective of performance maximization. This can also lead to an inefficient allocation of organizational resources, as premiums are paid based on performance-unrelated characteristics. We thus review research on whether workers differing in attractiveness actually vary in their work-relevant resources, which we conceptualize as human and social capital (Coleman, 1988; Lin, Cook, & Burt, 2001). We review studies that speak to when and whether attractiveness is associated with these types of capital, including seven relevant meta-analyses that incorporate studies in psychology, biology, criminal justice, education, and economics. Our review suggests that, on average, better-looking people do possess a slight advantage in human and a small but notable advantage in social capital, compared with less attractive people. We also review studies using data on attractiveness, productivity, and earnings, mostly in economics, to ascertain the role of human and social capital factors in the attractiveness advantage.

Our integration of the different literatures on attractiveness, encompassing both demand-side factors (third-party discriminatory treatment) and supply side factors (concerning how attractiveness is correlated with work-relevant resources), provides a novel view of the attractiveness advantage as well as the associated domain of research. This integration of evidence suggests that the attractiveness advantage might constitute, to some extent, statistical discrimination (as opposed to being a clear case of taste-based discrimination), with decision makers in many cases discriminating on the basis of attractiveness because of their belief that attractive people are more competent. Our analysis further suggests decision makers are driven by instrumental motives (maximizing future worker performance or even their own outcomes) rather than an irrational bias in favor of attractive people. It is important to emphasize that we do not claim that evidence for this explanation is conclusive. However, we believe that it cannot fully be ruled out, given the current state of the literature. Our review thus suggests that simple explanations for and approaches to studying the attractiveness advantage will not suffice in addressing the question of social justice and organizational efficiency related to this employee characteristic. Rather, the attractiveness advantage seems to be a result of complex social processes that generate real social and at times even human capital differences as a function of attractiveness. These differences are translated into achievement gaps through, at least in part, statistical discrimination enacted by decision makers acting on instrumental motives. This perspective raises a series of important questions for future research that will be essential in determining the nature and

justifiability of the attractiveness advantage, and thus the most appropriate responses by organizations and policymakers.

The finding that supply-side attractiveness advantages reside primarily in the domain of social capital (including characteristics such as sociability, dominance, and popularity) as opposed to human capital (including characteristics such as intelligence, mental health, and physical health) suggests that these differences may be attenuated through informed social action, which tends to be more effective at changing social dynamics than at changing factors such as intelligence. The same finding also suggests social processes as likely causes of such differences, given that social capital factors (more so than human capital factors) fundamentally emerge through social interactions. Our review suggests that there is currently insufficient research on these social dynamics, limiting the understanding of how exactly social, and to some extent, human capital differences as a function of attractiveness emerge, whether processes causing them are themselves fair (or unfairly favor the attractive), as well as the extent to which decision makers' discriminatory treatment based on attractiveness can be justified by such differences in ability. More research is particularly needed in the domain of work and organizations, in which achievement gaps are generated, and which are characterized by complex interactions among different organizational elements and individual agents' goals that are difficult to recreate in artificial settings in which attractiveness discrimination has generally been studied (Jawahar & Mattsson, 2005; Johnson, Sitzmann, & Nguyen, 2014; Lee, Pitesa, Pillutla, & Thau, 2015). Our review also calls for more cross-disciplinary research on the attractiveness advantage as many of the documented supply-side differences in attractiveness (which may partly drive and even justify the attractiveness advantage) may arise outside of the domain of work and organizations, for example, during early socialization and education. We detail specific avenues for future research on attractiveness in the final part of the review, and also discuss how our approach integrating supply- and demand-side literatures can inform research on other achievement gaps, most notably those concerning gender, race, and social class.

WHAT IS ATTRACTIVENESS AND WHY WOULD IT ENGENDER DISCRIMINATION

Impressions of attractiveness have their origins in evolutionary processes of sexual selection but are influenced by various cultural and social mechanisms, interacting with individual decision makers' goals and situational constraints to shape attractiveness discrimination. The ability to form impressions of physical attractiveness is believed to have emerged through the process of natural selection because certain physical features (those considered attractive today) tend to be true correlates of factors that were evolutionarily important for reproductive success, such as overall health (Sugiyama, 2015) and phenotypic and genotypic quality (Mealey, Bridgstock, & Townsend, 1999; Shackelford & Larsen, 1997). Individuals who were able to differentiate between physical features considered attractive versus unattractive today thus enjoyed fitness benefits because of more effective (in terms of evolutionary fitness) mate choice or more effective positioning and strategizing in the mating market (for reviews, see Gangestad & Scheyd, 2005; Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000; Rhodes, 2006). Conversely, individuals who were unable to effectively discriminate between those considered attractive versus unattractive were less likely to pass on their genes, so the only remaining current human population today readily differentiates between more and less physically attractive people.

Given these evolutionary roots of attractiveness impressions, people tend to agree on attractiveness judgments, as evidenced by the fact that ratings of attractiveness correlate highly both cross-culturally and cross-ethnically (Hamermesh, 2011; Langlois et al., 2000).² Objective determinants of attractiveness include symmetrical faces (Mealey et al., 1999; Shackelford & Larsen, 1997), neonate features (Jones et al., 1995; Perrett et al., 1998), mature characteristics (Cunningham, Roberts, Barbee, Druen, & Wu, 1995), and "mathematically average" facial proportions (Langlois, Roggman, & Musselman, 1994; Rhodes, Sumich, & Byatt, 1999; Thornhill & Gangestad, 1993). As a testament to its evolutionary roots, attractiveness, attractiveness impressions, and their importance to observers are strongly shaped by key biological categories of gender and age. With regard to gender, women's attractiveness tends to be more important in mate choice than men's (Buss, 1989, 1991; Buss & Schmitt, 1993). This is likely due to women's (compared with men's) more pronounced biological role (higher minimal obligatory parental investment; Trivers, 1974) relative to social role (such as providing resources and shelter, which men are able to do as well) in shaping reproductive fitness. With regard to age, impressions of physical attractiveness tend to be strongly correlated with fertility (Buss, 1989). This explains why, on average, both men who are aged 15

² Typical cross-cultural differences invoked to make the point that beauty is socially constructed concern body features, rather than facial attractiveness. For example, although high correlations are found between the ratings of Black and white American men for facial attractiveness ($r = 0.94$; Cunningham et al., 1995), these held only when rating facial attractiveness; body attractiveness ratings between these groups diverged such that, compared with white participants, Black participants preferred heavier, but not taller, figures.

years as well as those who are aged 35 years prefer women who are 25 rather than women of their own age or other age-groups (Buss, 1989). Impressions of attractiveness, particularly for women, further decline with age, corresponding to the fact that human fertility declines after the age of 35 years (Spandorfer, Avrech, Colombero, Palermo, & Rosenwaks, 1998).

These biologically rooted impressions through which people differentiate between more and less attractive people are further elaborated through a host of interconnected social mechanisms operating at different levels and shaping attractiveness dynamics both over evolutionary time as well as concurrently, in a given sociocultural historical context. Going back to the case of mate choice mentioned earlier, preference for attractiveness is posited to have led to the association between attractiveness and initially unrelated characteristics such as intelligence (Buss & Barnes, 1985; Miller, 1998). Physically attractive people were on average able to secure higher quality mates, for example, those who were higher in intelligence and could therefore cope with everyday challenges more effectively or generate larger contributions to the family. It is argued that, over time, this mate choice pattern led to intelligence and attractiveness to co-occur in offspring (Buss & Barnes, 1985; Miller, 1998).

In addition to amplifying evolutionary processes responsible for the correlation between attractiveness and initially unrelated fitness advantages, social processes can further act to benefit attractive individuals in a given sociocultural historical context. Sociopsychological research suggests that humans are prone to generalized positive treatment of those they perceive positively or high in status, even when no subjectively rational logic (including in terms of direct or inclusive evolutionary fitness) can account for the responses. For example, sociological research on status generalization theory proposed a “beauty as status” model (Webster & Driskell, 1983), whereby observers deduce a target person’s social status from socially desirable traits such as attractiveness (or gender or race), and in turn infer existence of unrelated positive characteristics. Research on motivational underpinnings of this process has been guided by the just-world theory, suggesting that people are motivated to see the world as fair and predictable, so they implicitly or explicitly come to view those who enjoy positive outcomes (as do attractive individuals) as deserving of such outcomes, and in turn impute positive characteristics to such individuals (Lerner, 1980). In line with this explanation, Dion and Dion (1987) found that those who scored higher on a scale measuring the need to believe in a just world were particularly likely to assume that physically attractive people possess more desirable character traits.

The process through which a generalized favorable view of the attractive is generated extends to the social domain and becomes elaborated through cultural processes that in turn impact individuals by shaping their stereotypes and motives. To illustrate this point, we use the example of perceptions of morality, which are considered to be, in addition to competence, a fundamental dimension along which people evaluate the self and others (Abele & Wojciszke, 2007; Cuddy, Fiske, & Glick, 2008). The focus on stereotypical perceptions of morality with regard to attractive versus unattractive people also helps us elaborate on a related point about the relevance of stereotype accuracy for gauging the nature of attractiveness discrimination. In line with the outlined processes whereby people generalize from attractiveness to other desirable traits, people assume that attractive people are also more moral, what Dion, Berscheid, and Walster (1972) label the “what is beautiful is good” stereotype. Thus, people generalize from physical attractiveness to moral qualities and assume that better-looking individuals are more moral, trustworthy, and sociable (see also Langlois et al., 2000). These inferences have tangible outcomes in life domains in which assumptions concerning morality are important, such as the judiciary system. For example, Efran (1974) found that attractive people receive more lenient sentences for exactly the same crime. Importantly, in an article titled “Good looking people are not what we think,” Feingold (1992) shows that stereotypes of attractive people can in many cases be inaccurate, and the inference that the attractive are more moral is one of them.

Assumptions concerning the association between attractiveness and positive traits, even if unfounded (as in the case of morality), can mutate into social and cultural processes that further reinforce these associations. Philosophers of Ancient Greece, the Middle Ages, and the Enlightenment all purported associations between beauty and goodness. According to Aristotle, beauty is the physical manifestation of the “golden mean,” which refers to the middle between two extremes, and which, when manifested in life choices, allows for a virtuous life (Sartwell, 2016). St. Thomas Aquinas conceptualized the practice of Catholicism as an inherently aesthetic experience, conflating the experiences of beauty and morality (e.g., unity, truth, and goodness) (Steinberg, 1941). Immanuel Kant described in great detail the various parallels between the experience of beauty and the experience of moral judgment (Cohen & Guyer, 1982), a theme that has re-emerged in modern moral psychology that highlights emotions common to moral and aesthetic experiences, such as awe (Keltner & Haidt, 2003). Similarly, in modern times, research finds that heroic movie actors are more likely to be attractive and villains unattractive (Langlois & Styczynski, 1979). Such cultural forces may further amplify associations between attractiveness and assumed positive attributes, in turn leading to favoritism of attractive individuals (Eagly, Ashmore, Makhijani, & Longo, 1991).

