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## Physical Attractiveness and Intellectual Competence: A Meta-Analytic Review

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*Meta-analysis was used to test hypotheses about the relationship between physical attractiveness and intellectual competence. In support of status generalization theory and implicit personality theory, attractive people were perceived as more competent than less attractive people. Attractiveness effects were stronger for males than for females, and stronger when explicit information about competence was absent than when it was present, in keeping with status generalization theory. In partial support of status generalization theory and expectancy theory, attractiveness was related to actual competence in children, but not in adults. Direct measures of competence were influenced strongly more by attractiveness than were indirect measures, as predicted by status generalization theory. Implications for theory, organizational policy, and future research are discussed.*

Recent meta-analytic reviews of the physical attractiveness research have shed new light on the popular belief that "what is beautiful is good" (Eagly et al. 1991; Feingold 1992). Although attractive people are perceived more favorably than the less attractive, the dimensions along which more favorable perceptions occur may be limited. Recent reviews also call into question whether attractive people actually possess more favorable characteristics than less attractive people. Despite some evidence that attractive people are actually as "good" as others believe them to be, other evidence suggests that they are no better than their less attractive counterparts (Feingold 1992). Thus there appear to be limits to both the attractiveness stereotype and the socially desirable characteristics actually possessed by the attractive. The purpose of our meta-analytic review was to test these limits in the domain of intellectual competence.

The relationship between physical attractiveness and intellectual competence has received some attention in the literature, although firm conclusions have eluded the research. Eagly et al.'s (1991) meta-analytic review of the research on the attractiveness stereotype concluded that attractiveness has a moderate effect on perceptions of intellectual competence. Their review, however, did not include research on children, nor did it consider actual relationships between attractiveness and competence. Feingold's (1992) meta-analytic review considered actual rela-

tionships in both children and adults, and concluded that actual relationships were trivial. Feingold's review, however, included only two measures of intellectual competence, namely standardized test scores and grade point averages.<sup>1</sup>

Another omission in both Eagly et al.'s (1991) and Feingold's (1992) reviews is the status generalization theory perspective on the attractiveness-competence relationship (Berger, Wagner, and Zelditch 1985; Webster and Driskell, 1983). Status generalization theory offers predictions not only about the relationship between attractiveness and competence, but also about potential moderators of this relationship. Our meta-analytic review included the status generalization perspective as well as the implicit personality theory and expectancy theory perspectives considered by Eagly et al. and Feingold.

Thus our meta-analysis examined relationships between physical attractiveness and both perceived and actual intellectual competence in both adults and children. We derived predictions from status generalization theory, implicit personality theory, and expectancy theory. We also examined potential modera-

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<sup>1</sup> Other evidence that our meta-analytic review is not redundant with Eagly et al.'s (1991) and Feingold's (1992) is found by tallying the number of nonredundant studies. Of the 30 reports included in our review of adult perception research, only nine appeared in Eagly et al.'s review and only two in Feingold's. Of the remaining 29 reports in our review, none appeared in Eagly et al.'s review and only four in Feingold's.

tors of the attractiveness-competence relationship.

THEORETICAL PERSPECTIVES ON  
THE RELATIONSHIP BETWEEN  
PHYSICAL ATTRACTIVENESS AND  
INTELLECTUAL COMPETENCE

*Status Generalization Theory*

Status generalization theory evolved from expectation states theory and status characteristics theory to explain how external status characteristics influence interaction and outcomes in informal, task-oriented groups (Berger et al. 1985). According to the theory, external status characteristics are used to generate expectation states regarding performance (the “spread of relevance” of status characteristics) even without prior association between these characteristics and performance (the “burden of proof” assumption), and often without conscious awareness. Decades of research and theoretical refinement have supported predictions derived from the status generalization perspective (Berger and Zelditch 1985).

Webster and Driskell (1983) were the first to apply status generalization theory to physical attractiveness effects. They argued that attractiveness is a diffuse status characteristic in our culture which affects cognitions and behavior. Specifically, attractiveness discriminates among individuals and establishes performance expectancies “without limit”—that is, without regard to whether attractiveness is relevant to task performance. They state that “the burden of proof is on demonstrating that the status characteristic is NOT relevant to ability, instead of the other way around” (p. 146).

Results of Webster and Driskell’s (1983) research support the view that physical attractiveness is a diffuse status characteristic. Its different states (high and low attractiveness) are evaluated differently, and individuals who possess the high state (attractive individuals) are expected to have high states of other specific characteristics and general unlimited characteristics. Thus our first prediction derived from status generalization theory was that physically attractive people should be perceived as more intellectually competent than unattractive people on the basis of the “spread of relevance” of diffuse status characteristics “without limit.”