Thus, favoritism of attractive people might arise due to biological reproductive dynamics, such as in the case where a person favors an attractive prospective mate, but it might also take a more generalized form, whereby people favor attractive individuals as a result of diffuse psychological tendencies to benefit the attractive simply because they are seen as higher in status and possessing more favorable characteristics. Translated into the context of achievement gaps, these forms of favoritism toward attractive people would go against dominant notions of merit to the extent that valued outcomes are allocated to the attractive because of the meaning of attractiveness in reproductive dynamics (e.g., giving a promotion to an attractive potential mate) or because of a generalized desire to benefit the attractive. This view of attractiveness discrimination as a spillover of evolved preferences for attractive people largely disconnected from merit permeates research on attractiveness across different literatures. In addition to the economics research cited at the outset and making similar claims (Hamermesh, 2011), research in psychology and organizational behavior generally views any preference afforded to those of higher attractiveness as “attractiveness bias” (as reported in the abstract of the most recent meta-analysis of the role of attractiveness in job-related outcomes; Hosoda et al., 2003), suggesting a view of attractiveness discrimination as a case of primarily taste-based discrimination.

In the following section, we conduct an integrative review of research on preferential treatment as a function of attractiveness (the demand-side attractiveness advantage literature) with the focus on evaluating the literature in terms of the strength of evidence in support of the view of attractiveness discrimination as a case of taste-based discrimination, violating principles of merit. We then entertain a different interpretation of documented cases of attractiveness discrimination, one that maybe particularly relevant to organizations and thus to explaining achievement gaps generated in organizations and through work dynamics. Organizations are defined as goal-directed social entities (Daft, 2004), and organizational actors are thus primarily meant to do something. As such, this ubiquitous and important context is also a highly specific one, with considerations concerning instrumentality vis-a-vis organizational goals as its defining feature’ (Barnard, 1938; Gouldner, 1959; Selznick, 1948). Processes of statistical discrimination are thus particularly salient in organizational contexts, as people tend to be evaluated primarily (and always to at least some extent) in terms of their instrumentality to someone else’s, mostly organizational, goals.

Against the backdrop of the consideration of organizations as goal-driven systems, we entertain the possibility that attractiveness discrimination occurring in organizations and generating or at least substantially contributing to the attractiveness advantage represents not a clear case of taste-based discrimination, but instead one that could in part constitute statistical discrimination. We suggest that decision makers may, to some extent, discriminate on the basis of attractiveness because they believe that attractiveness is correlated with performance, and these beliefs might often be correct. Recall that statistical discrimination is considered justifiable when the observed characteristic in question represents a correlate of performance, such as intelligence with regard to performance. If our explanation that decision makers preferentially allocating valued career outcomes to attractive workers might be in part guided by (potentially accurate) competence stereotypes, then this possibility would question the assumptions underlying the current thinking and regulation regarding attractiveness discrimination, and ultimately the attractiveness advantage.

We highlight research, partly reviewed earlier, suggesting that social processes throughout life stages differentially impact people as a function of attractiveness, with potential results for key domains of ability relevant to success at work. The fact that people seem to impute positive characteristics to attractive individuals might engender not only bias in hiring but also promotion among otherwise equally qualified individuals. The same process might lead to greater attention on the part of the teachers and other important socialization agents (Langlois et al., 2000), and the abundant research on the Pygmalion effect shows that such expectations translate into actual competence gaps (Eden, 1990; McNatt, 2000; Rosenthal & Jacobson, 1968). By the time more versus less attractive individuals reach organizations, they might be endowed with different levels of ability to contribute to organizational goals. The logic we just described is an example of the general self-fulfilling prophecy argument (Merton, 1948), in which initial advantages in achievement relevant resources are amplified through different reinforcing social processes that might be discriminatory from the perspective of modern notions of merit (e.g., teachers’ favoritism of attractive children). However, these processes can ultimately result in real differences in competence and, thus, in value from the perspective of instrumental concerns of organizational decision makers. Research on gender achievement gaps proposes a similar explanation, arguing that small biological sex differences in physical strength shaped gender roles such that men are seen as more fit for the public or the economic domain. These gender roles then independently drive the production of gender differences in ability by disproportionately allocating opportunities and resources to men, even absent any biological sex advantages in the context of modern work, one less reliant on physical strength (Eagly, 1987; Eagly & Wood, 1999).

The final component of this proposed view of the attractiveness advantage is the possibility that decision makers in their attractiveness discrimination are somewhat accurate in assuming that real competence differences exists

between more and less attractive individuals. In line with research showing that people hold generalized positive stereotypes of the attractive, for example, as evidenced by higher perceived morality (Dion et al., 1972; Eagly et al., 1991), decision makers also assume that attractive people tend to be more competent (Lee et al., 2015; Tews, Stafford, & Zhu, 2009). In cases when decision makers' assumption of higher competence of attractive people is correct, decision makers are engaging in justifiable statistical discrimination even if the attractiveness stereotypes originate from epistemologically biased processes (such as assuming that attractive people are overall better, which they are clearly not in all domains, as demonstrated by the important case of morality). The possibility of stereotype accuracy in decision makers' attractiveness-based statistical discrimination is further suggested by evidence of relatively nuanced competence-related attractiveness stereotypes people hold. For example, decision makers seem to engage in a naive reasoning process whereby they infer that the attractive, precisely because of their higher social status, also have a higher sense of entitlement, which may lead to discrimination against attractive candidates in selection for undesirable tasks in which workers can, at best, merely hope to put up with the job (Lee, Pitesa, Pillutla, & Thau, 2018). Thus, observers seem to have relatively fine-grained theories concerning attractiveness, possibly derived through a naive reasoning process (which maybe more accurate and nuanced than a generalized assumption that attractive people are better), as well as through learning from daily social sampling and repeated observation of attractive versus unattractive people, likely a nonnegligible contributing factor, given the salience of attractiveness in daily life (Dion et al., 1972).

As illustrated by the example of anti-attractiveness discrimination based on an inferred sense of entitlement, we finally assume that inferences concerning competence may drive attractiveness discrimination in the domain of work and organizations depending on the relevance of these impressions for decision makers' instrumental goals, thus constituting a phenomenon closer to statistical than taste-based discrimination. As also illustrated by the example of discrimination based on an inferred sense of entitlement, our strategy of ascertaining the nature of attractiveness discrimination is to focus on study design and context factors that allow us to gauge when and why attractiveness discrimination occurs, for example, boundary conditions that help ascertain whether generalized pro-attractiveness preference versus job-related perceptions and instrumental motives are at play. An example of this is the mentioned focus on the specific context of selection for jobs marked by low average levels of worker satisfaction, which can reveal whether instrumentality concerns regarding attractive workers (and thus statistical discrimination) overshadow mating-related or generalized pro-attractiveness biases (taste-based discrimination). We provide an interpretation of the literature on attractiveness discrimination using this approach to evaluate the proposed role of statistical discrimination in the following section, after which we turn to the question of whether such potential statistical attractiveness discrimination is founded, given what we know about real differences in the value that more versus less attractive workers bring to the organization. Table 1 summarizes the different reviewed perspectives within our integrative framework, and highlights key citations, hypotheses, and findings.

ATTRACTIVENESS ADVANTAGE: A REVIEW OF STUDIES ON DEMAND-SIDE FACTORS

We start with a review of demand-side processes impacting the attractiveness advantage, that is, actions of individuals who make decisions regarding the hireability, promotability, or employment potential of more versus less attractive employees, thus shaping socioeconomic achievement gaps (Ng et al., 2005). Our review encompasses studies reviewed in the latest quantitative review (Hosoda et al., 2003) and extends it by reviewing studies which surpass samples in prior reviews by 900 percent. We present and compare the magnitude and direction of the attractiveness advantage as well as the heterogeneity of effects in the older body of literature and in our updated sample to examine the persistence and evolving nature of attractiveness discrimination. We next review the literature asking the question of whether documented attractiveness favoritism constitutes a case of taste-based or statistical discrimination.

The Typical Demand-Side Study

Studies in this tradition have predominantly relied on experimental designs. Participants are typically provided with photographs and, at times, workplace-relevant information regarding one or more targets. Participants are then asked to make decisions that reflect how valuable they perceive the target to be in a specific workplace context. The workplace outcome variables used in these studies include hiring, promotion, callback/interview, and termination decisions; ratings of suitability, predicted success, and employment potential; performance evaluations; and the choice of the target as a work partner. Some studies describe certain organizational context features, most notably the industry or job position for which the target is evaluated (e.g., management, construction, education, counseling, or politics, among others). To provide a more externally valid perspective, some scholars have recently used audit study methods to investigate the attractiveness advantage in more

naturalistic settings (e.g., Baert, 2018; Busetta, Fiorillo, & Visalli, 2013; Galarza & Yamada, 2017; Lopez Boo, Rossi, & Urzua, 2013). In these studies, candidate profiles with attached photographs are fabricated and distributed to organizations in response to hiring ads. Callback rates then serve as the main dependent variable to assess differences in the hiring probability of more versus less attractive candidates.

Review of Demand-Side Studies (Before 1998)

The most recent meta-analysis on demand-side factors relevant to our current review, conducted by Hosoda et al. (2003), suggests that there is a significant demand-side component of the attractiveness advantage. After aggregating 62 unique effect sizes from studies conducted between 1975 and 1998, the authors find a significant small- to medium-sized effect (Cohen's $d = 0.37$) of attractiveness on workplace outcomes. This research also reports a substantial amount of heterogeneity (according to the I^2 interpretation guide by Deeks, Higgins, & Altman, 2019) in the effects included in their sample ($I^2 = 65.34$ percent). To explore this heterogeneity, Hosoda et al. examined a number of potential moderators, finding that the attractiveness advantage (1) weakened over time as measured by publication year, (2) was strongest for choices of work partners and weakest for performance evaluations, and (3) was stronger when study designs were within- versus between subjects. Using their review as a guideline, we examined the many demand-side studies that have been published since.

Review of Demand-Side Studies (After 1998)

The meta-analysis by Hosoda et al. (2003) reviewed studies up to 1998.³ To incorporate the past 20 years of research on the topic, we conducted a comparable analysis to the one reported in Hosoda and colleagues' article (tiny.cc/hosoda). We followed the same search and analysis procedures described in their review so that valid conclusions could be drawn regarding the changes, if any, in the advantage over time. Using these criteria,⁴ we identified 42 studies, an increase of 156 percent from the 27 studies profiled in the Hosoda et al. review, published between 2000 and 2018, including 28,843 participants, an almost 900 percent increase from the number of participants included in the prior review. All technical information for the following analyses can be found on a dedicated Open Science Framework webpage (tiny.cc/annals). We invite readers to view and use these materials to further their own research.

A Comparison of the Attractiveness Advantage Pre- and Post-2000

In the body of 42 studies published since the year 2000, the average weighted effect size of attractiveness on workplace outcomes was $d = 0.38$, which continues to reflect favorable workplace outcomes for attractive individuals (see Table 2). This average effect is comparable to the one quoted by Hosoda et al. (2003) ($d = 0.37$). However, there is much greater heterogeneity in the more recent body of research. The relatively high and growing heterogeneity resonates with our perspective, highlighting the interaction between attractiveness competence stereotypes and diverse instrumental goals of organizational decision makers, which are also increasing in complexity, given the dramatic ongoing technological advances and changes in the nature of work (Burke & Ng, 2006; Eagly & Carli, 2003). These developments may thus create a rise in the number of situations in which attractiveness might have different instrumental relevance. By contrast, perspectives proposing relatively stable and uniform attractiveness biases have more difficulty accounting for the existence of high heterogeneity and particularly its rise.

Hosoda et al. (2003) reported a decrease in the magnitude of the attractiveness advantage from 1975 to 1998. We examined whether, with the new studies reviewed, this trend persists today. This question is important as it speaks to the relevance of the attractiveness advantage, and, in particular, the relevance of demand-side processes potentially generating this achievement gap. When taking into account the entire body of literature, no systematic change in strength is observed when examining the data in either a categorical (pre- versus post-2000) or continuous (by publication year) fashion (see Figure 1 for effect sizes of all demand-side studies; see Appendix A

³ Hosoda et al. (2003) conducted their literature search from 1963 to 2000. They found no eligible studies published between 1998 and 2000; thus, our literature review encompassed all relevant studies published between 2000 and 2018.

⁴ As per Hosoda et al. (2003), an electronic search of the databases PsychINFO and ERIC was conducted using the term physical attractiveness coupled with each of the following keywords: selection, evaluation, promotion, management, professional, job applicant, and performance evaluation. In addition, the reference sections of review articles and book chapters were searched for potentially relevant articles. To be included, all articles needed to (1) directly manipulate target attractiveness, (2) measure an organizationally relevant dependent variable, and (3) provide sufficient information for examining relevant effect sizes.

for a list of all included demand-side studies). In sum, we find that (1) the magnitude of the attractiveness advantage is roughly equal to that observed by Hosoda et al., (2) there exists considerably more heterogeneity in effect sizes in the most recent 18 years of research than in the research pre-2000, and (3) the effect does not seem to strengthen or weaken over time. The findings underline the continued significance of attractiveness discrimination and the need to understand its nature.

Attractiveness Discrimination: Taste Based or Statistical?

We start our evaluation of the literature concerning the strength of evidence in support of the view of attractiveness discrimination as a case of primarily taste-based discrimination focusing on the strongest evidence in support of such claims. We then contextualize these findings in the broader literature, focusing specifically on factors operating in the context of organizations, to evaluate the possibility that the documented cases of attractiveness discrimination can additionally be interpreted through the lens of statistical discrimination, as elaborated earlier.

Given the mating-related evolutionary roots of attractiveness, the most obvious case of taste-based attractiveness discrimination is favoritism of prospective sexual partners.

Evidence of existence of such discrimination comes from a series of studies finding pro-attractiveness bias (e.g., in favorable admissions decisions, and desire to interact with) in relation to opposite-gender targets (Agthe, Sporrle, & Maner, 2011; Agthe, Strobel, Sporrle, Pfundmair, & Maner, 2011). Although these findings suggest that mating-related biases operate, it is worth contextualizing them in the broader literature and particularly considering how they play out when other factors present in the organizational context are incorporated conceptually. Other studies that investigated the role of target and participant gender in attractiveness discrimination found that instrumental goals typical to organizational contexts (cooperative versus competitive work arrangements) overshadow any bias driven by mating preferences, as evidenced by the fact that decision makers discriminated both in favor of and against attractive targets of either gender, depending on whether they were expected to be collaborators or competitors (Agthe et al., 2011; Buunk, Zurriaga, Gonzalez-Navarro, & Monzani, 2016; Lee et al., 2015), and that this effect was mediated by perceived competence (Lee et al., 2015). Thus, taken together, this body of work seemingly provides not only evidence for taste-based discrimination when instrumental goals are less relevant (Agthe et al., 2011; Agthe et al., 2016; Forsterling et al., 2007) but also evidence ruling out taste-based discrimination when participants are working toward instrumental goals (Agthe et al., 2011; Buunk et al., 2016; Lee et al., 2015). In addition, these studies yield results potentially ruling in statistical discrimination when the role of actors' instrumental goals (as revealed through different contextual factors) and evidence of the role of competence perceptions of the attractive are considered (Lee et al., 2015). We additionally examine how broad trends in the literature speak to the importance of mating motives or generalized attractiveness favoritism relative to the importance of statistical discrimination driven by instrumental concerns.

As noted earlier, one of the defining features of mating-driven attractiveness dynamics is that they differentially matter for and impact men versus women. Because the association between beauty and reproductive potential is stronger for females than males (Hume & Montgomerie, 2001; Manning, Koukourakis, & Brodie, 1997), reproductive models of the attractiveness advantage suggest that beauty should afford greater benefits to females. This means that attractiveness favoritism should be stronger in relation to women than in relation to men. However, our demand-side review suggests, if anything, a stronger positive effect of attractiveness on workplace outcomes for male than female targets. Thus, attractive males enjoy greater benefits than unattractive males than attractive females do when compared with unattractive females. This finding contrasts the conclusion of many previous studies focusing on mating motivation as the key explanation for bias in favor of the attractive.

Although we cannot rule out a general attractiveness favoritism and, thus, taste-based explanation for this phenomenon, we may be able to better understand this gender difference through the lens of statistical discrimination. Indeed, a meta-analysis by Jackson, Hunter, and Hodge (1995) found that positive competence stereotypes of attractive people are stronger for men than for women. This is likely because characteristics that signal higher status (such as maleness and attractiveness) and thus higher competence (Meeker & Weitzel-O'Neill, 1977; Webster & Driskell, 1983) are expected to interact and amplify the preference for individuals who possess more (versus fewer) of these characteristics. Thus, if decision makers are using instrumentality concerns to choose the most qualified candidate for a position, promotion, or salary raise, attractiveness is likely to have a stronger effect on perceived competence for men than women, perhaps providing an explanation for the relatively greater premium given to attractive men versus attractive women. This competence-based explanation, as compared with

one highlighting mating motives, better fits the pattern of results of past studies and allows us to rule in the possibility of statistical discrimination as an explanation for this phenomenon.

In addition to gender differences, organizationally relevant contextual features of demand-side studies further allow us to gauge whether evidence exists for taste-based (in this case, generalized preference for attractive individuals) and/or statistical discrimination processes in shaping attractiveness discrimination. We consider the role of two features, the influence of gender and task-type combinations, and the presence (versus absence) of job-relevant information, on the magnitude of the advantage. First, differences in the size of the attractiveness advantage for various combinations of target gender and task type indicate that participants are actively making use of existing mental models to determine which target represents the best fit (in terms of perceived ability and future performance) for a specific position. The strongest effect of attractiveness for male targets seems to be when they are considered for masculine positions, as compared with females in masculine, feminine, or neutral positions.

These conclusions are consistent with earlier research which suggests that attractive women are discriminated against when they are not seen as fit for certain jobs, such as management positions (Heilman & Saruwatari, 1979; Heilman & Stopeck, 1985), directors of security (Johnson, Podratz, Dipboye, & Gibbons, 2010), or construction workers (Johnson et al., 2014). In addition, both men and women are discriminated against when seen as a personal threat to decision makers' individual goals (e.g., Agthe et al., 2011; Buunk et al., 2016; Lee et al., 2015), and evaluators are weary of attractive individuals when they are evaluating candidates for less desirable jobs because of a concern that such individuals may aspire to more (Lee et al., 2018). Together, we do not observe uniform bias in favor of the attractive, which would predict a systematic preference for attractive individuals regardless of the specific requirements of a position for which the person is being considered or evaluated. This observation rules out the possibility that observed attractiveness discrimination arises as a result of a generalized favoritism for attractive individuals. Instead, we see the attractive given preferential treatment only when they are perceived as particularly instrumental. This suggests that decision makers are relying on perceptions related to how well-suited attractive individuals are expected to be for specific work positions and favor the attractive only when these perceived qualities fit the requirements of such positions, a process corresponding to statistical discrimination.

In addition, we examined the influence the availability of job-relevant information has on attractiveness discrimination. We focused on this contextual feature as a decrease in the size of the effect in the presence of job-relevant information would indicate that participants are using attractiveness as a cue for competence, which then wanes in importance when more relevant competence information is provided (a pattern that could not be explained by taste-based models alone). We find that the magnitude of the attractiveness effect is lower in studies with high (e.g., information regarding GPA or past work experience) than low (e.g., information on participants' hobbies) job-relevant information. This finding is also consistent with the results of studies that directly manipulate the amount of relevant information available to decisionmakers and measure its effect on the observed magnitude of the attractiveness advantage (Hart, Ottati, & Krundick, 2011; Lev-On & Waismel-Manor, 2016). Jointly, these findings suggest the primacy of instrumental motives and the importance of organizational context features in shaping the attractiveness advantage. Statistical discrimination processes thus seem to more effectively explain the different broad conceptually relevant trends in the literature, and also seem to overshadow processes driven by mating-related or generalized preference for the attractive (which would constitute taste-based discrimination) when situations in which the two are directly juxtaposed are examined (as in conditions of interdependence between organizational actors, gender-typed jobs, etc.).