Status generalization theory also describes how status characteristics combine to influence generalized expectation state, specific expectation states, and (ultimately) interaction patterns. Webster and Driskell say, “All status information is used in status generalization—none is ignored or eliminated through cognitive processing” (1983:147). Moreover, “expectations produced through status generalization reflect an aggregate view of all the status characteristics possessed by each person” (i.e., the aggregating assumption; p. 159).

Gender is a diffuse status characteristic that often has been examined in conjunction with physical attractiveness. According to status generalization theory, males’ higher status in our culture should generalize to all situations in which gender discriminates among individuals, regardless of its relevance, and with or without awareness of its effects. Thus individuals should have higher expectation states (general and specific) for males than for females (Lockheed 1985; Meeker and Weitzel-O’Neill 1985). On the basis of the aggregating assumption of status generalization theory, the highest expectation states should exist for attractive males because of the combined effects of two diffuse status characteristics. Thus our second prediction from status generalization theory suggests that attractiveness effects should be stronger for males than for females.

Zelditch (1985) addressed another important question for status generalization theory, concerning the combined effects of diffuse and specific status characteristics. He argued that diffuse status characteristics are connected to task outcomes by longer “paths” than are specific status characteristics, and that path length is related inversely to the amount of observable inequality produced by the status characteristic. In support of this argument, Zelditch found that a specific, instrumental status characteristic had stronger effects than a diffuse, nonrelevant status characteristic on expectation states and behavior.

Applying Zelditch’s analysis to the physical attractiveness variable, if we assume that the path between explicit information about intellectual competence and perceptions of competence is shorter than the path between physical attractiveness and these perceptions (that is, explicit information about competence is tied more closely to perceptions of

competence than is attractiveness), then status generalization theory suggests a third prediction: Attractiveness effects should be stronger when explicit information about competence is absent than when it is present.

Status generalization theory provides a framework for understanding how physical attractiveness may influence the development of an individual's intellectual competence as well as perceptions of her or his competence by others. If others hold higher generalized expectations about attractive than about unattractive individuals, then, according to the theory, attractive individuals should 1) receive and act on more opportunities to contribute to task outcomes; 2) receive more positive evaluations from others; 3) exert more influence on group decisions; and 4) be less likely to accept others' attempts to influence them (Berger et al. 1985). The more favorable task interactions experienced by attractive people than by less attractive people should facilitate the development of intellectual competence more in the former than in the latter. Thus, if we assume the existence of the complex chain of events just described, status generalization theory suggests a fourth prediction: actual intellectual competence should be greater in more attractive than in less attractive people.

The fifth and last prediction derived from status generalization theory concerns how the nature of the competence measure may influence the strength of attractiveness effects. According to Zelditch (1985), diffuse status characteristics have stronger effects on expectation states when specific, task-relevant status characteristics are absent. If we extend this argument, then specific, task-relevant status characteristics are less apparent when competence is measured indirectly than when it is measured directly. Thus attractiveness should have stronger effects when indirect measures of competence are used (i.e., when specific, task-relevant status characteristics are less apparent) than when direct measures are used (i.e., when specific, task-relevant status characteristics are apparent).<sup>2</sup>

<sup>2</sup> We categorized a measure of intellectual competence as direct if it is typically used to measure cognitive ability exclusively (e.g., abstract reasoning, problem solving). Thus we categorized standardized test scores and report card grades as direct measures because they measure cognitive ability rather than other characteristics

### *Implicit Personality Theory*

Ashmore and Del Boca (1979; also see Ashmore, Del Boca, and Wohlens 1986) argued that implicit personality theory can be used to explain how stereotypes influence person perception. Implicit personality theories are hypothetical cognitive structures whose primary components are personal attributes in inferential relations; these relations specify the degree to which attributes covary. Stereotypes themselves are implicit personality theories in which group membership is one of the personal attributes that is associated inferentially with other attributes in the theory.

Eagly et al. (1991) applied the implicit personality theory perspective to understanding the physical attractiveness stereotype. They argued that the social categories "physically attractive" and "physically unattractive" are linked inferentially to a variety of evaluative dimensions including intellectual competence (Kim and Rosenberg 1980; Rosenberg 1977; Rosenberg, Nelson, and Vivekananthan 1968; Rosenberg and Sedlak 1972). On the basis of their analysis of sources of the attractiveness stereotype (i.e., direct observations and cultural information; e.g., Adams 1982; Dion 1981, 1986; Patzer 1985), Eagly et al. predicted that attractiveness would have a relatively weak effect on perceptions of intellectual competence for two reasons. First, it is unlikely that attractive people behave consistently in more intellectually competent ways (i.e., direct observations). Second, it is unlikely that cultural information (e.g., media images) consistently portrays attractive people as more intellectually competent than less attractive people.