This analysis highlights the relevance of organizational context features in understanding the nature of attractiveness discrimination and its relevance for the domain of work and organizations. At the same time, we highlight the relative lack of focus on organizational context features in studies on attractiveness discrimination. Studies in this literature rarely include any richer stimuli such as letters of recommendation (Nicklin & Roch, 2008), information regarding past work performance (Chung & Leung, 1988; Drogosz & Levy, 1996; Lee et al., 2018), or the target's self-description (Green, Cunningham, & Yanico, 1986; Jackson, 1983a) (see Paradise, Conway, and Zweig [1986] and Brooks, Huang, Kearney, and Murray [2014], for exceptions). Although these decontextualized methods are used to ensure experimental control, they require participants to extrapolate job-relevant skills from the limited information available, potentially artificially inflating the relevance of this factor and leading to unrealistically large estimates of attractiveness effects (Rubinstein, Jussim, & Stevens, 2018). Perhaps, for this reason, past scholars have characterized the observed demand-side effects as taste-based discrimination. Specifically, as typically little information other than a candidate's looks is available to decision makers in these studies, it is difficult to conclude that the results stemming from these decontextualized methods are based on anything but an irrational preference for attractiveness.

It is important to note that the literature on attractiveness discrimination has always claimed that attractiveness engenders higher perceptions of competence, which in part drives favoritism. The novel point in our interpretation of the literature is that the common view of attractiveness discrimination as a strict case of taste-based

discrimination should be questioned in light of the relatively weak evidence for the importance of such processes in shaping achievement gaps in organizationally relevant contexts, as well as the relatively strong evidence that such processes are driven by statistical discrimination. Given this conclusion, we turn to the question of whether attractiveness-based statistical discrimination is justified, given what we know about the value that more versus less attractive people bring to the domain of work and organizations, completing our reexamination of the attractiveness advantage.

ATTRACTIVENESS ADVANTAGE: A REVIEW OF STUDIES ON SUPPLY-SIDE FACTORS

Employees' Contributions to Organizations: Human and Social Capital

Organizations benefit both from the technical skills and professional track record a person brings to their position, as well as from an individual's ability to build social connections, effectively present new ideas, and persuade his/her colleagues. We thus conceptualize an employee's perceived value to the organization as both human (Coff, 2002) and social (Coleman, 1988) capital. By doing so, we aim to (1) provide a holistic view of the relationship between attractiveness and these key work-relevant resources and (2) compare the strength of the associations between attractiveness and each type of resource, given their different implications for understanding and managing the attractiveness advantage.

Human and social capital. Human capital is defined as "the knowledge, skills, competences and other attributes embodied in individuals that are relevant to economic activity" (Keeley & Organisation for Economic Co-operation and Development, 2007, p. 9). In other words, human capital describes the sum of technical knowledge and skills that contribute to job performance. Often, human capital refers to educational levels and training certifications, characteristics that reflect objective levels of skill attainment. Social capital refers to the social interactions in which individuals engage, including the relationships they foster, the networks they build, and the trust they generate within their social connections (Coleman, 1988). In organizations, social capital facilitates information exchange, builds centers of influence and control, and promotes solidarity (Adler & Kwon, 2002). Considering the work-related benefits of human and social capital, it is not surprising that both forms of capital are valued in the workplace, represent legitimate criteria in selection and promotion decisions, and thus constitute bases of socioeconomic achievement considered meritocratic.

These work-relevant resources (i.e., human and social capital) are pertinent to our review because, if physical attractiveness is found to correlate with characteristics indicating high human or social capital, organizations that give these individuals preferential treatment may not be considered to act in a biased manner. If the attractive possess greater work-relevant resources, then their preferential treatment within organizations could potentially be justified on the basis of meritocracy and legitimate profit maximization. Conversely, if no association exists between physical attractiveness and human or social capital, then less attractive workers are likely discriminated against unfairly. In addition, organizations are forfeiting valuable work-relevant resources by paying premiums based on a characteristic that does not add to organizational productivity.

The reinforcing nature of human and social capital. Human and social capital reinforce one another, creating a virtuous cycle of capital for those who are afforded the tools to jumpstart and sustain this process. Social capital can influence the acquisition of human capital in several ways. For example, strong ties, which provide children with support and encouragement on the part of key socializing agents during their development, translate into greater human capital (Breslow, 2012; Coleman, 1988). In addition, as individuals age and enter the workforce, high social capital can provide access to social contexts that allow them to further increase their human capital, such as elite universities and organizations (Schuller, 2001). Last, social capital has been shown to affect both physical (Kawachi, Kennedy, & Glass, 1999; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997) and psychological health (Giordano & Lindstrom, 2010), a part of human capital that is increasingly recognized as one of great importance (Becker, 2007). Thus, social capital is instrumental in the creation of human capital from early childhood into adulthood.

Human capital similarly plays a vital role in the creation of social capital. Social capital is dependent on individuals actively participating in different domains of life (Schuller, 2001). However, access to many of those domains is possible only above a certain skill or education threshold. For example, access to higher education generally requires proof of a certain level of academic competency (i.e., human capital). Only after providing evidence of this can individuals take advantage of the networking opportunities available in such institutions that can be used to acquire greater social capital. In addition, human capital provides employment stability, which creates greater opportunity for individuals to build ties with their colleagues and bolster their social networks (Cairo & Cajner, 2018). The mutually reinforcing effect of these factors on each other implies that even small

differences in either kind of capital during childhood can compound across the life span to create larger, more observable differences in capital during adulthood.

Given the relationships between human and social capital and favorable workplace outcomes, we turn now to a review of the empirical associations between attractiveness and these two types of capital. We first review published meta-analyses of relationships between attractiveness and different forms of human and social capital. These provide a high-level overview of human and social capital advantages that attractive workers might bring to organizations, which may speak to the potential justifiability of attractiveness-based statistical discrimination processes. We then turn to studies, mostly in economics research, that simultaneously examined how attractiveness and human and social capital shape earnings to provide further insight into the role of these factors in the attractiveness advantage, and thus its nature and justifiability. Figure 2 summarizes the described relationships among attractiveness, capital factors, and productivity.

Review of Meta-Analyses of the Relationship between Attractiveness and Human and Social Capital

Through a comprehensive literature search, we found seven meta-analyses concerned with associations between physical attractiveness and measured human and social capital traits (e.g., physical health, intelligence, and sociability), with a total sample size of 90,247 and 678 effect sizes (see Appendix B for a list of supply-side studies). Although there was some overlap, the individual studies included in each of these analyses were fairly differentiated, with 62.1 percent of studies appearing in only one meta-analysis and only 19 articles appearing in more than two meta-analyses. Table 3 illustrates key characteristics of each supply-side analysis. In six of seven meta-analyses, attractiveness ratings of target persons were reported by third-party raters, and in one meta-analysis, target persons rated their own perceived attractiveness levels (Feingold, 1992; Study 2b).

A broad range of human and social capital factors are covered in the included studies. Human capital factors reflect measured effect sizes pertaining to mental and physical health, intelligence/intellectual competence, and academic achievement (i.e., GPA or grade average). Social capital factors included proxies of factors known to be major positive contributors to social capital (i.e., self-confidence, self-esteem, dominance, freedom from general social anxiety, social skills, popularity, sociability, narcissism, and extraversion; Bergman, Ferrington, Davenport, & Bergman, 2011; DeSilva, McKenzie, Harpham, & Huttly, 2005; Glaeser, Laibson, & Sacerdote, 2002; Hawley, 1999; Lin, 1999; McIntosh, 1991; Okun, Pugliese, & Rook, 2007; Scheufele & Shah, 2000).

We aggregated the findings across all seven meta-analyses (weighting each effect size by its inverse variance; Lipsey & Wilson, 2001). We find that physical attractiveness exhibits positive relationships with both human and social capital, with the average weighted effect across meta-analyses on social capital variables being larger than that on human capital variables ($r = 0.21$ versus $r = 0.05$) (see Figure 3). There are positive correlations (ranging from $r = 0.02$ to $r = 0.23$) between physical attractiveness and four of five human capital traits studied (i.e., mental health, physical health, intellectual competence, and intelligence) and positive correlations (ranging from $r = 0.06$ to $r = 0.32$) between physical attractiveness and all studied social capital variables, as reported by at least one meta-analysis. All of these correlations are statistically significant at conventional levels. Focusing on effect sizes (Cohen, 1977), better-looking people seem to possess a slight advantage in human and a small but notable advantage in social capital, compared with less attractive people. These results suggest that, if decisionmakers are assuming higher competence of attractive individuals to justify their preferential treatment (i.e., statistical discrimination), then such preferential treatment may be, at times, warranted because of the observed positive correlations between attractiveness and these work-relevant resources.

Past research on determinants of organizational productivity help contextualize the notable relationship between attractiveness and social capital in terms of how it may matter for organizational efficiency, and thus reflect instrumental motives underlying statistical discrimination. This effect compares with that of, for example, years of job experience on performance, a criterion estimated to lead to a 6 percent increase in job performance per person per year (Schmidt & Hunter, 1998). Therefore, given the positive correlations between attractiveness and social capital factors, hiring attractive (versus unattractive) employees can potentially increase an organization's productivity as much as is expected to occur when employers use past job experience in guiding selection decisions, a strategy widely practiced and considered meritocratic. In addition, the strength of the association we find between attractiveness and social capital ($r = 0.21$) is roughly equivalent to that reported between socioeconomic status and social capital (r 's between 0.18 and 0.26; Brophy-Herb, Lee, Nievar, & Stollak, 2007; James, 2000). Given this, it is likely that the capital differences between the attractive and the unattractive contribute to generating social advantages, comparable to how supply-side differences are believed to be a major driver of inequality reproduction as a function of social class differences (Dickerson & Popli, 2016; Kawachi et al., 1997; Mani, Mullainathan,

Shafir, & Zhao, 2013; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007; Turkheimer, Haley, Waldron, D'Onofrio, & Gottesman, 2003).

Studies Examining the Role of Capital Factors and Productivity in the Attractiveness Advantage

Meta-analyses concerning average relationships between attractiveness and human and social capital are informative because they suggest potential differential value of more versus less attractive workers to organizations, and thus potential justifiability of statistical discrimination based on attractiveness. An additional body of work further speaks to the question of whether such human and social capital differences indeed explain the attractiveness advantage. These studies come mostly from economics research and generally use large survey datasets (Berri, Simmons, Van Gilder, & O'Neil, 2011; Converse, Thackray, Piccone, Sudduth, Tocci, & Miloslavich, 2016; Hamermesh & Biddle, 1994; Judge, Hurst, & Simon, 2009; Kanazawa & Still, 2017) or experimentally recreated labor markets (Graham, Harvey, & Puri, 2016; Mobius & Rosenblat, 2006) to understand potential supply-side causes of the attractiveness advantage. Research in this domain has used two general strategies to argue that the attractiveness gap in earnings is at least partly unrelated to the value of the worker to the employer, and thus represents unmeritocratic taste-based discrimination. First, some research has used the same strategy used earlier, focusing on human and social capital factors, given that they constitute a broad approach to conceptualizing and operationalizing resources relevant to work success. These studies then include such factors as controls to gauge whether the attractiveness earnings premium persists, which is often interpreted as supporting the view that additional awards are allocated to the attractive based on performance-unrelated (unmeritocratic) criteria. The second strategy is a more direct and comprehensive form of the first strategy, aiming to control for performance directly (when such data are available), as opposed to controlling human and social capital as predictors of performance. We evaluate evidence provided by each study type with regard to the strength of evidence for taste-based discrimination.

Typical studies using the first strategy draw on large survey datasets containing information on earnings, attractiveness (usually rated by the interviewer), and proxies of human, and, in some cases, social capital of the respondent. For example, Hamermesh and Biddle (1994) analyzed three large household surveys from North America and found evidence of the attractiveness earnings advantage. Across one or more datasets, the authors extracted data on capital proxies such as educational attainment, self-reported health status, labor market experience, tenure with the firm, whether the respondent is perceived as highly intelligent by the interviewer, and a crude measure of self-esteem. To gauge whether bias or taste-based discrimination might be at play, the approach in this article and other similar investigations (e.g., Berri et al., 2011; Converse et al., 2016; Hamermesh & Biddle, 1994; Judge et al., 2009; Kanazawa & Still, 2017) is to include the proxies of human and social capital as control variables, and if the effect of attractiveness holds when these are controlled for, to conclude that the “remaining” effect of attractiveness is unrelated to human and social capital, and thus likely not based on the value of the worker to the organization. However, interpreting the coefficient of attractiveness net of these controls is very difficult as various aspects of human and social capital cannot be observed. In addition, even the aspects of human and social capital that are examined are generally proxied by crude measures with unknown construct validity. Discussing this specific problem, Bertrand and Duflo (2017) note that in research designs of this sort, in trying to gauge statistical versus taste-based discrimination, “The traditional answer has been to saturate the regression with as many productivity relevant, individual-level characteristics as are available. But, of course, ensuring that the researcher observes all that the decision-maker observes is a hopeless task” (p.315). Thus, the strategy to estimate an effect of attractiveness net of controls is limited by the impossible challenge of obtaining perfect operationalizations of each relevant human and social capital proxy. In addition to this general issue, we further emphasize that, in particular, social capital variables, which based on our aforementioned review might in part explain the attractiveness advantage, are only sometimes included in these investigations (Berri et al., 2011; Hamermesh & Biddle, 1994; Mobius & Rosenblat, 2006), and at least one study found that when a more comprehensive set of controls (relative to past investigations) were included in typical datasets used to study sources of the attractiveness advantage (e.g., health and personality), the remaining effect of attractiveness net of controls became statistically indistinguishable from zero (Kanazawa & Still, 2017).

A set of studies tried to get around the challenge of measuring all potentially relevant human and social capital factors that might matter for worker productivity (and thus attempting to control out the part of the attractiveness advantage that might be justified) by focusing on direct proxies of productivity when controlling for the effect of attractiveness on earnings. The logic of this approach is to circumvent the challenge of adequately measuring all the factors that contribute to worker productivity by measuring worker productivity directly. For example, Berri et al. (2011) study National Football League quarterbacks and conclude that “a better-looking quarterback generates a substantial salary premium over an equivalent worse looking player, purely for his physical

attractiveness and regardless of his observed performance and characteristics” (p. 201). Similarly, Mobius and Rosenblat (2006) constructed an artificial experimental labor market whereby participants in the role of “employers” determined wages of “employees.” The labor market focused on a maze-solving task, and authors find that more attractive employees perform no better at the task but do earn higher wages because they are more confident, considered as more competent by employers, and have higher social skills, all aiding in wage negotiations. Based on these demonstrations of the attractiveness advantage dissociated from productivity differences, researchers typically argue that taste-based processes unrelated to merit likely operate (and, in fact, such biased processes are usually highlighted as the primary drivers of the attractiveness advantage). For example, Mobius and Rosenblat (2006) describe the attractiveness wage advantage as “discriminatory pay differentials” (implying pay differences are not merit based).

The main limitation of studies claiming to demonstrate taste-based discrimination based on the finding that the attractiveness premium persists controlling for an objective performance proxy (as in the case of quarterbacks), or despite no performance differences (as in the case of the maze-solving task), is that such findings are obtained from highly specific contexts and might thus likely have very limited generalizability with regard to the nature of attractiveness in the context of most domains of work. For example, the highly specific maze-solving task used in Mobius and Rosenblat (2006) required little by way of social skills (unlike many real-world jobs), and even general human capital differences such as education (which may be correlated with attractiveness) were of little use in terms of task performance. As such, the design of the study might have suppressed the relevance of any human and capital differences associated with attractiveness in how performance was operationalized. Even so, the earnings advantage extracted by the attractive in Mobius and Rosenblat (2006) was based on supply-side factors in the form of social capital (self confidence and negotiation skill) that would be of value in most work contexts, making decision makers’ impressions of higher competence of attractive workers understandable. Similarly, in the case of the study of quarterbacks (Berri et al., 2011), better-looking quarterbacks might also have, for instance, higher social capital in the form of interpersonal skills and confidence, which afford them an advantage in salary negotiations (this would be expected both based on our review of supply-side meta-analyses as well as findings by Mobius & Rosenblat [2006]). However, obtaining earnings advantages through skilled negotiation with one’s employer is not a bias but rather a common and accepted practice, promoted by business education as a valuable skill and taught to MBA students across the world. It is difficult to label earnings advantages based on such work-related skill a bias.

Thus, both approaches of examining the sources of attractiveness earnings gaps in economics face methodological challenges that limit their ability to evaluate the extent of taste-based versus statistical discrimination in the phenomenon. Our analysis of these problems is also conservative, as various other relevant unobservables might operate. For example, more attractive workers, because of their higher social capital, might be more effective as team members and team leaders even if they have no advantages in individual performance on technical tasks. Better looking quarterbacks might have higher marketing value and might, thus, be worth more to the firm even if their athletic performance is the same. Indeed, there is evidence of labor market sorting and self-selection processes that result in attractive employees finding jobs in which worker attractiveness itself has marketing benefits (e.g., a fashion model) (Biddle & Hamermesh, 1998; Hamermesh & Biddle, 1994; Wilson & Sherrell, 1993), a process that again seems to be driven primarily by instrumental considerations concerning worker attractiveness as opposed to bias.

To conclude our analysis of the economics literature on attractiveness and earnings gaps, it is useful to compare the difficulty of establishing clear evidence of taste-based discrimination with the ease of establishing the role of statistical discrimination. Most claims of the attractiveness advantage representing a bias not justified by performance differences are open to strong alternative interpretations of the findings as statistical discrimination. In virtually all studies in this line of work, attractive individuals are shown to have higher work-relevant resources (Converse et al., 2016; Hamermesh & Biddle, 1994; Judge et al., 2009; Kanazawa & Still, 2017; Mobius & Rosenblat, 2006). The fact that these results, providing evidence for a process of statistical discrimination, are rarely the focus of studies and often not even discussed is indicative of the dominant interest in the literature in detecting taste-based discrimination. For the most part, researchers take for granted that attractive people have higher work relevant resources, treat them as control variables, the influence of which is to be excluded, and focus on examining whether any association between attractiveness and earnings is left as it might constitute a performance-unrelated bias. Only rarely do researchers position human and social capital factors as explanations for the positive relationship between attractiveness and organizational productivity and consider these important work-related competence gaps interesting in themselves (e.g., Converse et al., 2016; Judge et al., 2009). In sum, studies on attractiveness, performance differences, and earnings yield evidence that is, in our view, rarely strong enough to claim that taste-based discrimination is at play, although they almost invariably provide evidence that statistical discrimination does play a role. To summarize the conclusions of our review of supply-side findings,

we find that, for different reasons, better-looking people possess a slight advantage in human and a small but notable advantage in social capital, compared with less attractive people. We also find that studies attempting to evaluate whether there is an attractiveness advantage over and above that explained by human and social capital differences cannot exclude the possibility that higher earnings of more attractive people were based on merit. Even such studies that claim taste-based discrimination reliably find that attractiveness is associated with proxies of human and social capital. Recall that it was relevant to examine whether attractive people possess higher human and social capital because, if attractive people were no higher in these forms of capital, then the attractiveness advantage would constitute a clear case of taste-based discrimination. However, because we find positive correlations between attractiveness and human and social capital factors, it is possible that attractive people, to some, and possibly a large extent, earn their premium, and studies analyzing earnings data cannot convincingly rule out this interpretation.

INTEGRATIVE VIEW OF THE ATTRACTIVENESS ADVANTAGE AND AGENDA FOR FUTURE RESEARCH

The dominant view of the attractiveness advantage is one of taste-based discrimination, with decision makers unfairly disadvantaging less attractive workers by allocating better outcomes to more attractive but otherwise equally qualified workers. The practical implication of this view is that decisionmakers' favoritism of attractive workers constitutes prejudice and should be regulated through public policy and organizational interventions to mitigate unfair treatment and increase the efficiency of organizational reward allocation (by tying rewards more closely to performance, rather than physical appearance). Our integration of the literatures on relevant demand-side factors (third-party discriminatory treatment) and supply-side factors (concerning how attractiveness is correlated with work-relevant resources) provides a more complete view of how the attractiveness advantage is generated and its ultimate nature. Our review of demand-side research suggests that attractiveness discrimination, particularly in the context of work and organizational decision-making, can also be seen as a case of statistical discrimination, with decision makers in many cases discriminating on the basis of attractiveness because they believe that attractive people are more competent. Decision makers in these studies seem driven by instrumental motives (maximizing future worker performance or even their own outcomes) rather than irrational bias in favor of attractive people. Competence-related attractiveness perceptions and the associated decisions maximizing instrumentality seem to readily overshadow attractiveness biases stemming from sexual preferences or generalized preference for the attractive.

Our review of the supply-side literature examines the validity of decision makers' assumptions concerning attractiveness as a correlate of worker ability to examine whether the documented statistical discrimination is based on accurate or inaccurate competence inferences and is thus meritocratic or unmeritocratic. We find that workers differing in attractiveness do vary in their work-relevant resources, or human and social capital. On average, better-looking people possess a slight advantage in human and a small but notable advantage in social capital, compared with less attractive people. We find that studies attempting to evaluate whether there is an attractiveness advantage over and above that explained by such human and social capital differences cannot exclude the possibility that higher earnings of more attractive people were based on merit, and even such studies regularly find that attractiveness is associated with proxies of human and social capital.