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(e.g., social attractiveness). Although one may argue that report card grades reflect characteristics other than cognitive ability, we believe that because report card grades are based on multiple assessments over time, often including "objective" tests, they are categorized more accurately as direct than as indirect measures of competence. We categorized a measure as indirect if it assessed cognitive ability plus other characteristics. For example, job evaluations and evaluations based on a single production were categorized as indirect measures because they are likely to be influenced by characteristics other than cognitive ability. Of course, the distinction between direct and indirect measures is imprecise, and might be viewed more appropriately as a continuum than as a dichotomy. Nevertheless, it was used to categorize the available research in terms of whether direct or indirect measures of competence were used in order to test the prediction derived from status generalization theory (discussed later).

Other predictions tested in Eagly et al.'s (1991) meta-analytic review were that attractiveness effects would depend on the amount of information available about the target, on the target's sex, and on the rater's sex. Attractiveness effects were predicted to be stronger when less rather than more information about the target was available, when the target was female rather than male, and when the rater was male rather than female. These ancillary predictions were based not on implicit personality theory but on information integration models of social judgment (Anderson 1981) and on research about the combined effects of individuating and stereotypic information on person perception (e.g., Deaux and Lewis 1984; Eagly and Steffen 1984; Fiske and Neuberg 1990; Jackson, Sullivan, and Hodge 1993). Thus the only prediction derived from implicit personality theory in Eagly et al.'s research and in our own is that attractive people should be perceived as more intellectually competent than less attractive people (Prediction 1).

#### *Expectancy Theory*

Expectancy theory is the major theoretical framework for understanding why attractive people actually should be different from less attractive people (but see L. Jackson 1992 for a sociobiological perspective). According to the theory, a perceiver's positive expectancies based on a target's attractiveness influence her or his behavior toward the target, which in turn influences the target's behavior, often toward confirming the perceiver's positive expectancies. Ultimately the target's positive behavior is incorporated into his or her self-concept, thus completing the self-fulfilling prophecy (Darley and Fazio 1980; Harris and Rosenthal 1985; Jones 1986; Jussim 1986; Miller and Turnbull 1986). Still to be specified, however, is the precise mechanism whereby others' expectancies and behavior influence a target's self-concept (Feingold 1992).

On the basis of the physical attractiveness stereotype, perceivers should expect greater intellectual competence in more attractive than in less attractive people (Eagly et al. 1991). If we assume that perceivers act on their expectancies, that targets behave so as to confirm perceiver's expectancies, and that targets' behavior influences their self-concepts, then expectancy theory offers a predic-

tion identical to status generalization theory: attractive people actually should be more intellectually competent than less attractive people (Prediction 4).

#### PREDICTIONS FOR THE META-ANALYSIS

Status generalization theory offers the following predictions about the relationship between physical attractiveness and intellectual competence:

Prediction 1. Physically attractive people are perceived as more intellectually competent than less attractive people.

Prediction 2. Physical attractiveness effects on perceptions of intellectual competence are stronger for males than for females.

Prediction 3. Physical attractiveness effects on perceptions of intellectual competence are stronger when explicit information about competence is absent than when it is present.

Prediction 4. Actual intellectual competence is greater in attractive than in less attractive people.

Prediction 5. Physical attractiveness effects on perceived and actual intellectual competence are stronger when indirect than when direct measures of competence are used.

Implicit personality theory also suggests Prediction 1, but not Predictions 2 through 5. Expectancy theory also suggests Prediction 4, but not the others.

#### METHODS

##### *Literature Search Procedures*

We used a multistep procedure to identify the initial pool of studies for the meta-analysis. First, we conducted computer-based information searches, using the following keywords: physical attractiveness/facial attractiveness/physical appearance and occupational outcomes/professional outcomes/competence/status/success. Databases searched were PsychINFO (*Psychological Abstracts*), 1970 to 1989; ERIC (Educational Resources Information Center), 1970 to 1989; *Dissertation Abstracts Online*, 1900 to 1989; ABI/INFORM, 1970 to 1989; and *Sociological Abstracts*, 1970 to 1989.

In Step 2, the reference lists of research articles located in Step 1 were searched for additional research missed in the computer-based search. This step allowed us to identify articles published before 1970.