This perspective raises a series of important questions for future research that will be essential in determining the nature and justifiability of the attractiveness advantage, and thus the most appropriate responses by organizations and policymakers. The fact that attractive people seem to bring notably higher social capital to organizations makes it more challenging than previously thought to ascertain whether and to what extent the attractiveness advantage represents a violation of current societal views regarding meritocratic reward allocation. What does seem certain is that the attractiveness advantage is at least in part a result of complex social processes that generate real social and at times even human capital differences as a function of attractiveness. These differences are translated into achievement gaps through, at least in part, statistical discrimination enacted by decisionmakers acting on instrumental motives. We present a framework for the generation of the attractiveness advantage in Figure 4.

This novel view of the attractiveness advantage does not disprove the existence of prejudicial favoritism (taste-based discrimination) of attractive people nor the possibility that the process by which human and social capital differences as a function of attractiveness are generated are unfair and inefficient. Rather, our interpretation warns that the empirical support for taken-for-granted assumptions about taste-based discrimination being the most relevant process generating the attractiveness advantage across several disciplines, including organizational behavior (Jawahar & Mattsson, 2005; Johnson et al., 2014; Ruffle & Shtudiner, 2015), psychology (Brooks et al., 2014; Forsterling et al., 2007; White, Kenrick, & Neuberg, 2013), and economics (Berri et al., 2011; Hamermesh

& Biddle, 1994; Mobius & Rosenblat, 2006), can be questioned in light of the evidence of the primacy of competence impressions, instrumental motives, and statistical discrimination in explaining attractiveness discrimination, particularly when relevant features of the organizational context are incorporated. Our review thus suggests that simple explanations for and approaches to studying the attractiveness advantage will not suffice in addressing the question of social justice and organizational efficiency related to this employee characteristic. Rather, a comprehensive cross-disciplinary approach examining supply- as well as demand-side factors is needed to understand how the attractiveness advantage is generated in the domain of work and organizations, contributing influences from domains outside of work, and whether and how each should be managed. We outline key directions for such research in the penultimate section.

Before that, we turn to the question of how, at present, research can uncover bias (in terms of fairness and efficiency of allocation of organizational rewards) in attractiveness discrimination. Unfortunately, the current state of evidence, marred by numerous open questions regarding the nature and sources of the attractiveness advantage, provides little basis for informed organizational action or social policies to address these concerns or even determine whether they are warranted with respect to dominant notions of merit. This suggests that the anti-lookism legislation that is being sporadically implemented (Chopin & Germaine, 2017; Office of Human Rights, 2019; Santa Cruz Municipal Code, 2019; Victorian Equal Opportunity & Human Rights, 2020) might operate on untested assumptions rather than evidence. Thus, in the short run, it is worth producing a more conclusive picture of when attractiveness discrimination represents a bias (i.e., is unfair and unmeritocratic), and we elaborate on a research agenda required to accomplish that goal in the following section. In the longer run, a more detailed program of research is needed to determine deeper causes of competence gaps as a function of attractiveness, the role of different agents, including organizations, in the phenomenon, and finally how these supply-side factors impact key processes in the domain of work and organizations to generate the attractiveness advantage. As we detail in the final discussion section, attractiveness researchers can learn from existing research on achievement gaps of other social groups, most notably women, racial minorities, and workers from lower class backgrounds. We believe the reverse to also be true, and discuss lessons researchers of other types of discrimination can draw from research on the attractiveness advantage and the current review.

Implications for Establishing and Managing Bias in Attractiveness Discrimination

Our review suggests that the prevalent assumption, permeating the different scientific disciplines studying attractiveness as well as public discourse and policy decisions, that discrimination in favor of attractive workers represents a bias, is in many cases not justified. To address concerns of social justice and efficiency of organizational reward allocations, it is necessary to detect with greater precision and in a more conclusive manner when such bias in attractiveness discrimination might occur. Statistical discrimination based on attractiveness will in many individual cases not be justified based on merit. This is because, although the attractive on average possess greater work-relevant resources, these resources may not always be needed to adequately perform. For example, when work tasks do not require the use of social skills, such as in Mobius and Rosenblat's (2006) study, the higher social capital the attractive, on average, possess is unlikely to translate into greater productivity. In this regard, using attractiveness as a cue of competence is different from the example of intelligence used earlier. The correlation between intelligence and worker productivity is both better documented (recall that most evidence potentially justifying statistical discrimination based on attractiveness resides in the domain of capital as opposed to worker productivity directly) and, likely, stronger than is the relationship between attractiveness and worker productivity. This means that there are many more cases in which it will not be justified to favor more attractive workers based on higher expected performance than cases in which it is not justified to favor more intelligent workers based on higher expected performance. We discuss research needed to uncover such cases.

More research is needed on the association between attractiveness and productivity to establish when and why discriminating based on this characteristic may be justified by performance maximization goals. Going back to the intelligence example, there is much research linking intelligence and productivity (Furnam, 2008; Hunter & Schmidt, 1983; Ones, Viswesvaran, & Dilchert, 2005). Although associations between attractiveness and human and particularly social capital suggest that attractiveness should similarly translate into greater productivity, more research is necessary to establish whether and when that is the case. Only a handful of studies have documented the association between attractiveness and more tangible workplace outcomes, such as productivity (Fidrmuc & Paphawasit, 2018), and performance (DeGroot & Motowidlo, 1999; Ross & Ferris, 1981). More extensive investigations are needed to establish whether the attractiveness advantages in human and social capital are easily converted into increased organizational output. It is possible that the attractive do not readily use their higher human and social capital for organizational goals but instead their personal goals. Research is warranted on such

core relationships between attractiveness and task as well as contextual performance, which will help establish whether and when attractiveness discrimination is justified by performance maximization goals.

More research is also needed not just on specific work-related advantages associated with attractiveness but also on the extent to which decisionmakers' assumptions concerning attractiveness competence advantages impacting attractiveness discrimination are accurate. Past research tended to assume that stereotypes that attractive people are more competent represent a bias. Our review highlights that in many situations this is not the case. However, as illustrated by the earlier example of inaccurate stereotypes of attractive people being more moral (Dion et al., 1972; Efran, 1974; Feingold, 1992; Langlois et al., 2000), it is quite possible that many assumptions about attractiveness and competence that produce the attractiveness advantage are not accurate, rendering such discrimination, although statistical, nevertheless biased and unjustifiable. Implicitly viewing stereotypes as unfounded, past research has not investigated the accuracy of the different stereotypes people hold regarding attractiveness and competence. However, it is possible to detect conceptions of attractiveness and competence that may be widely shared but inaccurate. Such a map of inaccurate attractiveness competence stereotypes would point to key organizational situations in which attractiveness discrimination is unfair and requires attention of policymakers and organizational decision makers.

A stronger focus on organizational situations more generally is needed in research on when and why attractiveness discrimination is unfair. As noted in our review of demand-side studies, most research used context-poor designs that make generalizing to organizational situations difficult. We found that such impoverished contexts lead to overestimates of the role of attractiveness in work-related decisions, as indicated by the fact that, when more information is included (e.g., candidate track record), the effect of attractiveness tends to decrease. Incorporating relevant features of the organizational context is also important not just to ensure more accurate estimates of the magnitude of attractiveness discrimination but also its nature. As we saw in our review of demand-side studies, the meaning of attractiveness to decision makers as well as their ultimate responses to these perceptions can vary drastically as a function of features of the organizational context, such as job type or the type of workplace interdependence (Agthe et al., 2011; Buunk et al., 2016; Heilman & Saruwatari, 1979; Heilman & Stopeck, 1985; Lee et al., 2015).

Thus, it will be essential to incorporate conceptually and empirically the relevant organizational features in future research seeking to provide recommendations for different key organizational situations in which attractiveness discrimination may represent a bias and may need to be regulated. This recommendation applies to experimental research, which constitutes most of the studies on demand-side processes, but we also believe that more field studies are needed. Detecting discrimination in the field introduces a host of additional challenges (Bertrand & Duflo, 2017), but given the documented key importance of organizational concerns, constraints, incentives, and social structures, in shaping attractiveness discrimination, conclusions based solely on experimental data remain limited to speculative extrapolations.

The most general but perhaps the most important direction for future research aimed at detecting attractiveness biases is to leverage an integrative, cross-disciplinary approach, as we attempted in our review. Consider, for instance, demand-side research on gender differences in attractiveness-based biases (Heilman & Saruwatari, 1979; Heilman & Stopeck, 1985; Johnson et al., 2014). There are dozens of articles trying to explain gender differences in attractiveness discrimination, using mostly experimental approaches in the laboratory, with limited external validity. This research rarely mentions labor market data to argue that there is a gender discrepancy in the attractiveness advantage to be explained in the first place (we located no such references). Our review suggests that, although one can find some gender differences (particularly within specific contexts), the attractiveness advantage is more similar than it is different for men and women (Langlois et al., 2000). As suggested by this example, demand-side studies can benefit greatly from an integrative approach whereby research questions are motivated by evidence of potential bias or inefficiency in the real world (e.g., notable earnings inequalities) as opposed to assuming that context-poor laboratory findings readily generalize to the much more complex real world.

Toward a Comprehensive Understanding of the Attractiveness Advantage: Key Future Directions

Our review suggests that it is possible that most past organizational research, due to an (unverified) assumption of attractiveness discrimination as a case of taste-based discrimination, tried to detect and fix bias among organizational decision makers. At the same time, reasons why attractive workers are treated better (as well as worse) are more complex and might stem from processes largely unrelated to organizations, organizational decision makers, or their bias. Thus, in addition to more sophisticated and conclusive methods to detecting bias in attractiveness discrimination, as outlined earlier, the next wave of attractiveness research needs to also tackle the more difficult question of where such differences in social capital come from and whether they themselves can be

considered legitimate or whether they stem from a bias. The ideal outcome coming from such a holistic investigation of the origins of the attractiveness advantage is a detailed map of how it is generated and how the different processes underlying it are aligned with social conceptions of justice. Such a map would provide a true basis for informed and targeted social action to ensure equality of opportunity.