In Step 3 we searched the reference lists of recently published volumes (Alley 1988; Bull and Rumsey 1988; Hatfield and Sprecher 1986; Herman, Zanna, and Higgins 1986; Jackson 1992; Patzer 1985), book chapters (e.g., Adams 1982, Sorell and Nowak 1981), and annotated bibliographies (e.g., Cash 1981) on physical appearance/attractiveness.

In Step 4 we obtained recent publications by searching all issues of 20 major journals from January 1990 through August 1994 (e.g., *Child Development*, *Journal of Applied Psychology*, *Journal of Personality and Social Psychology*).

The final step was to contact attractiveness researchers personally to locate articles unpublished, under review, or in press.

#### *Criteria for Inclusion of Studies in the Meta-Analysis*

We identified a total of 113 empirical reports from the literature search procedures described above. Reports were sorted into four groups: adult targets' perceived competence (47 reports), child targets' perceived competence (30 reports), adult respondents' actual competence (30 reports), and child respondents' actual competence (six reports). We categorized targets and respondents as children if they were of high school age or less. Most studies in these categories used elementary or high school students, with two exceptions: Adams (1978) used preschool children, and Stephan and Langlois (1984) used infants. We reduced the initial pool to a final set of 59 reports (68 studies), listed in the appendix, by implementing the following decision rules:

1) Studies were included only if they deal explicitly with the physical attractiveness of the target or respondent. We excluded studies that focused on other aspects of physical appearance, such as clothing or grooming (e.g., Eisenberg et al., 1984; Kurtz 1969). Although other physical characteristics have been associated with attractiveness and status (e.g., height, Roberts and Herman 1986), and therefore may be relevant to status generalization theory, none have been established as diffuse status characteristics in the same manner as physical attractiveness (Webster and Driskell 1983).

2) Studies were included only if intellectual competence was measured on an evaluative dimension (i.e., one pole is easily identified as more positive than the other; Eagly et al. 1991). Thus we excluded studies if competence was

measured in terms of causal attributions (e.g., Major, Carrington, and Carnevale 1984; Spencer and Taylor 1988), personality traits (e.g., assertiveness, locus of control; Kleim, Campbell, and Olson 1983; Krebs and Adinolfi 1975), nonverbal or overt behavior from which competence was inferred (e.g., assertive behavior; Adams and Cohen 1974; Guise, Pollans, and Turkat 1982; Jackson and Huston 1975), or ratings of the target's productions (e.g., essay quality; Landy and Sigall 1974), although we included ratings of targets who provided these productions (e.g., Landy and Sigall 1974). Similarly, we excluded studies relating attractiveness to persuasion or social influence because the relationship between these measures and intellectual competence is ambiguous (e.g., Chaiken 1979; Dion and Stein 1978).

3) We excluded studies in which the rater and the target were engaged in an ongoing relationship (e.g., teachers' ratings of their own students; Adams and Cohen 1974; therapists' ratings of their own clients; Gonzalez, 1982; Nordholm 1980; students' ratings of their own teachers; O'Reilly 1987) because the influence of attractiveness in such specialized role relationships may be quite different from its influence more generally (Eagly et al. 1991).

4) Studies of occupational competence were included, provided that competence was measured in general evaluative terms (e.g., hiring recommendation, probable success). We also included studies that assessed the target's effectiveness in a specific occupation (e.g., counselor or teacher; e.g., Lewis and Walsh 1978), provided that the target and the perceiver were not engaged in an ongoing, specialized role relationship (see 3 above).

5) Most studies used only Anglo-American targets or respondents. When studies used other racial or ethnic groups (Adams 1978; Cash and Duncan 1984; DeMeis and Turner 1978; Langlois and Stephan 1977; Maruyama and Miller 1980), we performed analyses twice, first excluding and then including these studies. This situation existed only for studies of perceived competence in children.<sup>3</sup>

#### *Computation and Analysis of Effect Sizes*

Two measures of effect size are currently popular in the meta-analysis literature; *d* and

<sup>3</sup> A list of studies excluded from the analysis is available from the first author.

$r$ . The  $d$  statistic is the difference between two means divided by the within-group standard deviation; it can be used only for binary comparisons. The  $r$  statistic is the correlation between the treatment variable and the dependent variable in the total sample pooled across groups; it is the average correlation weighted by the sampling error variance. The  $r$  statistic works equally well whether two or more levels of attractiveness are defined. Thus we chose  $r$  as the primary measure of effect size, but report the equivalent  $d$  statistic to facilitate comparisons with previous meta-analytic reviews (Eagly et al. 1991; Feingold 1992). In the binary case,  $r$  and  $d$  are algebraically transformable (Hunter and Schmidt 1990; Hunter, Schmidt, and Jackson 1980) in the formula

$$d = 2r/(1-r^2)^{1/2}.$$

To compare mean correlations between two sets of studies, we used the normal deviate formula

$$z = (r_a - r_b)/(V_a/K_a + V_b/K_b)^{1/2}$$

where  $r_a$  is the mean correlation for group a,  $V_a$  is the variance in correlations for group a, and  $K_a$  is the number of correlations in group a, with  $r_b$ ,  $V_b$ , and  $K_b$  defined similarly for group b.