Our finding that supply-side attractiveness advantages reside primarily in the domain of social rather than human capital suggests that these differences may be both generated and attenuated through social dynamics. More research on both fronts is needed. As noted earlier, social capital factors are more strongly shaped by contextual factors and social interactions than are factors such as intelligence (although psychological and social context matters even for such factors; Blackwell, Trzesniewski, & Dweck, 2007; Haimovitz & Dweck, 2016; Mueller & Dweck, 1998). We proposed a framework for how these differences are generated (Figure 4), but more research is needed to understand key factors contributing to social and human capital differences, as well as whether they themselves are biased. Our review also calls for more cross-disciplinary research on the attractiveness advantage as many of the documented supply-side differences in attractiveness (which may partly drive and even give reason for the use of attractiveness in decision-making) may arise outside of the domain of work and organizations (in which achievement gaps are generated), for example, during early socialization and education.

Most notably, research is warranted tracking the development of attractiveness, human and social capital proxies, productivity, and career success over longer periods of time. Ideally, researchers would follow a larger cohort naturally varying in attractiveness, and use comprehensive measures longitudinally capturing ability and different forms of capital throughout schooling and early-stage career. Such a design would allow scholars to gauge how early differences in human and social capital arise as well as the extent to which they are developed and amplified during formal schooling. It is possible that the social capital advantage of attractive employees is generated through continuous preferential treatment in the educational system. If so, trying to fix “bias” among organizational decision makers would be of limited impact, and, in some cases, might even violate dominant notions of merit and fairness.

Cross-disciplinary research is also needed to examine influences on work-related processes and outcomes from domains of life that concurrently exhibit influences on work (in addition to socialization influences described earlier), and in which attractiveness also plays a role, most notably the domains of the mating market, partner selection, and, finally, home–work interdependence. Given its evolutionary, mating-related roots, attractiveness tends to provide a notable advantage in the mating market (Feingold, 1988; McClintock, 2014). Thus, attractive workers might enjoy a particular advantage in the mating domain, with potential spillovers to the work domain that might constitute another pathway underlying the attractiveness advantage. The work–home resource model suggests that significant others provide social support (e.g., advice and instrumental help) in the home that can translate to the workplace (ten Brummelhuis & Bakker, 2012). Significant others who transmit skills, network contacts, or information from their professional or personal lives may indirectly influence the workplace outcomes of their partners, and such positive spillovers might systematically favor the attractive. Identifying such concurrent influences from relevant interdependent domains may shed light on sources of differences in human and social capital as a function of attractiveness.

Supply-side differences in work-related resources as a function of attractiveness are likely impacted by social dynamics inside of the organization and not just outside of it. Thus, in addition to a more detailed study of biases in attractiveness discrimination in organizational settings, more research is needed on dynamics that may contribute to human and social capital differences in favor of the attractive. For example, research suggests that attractive employees create more advantageous (i.e., sparse) professional networks, choosing to position themselves in profitable brokerage positions (O’Connor & Gladstone, 2018). In addition, attractive women are able to elicit more frequent and higher quality help from male network contacts (Schwarz & Klumper, 2018). However, beyond these initial investigations, the understanding of potential sources of human and social capital differences as a function of attractiveness is limited, and particularly scarce are studies examining ultimate implications for worker productivity. One likely reason is the current focus on events, such as selection, while ignoring rich everyday workplace activities and interactions that also often shape disadvantage. Chugh and Brief (2008) argue that the literature on inclusion and disadvantage of other social groups similarly suffers from this limited focus on what they call “gateway” events at the expense of the study of everyday workplace dynamics, what they call “pathways,” which might be equally important in shaping achievement gaps and also provide insight into relevant supply-side factors and their origins.

It is further important to attend to factors at different levels, including those related to industry and societal norms, to broaden and deepen the study of the attractiveness advantage. We noted that demand-side research found that industry norms matter and profoundly shape attractiveness discrimination. The same is also true with regard to factors residing at other levels and exerting indirect influence on the phenomenon, such as organizational culture (e.g., more versus less focused on physical attractiveness) or national culture (e.g., concerning norms of sexuality

and public appearance). Looking at our review of the supply-side literature, we note that most reported correlations between attractiveness and capital factors are for combined groups of primarily Caucasian North American or European men and women from a range of ages (Table 3). Because attractiveness may confer benefits of varying magnitude depending on one's race, nationality, gender, or age, the data available in these studies prevent us from drawing conclusions about specific demographic categories as well as generalizing conclusions to a broader set of individuals. Social processes that potentially generate observed supply-side differences likely differ across contexts, limiting generalizability and practical relevance of the attractiveness literature. The relative lack of attention to relevant organizational and social structures in shaping the attractiveness advantage is not surprising, given the micro–macro divide in organizational sciences more generally. Baron and Pfeffer (1994) note that “missing in most of the literature on reward distributions is any attention to the “micro-macro” connections—between social structures, institutions, and organizations, and, cognitions, perceptions, interests, and behaviors at the individual or small-group level” (p. 191). We find this to be true of research on the attractiveness advantage as well and believe that multilevel theoretical and empirical approaches hold much promise in explaining the attractiveness advantage.

Lessons from and for Research on Other (Dis)Advantaged Categories

In this final section, we consider how future research on the attractiveness advantage can benefit from insights from research on reasons underlying achievement gaps of other disadvantaged groups, most notably women, racial minorities, and workers from lower class backgrounds (Laurison & Friedman, 2016; Patten, 2016). Although the outcomes of different types of discrimination appear to be quite similar (i.e., loss of opportunity for certain groups), the paths by which these outcomes occur are often unique. On the supply side, each characteristic tends to exhibit somewhat different correlation patterns with human and social capital factors such that some may be more strongly correlated with human and less with social capital, or show negligible correlations across both factors. On the demand side, the specific expectations of individuals with such traits are likely to differ. For example, attractiveness is associated with goodness (Dion et al., 1972; Eagly et al., 1991), and a sense of entitlement (Lee et al., 2018), whereas people hold opposite stereotypes with regard to these dimensions concerning racial minorities (Solorzano, 1997; Welch, 2007) and people from lower class backgrounds (Gorski, 2012; Landrine, 1985; Smedley & Bayton, 1978), and have no strong stereotypical beliefs in these domains when it comes to women (Eagly & Mladinic, 1989; Heilman & Parks-Stamm, 2007). This observation highlights the importance of understanding the idiosyncratic challenges faced by each group. Nevertheless, some challenges and some processes by which the different achievement gaps are generated will be common, so it is worth considering what researchers of the attractiveness advantage can learn from research on other social groups, as well as the other way around. We consider each in turn. Comparing research on the attractiveness advantage with that on other social groups, we note that much more research has been dedicated to supply-side explanations, particularly with regard to gender and social class. For example, gender researchers have identified early-stage cultural and education influences (Cheryan, Ziegler, Montoya, & Jiang, 2017) as well as choices regarding family formation and lifestyle preferences (Ceci & Williams, 2011) that result in a decrease in the supply of qualified female employees in the domains of science, technology, engineering, and mathematics. This work has broadened the conversation from a focus on decision makers and their bias (Chesler, Barabino, Bhatia, & Richards-Kortum, 2010; Hill, Corbett, & St. Rose, 2010) to interventions aimed at changing the masculine culture of these fields to decrease such discrepancies (Cheryan et al., 2017). As this example shows, even in investigations where demand-side processes are relevant, attention to social elements affecting supply-side processes helps construct a more realistic picture of how advantage is generated. Another example is research on social class. It is perhaps more obvious that social class affects the extent of resources provided by socializing agents such as parents and schools than that attractiveness (also) affects this outcome (Calarco, 2014; McLoyd, 1990). As a result, much research has been dedicated to creating a nuanced understanding of how class competence gaps emerge and how they can be alleviated in educational institutions (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Walpole, 2003). These literatures thus provide a good starting point for future cross-disciplinary research on the attractiveness advantage suggested earlier.

At the same time, research on each of the mentioned characteristics may, like the attractiveness literature, benefit from deeper integration of research on supply and demand-side factors. Attempts to integrate both bodies of evidence or even to actively leverage research taking a different perspective from the one a particular researcher is studying are the exception rather than the norm. Contribution of supply-side factors to discrimination and disadvantage is sometimes discussed (Ahuja, 2002; Case, Greeley, & Fuchs, 1989; Stephens, Markus, & Phillips, 2014), but these findings usually remain disconnected from results of demand-side studies. This is not surprising as the intuitive approach to studying disadvantage is to focus on demand-side processes (Kite &

Whitley, 2016). This approach is useful in that these studies encourage the creation of interventions to decrease prejudice in social interactions, putting the onus on decision makers and evaluators to change their discriminatory behavior. There is merit to prioritizing demand-side solutions as they aim to decrease bias in social interactions. However, our review highlights a neglected problem with this approach, the fact that without focusing on supply-side processes and their consequences for the work-relevant resources of individuals of different social groups, we can neither fully understand how nor why differences in demand-side treatment are generated.

Attention to supply-side differences and how they might drive discrimination is essential in establishing whether statistical or taste-based discrimination operates. Specifically, this step is necessary to determine whether observed discrimination even constitutes bias and goes against principles of meritocracy, a step generally not undertaken in research on gender, race, or social class, despite the described relatively greater abundance of research on both supply- and demand-side factors. This lack of integration of different perspectives and domains of evidence hinders the understanding of sources of achievement gaps. For example, by not attending to supply-side differences, researchers might be documenting what they see as discrimination but is to some degree meritocratic selection (as real productivity differences are ignored) or might be ignoring the problem altogether (failing to ask where and why such productivity differences arise). We hope that our attempt at such an integrative approach, however limited by the current state of evidence and constraints inherent in endeavors of such complexity, provides a blueprint and impetus for more integrative thinking in research on organizational inclusion more generally.

CONCLUSION

The dominant view in social sciences and public discourse is that the attractiveness advantage represents a case of taste-based discrimination, or discrimination unrelated to merit. We integrated and evaluated research across several social science disciplines to examine how the current state of scientific evidence speaks to this social and organizational concern. Through quantitative and qualitative reviews, we find that the conclusion of decades of research on attractiveness discrimination, claiming taste-based discrimination, is open to the additional explanation of statistical discrimination, with decision makers assuming that attractiveness is correlated with performance, and discriminating on that basis, guided by their context-specific instrumental goals. We further find that the attractive do possess a slight advantage in human as well as a small but notable advantage in social capital, potentially rendering discrimination meritocratic in many situations. Studies attempting to detect whether there is an attractiveness advantage over and above that explained by human and social capital are unable to exclude such, potentially meritocratic, statistical discrimination process. By bringing these bodies of work on the attractiveness advantage together, we provide a novel integrative view of the attractiveness advantage, propose strategies through which attractiveness biases can be detected more effectively, and point to key directions for future cross-disciplinary research on the sources of the attractiveness advantage.

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APPENDIX B

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TABLE 1
A Review of Potential Explanations for the Attractiveness Advantage

Explanation	Key References	Main Idea	Type of Discrimination	Limitations of Past Work	Hypotheses	Support from the Current Review
Mating motives	Agthe, Spörrle, & Försterling, (2008, 2011, 2014, 2016), Connelly, Certo, Ireland, & Reutzel (2011), Langlois et al. (2000)	Individuals' appearance communicates their reproductive viability to members of the opposite gender	Taste-based	Differences in perceived competence between targets are not measured	The attractiveness advantage should be stronger for women than for men	Not supported; a somewhat stronger advantage is observed for men than for women
Generalized preferences for the attractive (vs. unattractive)	Dion et al. (1972), Eagly et al. (1991), Jones (1990)	Attractive individuals are expected to have socially desirable traits and are treated more favorably for this reason	Statistical	Assumes that there are no differences in perceived competence of targets	Congruent gender x task-type interactions will lead to greater attractiveness advantages than incongruent ones	Supported; male targets considered for masculine jobs benefit the most from their attractiveness
—	—	—	—	—	The greater the amount of job-relevant information that is available, the smaller the magnitude of the attractiveness advantage	Supported; the attractiveness advantage is weaker when large amounts of relevant information are provided to evaluators
Belief in the greater instrumentality of the attractive (vs. unattractive)	Converse et al. (2016), Judge et al. (2009), Kanazawa & Still (2017), Mobius & Rosenblat (2006)	Attractive individuals are believed to possess greater work-relevant resources, making them better suited to the workplace	Statistical	Methodologies used lead to challenges of endogeneity and measurement validity	Attractiveness should be positively correlated with greater human and social capital	Supported; the attractive on average possess a small, negligible advantage in human and a small, but notable advantage in social capital

TABLE 2 Overall Effect of Attractiveness on Workplace Outcomes

Estimate or Value	Pre-2000 Studies ^a		Post-2000 Studies		All Studies	
	All Reported Effect Size Estimates	Excluding Influential Outliers	All Reported Effect Size Estimates	Excluding Influential Outliers	All Reported Effect Size Estimates	Excluding Influential Outliers
Number of effect size estimates, <i>k</i>	27	26	42	40	69	67
Number of study participants, <i>n</i>	3,207	3,147	28,843	27,235	32,050	30,442
Mean weighted effect size estimate, <i>d</i> [95% confidence interval]	0.40 [0.28, 0.51]	0.37 [0.27, 0.47]	0.38 [0.22, 0.53]	0.31 [0.18, 0.43]	0.38 [0.28, 0.49]	0.34 [0.25, 0.43]
Homogeneity of effect size estimates (<i>Q</i>) comprising <i>d</i>	120.07*	90.21*	1,189.36*	503.53*	1,336.86*	672.25*

^a Effect sizes for Hosoda et al. (2003) are slightly different from those reported in the original article. Hosoda et al. compute and then aggregate separate effect sizes for each target gender x task-type pair in each study. The values here reflect the aggregate effect using only one effect size from each included study.

* *p* < .001

FIGURE 1
Demand-Side Effects as Reported in Experimental Research on the Attractiveness Advantage

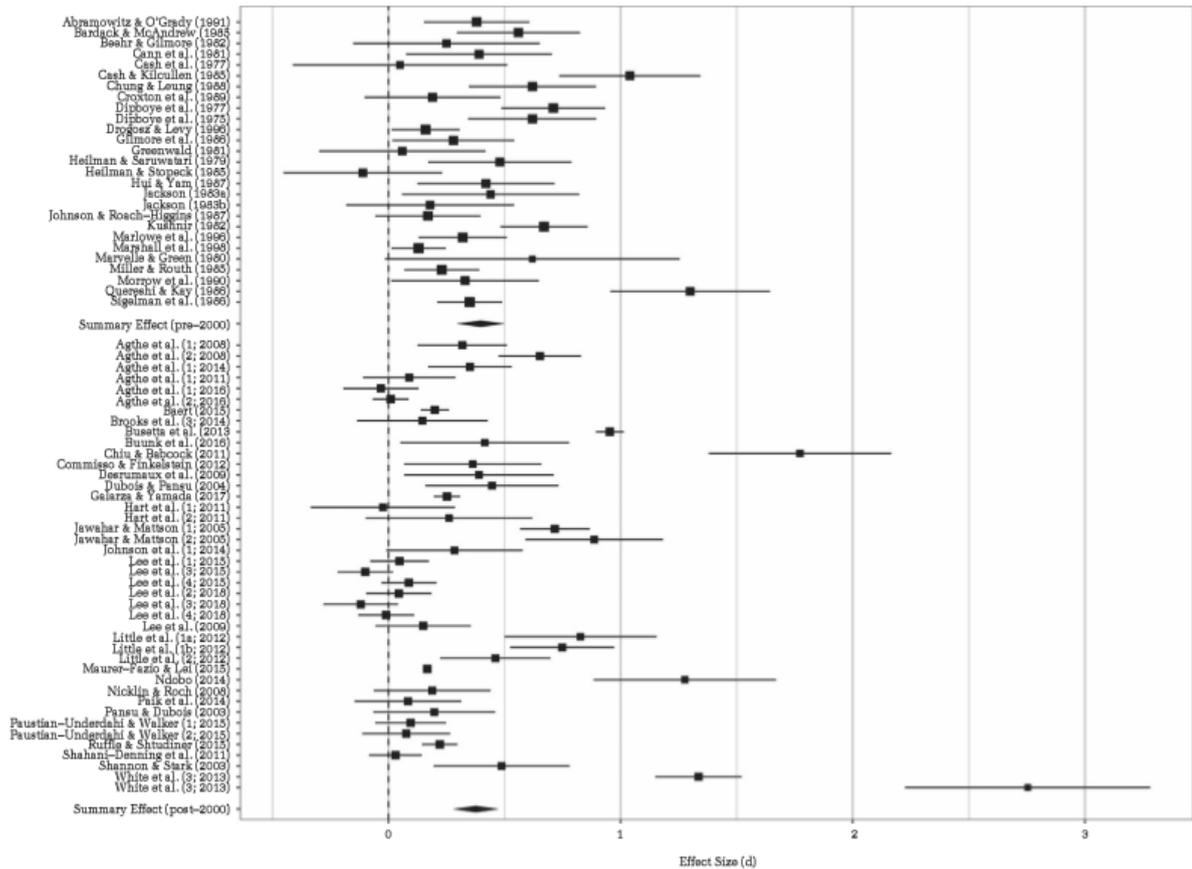


FIGURE 2
The Creation and Reinforcement of Human and Social Capital Factors

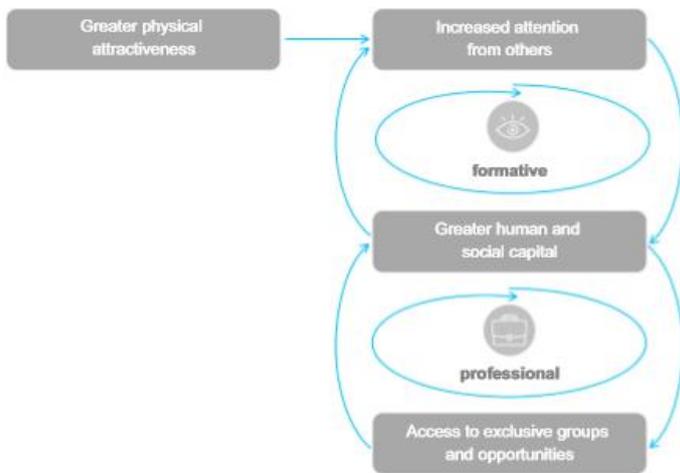


FIGURE 3
Supply-Side Effects as Shown by Correlations between Physical Attractiveness and Human and Social Capital Traits

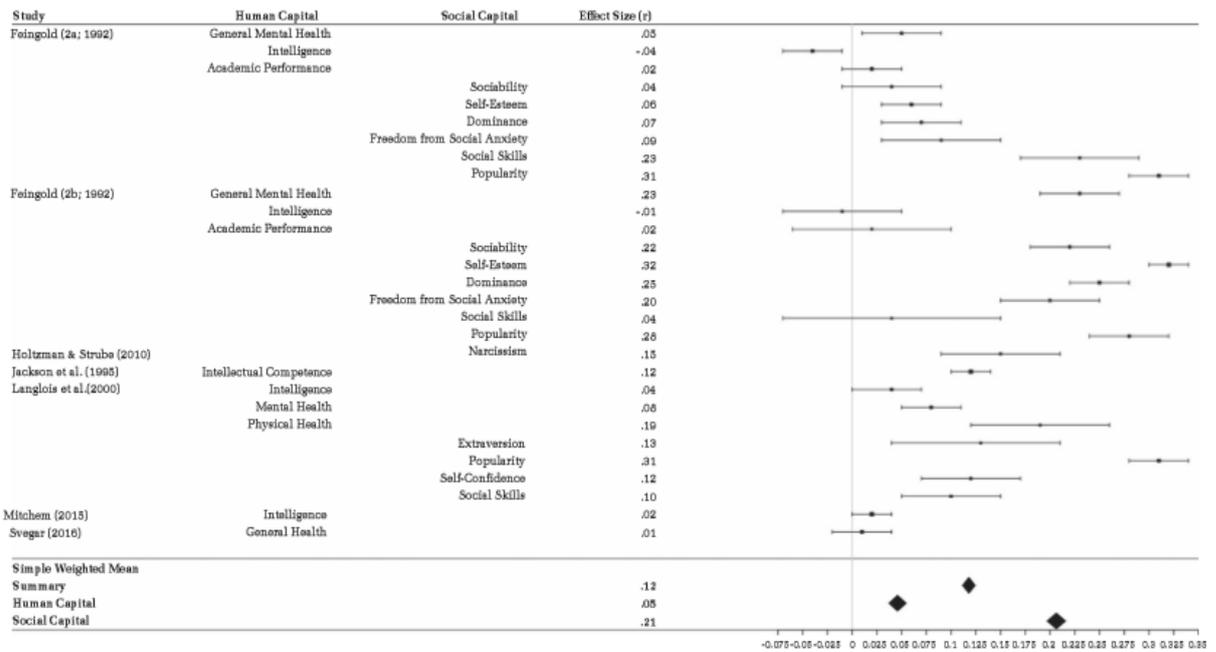


FIGURE 4
A Framework for the Generation of the Attractiveness Advantage