We performed computations using VGBARE (Hunter 1985a), a meta-analysis program based on formulas developed by Hunter and Schmidt (1990), and FTOR (Hunter 1985b), a program to convert analysis of variance  $F$ -ratios to  $r$  effect sizes, also based on formulas developed by Hunter and Schmidt (1990). For studies reporting more than one measure of intellectual competence, we averaged  $r$  values across measures to ensure that effects included in the analysis were independent (Hedges and Olkin 1985; Hunter and Schmidt 1990). On average, 2.75 items were included in the aggregates.

We computed effect sizes for within-subjects designs using the Spearman-Brown formula for scale reliability,  $R_{yy} = (nr)/(nr + 1 - r)$ , where  $n$  is the number of items or measures used in the study and  $r$ , the reliability of a single item, is assumed to be .20, a conservative estimate of single-item reliability. (For a detailed treatment of the statistics needed for a full analysis of within-subjects designs, see Hunter and Schmidt 1990: 339-404.)

## RESULTS

### *Characteristics of Studies Included in the Meta-Analysis*

Study characteristics, presented in Table 1, may be summarized by describing the prototypic study for each of the four research categories.

The prototypic study of adult targets' perceived competence was conducted in the 1980s by a male first author. A between-subjects design was used and included two levels of attractiveness, male and female targets, multiple exemplars of attractiveness based on photos, and information about the target beside attractiveness. Subjects were 150 undergraduate males and females.

The prototypic study of child targets' perceived competence was conducted in the 1970s by a male or female first author. A between-subjects design was used, in which 230 elementary schoolteachers (gender unspecified) rated female and male elementary schoolchildren. Attractiveness was manipulated at two levels by using photos attached to other information about each child.

The prototypic study of adult respondents' actual competence was conducted in the 1980s by a male first author. Respondents were 130 male and female undergraduates. Attractiveness was determined by strangers' ratings of photos of the respondents.

There was no prototypic study of child respondents' actual competence. Rather, the four studies included in this category were quite heterogeneous except that all were conducted by a male first author.

### *Tests of Predictions*

Summaries of the meta-analysis to test Predictions 1 and 2 are presented in Table 2.<sup>4, 5</sup> In support of Prediction 1, attractiveness influenced perceptions of intellectual competence in both adults and children. Attractive targets were perceived as more competent than their less attractive peers. Additional analyses revealed stronger attractiveness ef-

<sup>4</sup> Because results were identical for between-subjects and within-subjects designs ( $z = 1.17$ ,  $ns$ ) they are combined in all analyses.

<sup>5</sup> We performed additional analyses that excluded studies with outliers (unusually high correlations or extremely large sample (such as  $n > 2,000$ )). Results were similar whether or not the outlier studies were included in the analyses.

Table 1. Summary of Characteristics of Studies Included in the Meta-Analysis Relating Physical Attractiveness to Intellectual Competence

	Perceived Intellectual Competence		Actual Intellectual Competence	
	Adults	Children	Adults	Children
Number of Reports	30	11	15	3
Number of Studies	36	11	17	4
Number of Effects	75	20	37	19
Mean Sample Size	141	231	133	157
Decade of Publication				
1990s	2	0	2	1
1980s	16	2	11	1
1970s	12	9	2	1
Female First Author (Yes)	13	5	4	0
Sex of Subjects/Respondents				
Males only	2	0	2	1
Females only	3	2	1	0
Both sexes	30	6	14	3
Not reported	0	3	0	0
Sex of Target				
Males only	2	2	— <sup>a</sup>	— <sup>a</sup>
Females only	11	0	— <sup>a</sup>	— <sup>a</sup>
Both sexes	22	9	— <sup>a</sup>	— <sup>a</sup>
Research Design				
Between-subjects	23	7	0	0
Within-subjects	10	2	0	0
Correlational	2	2	17	4
Type of Subjects/Respondents				
Undergraduates	39	1	11	0
Personnel consultants	4	0	0	0
Working adults	1	1	4	0
Elementary schoolteachers	0	8	0	0
Job applicants	1	0	1	0
Children	0	1	1	4
Attractiveness Manipulation				
Photos/slides	33	11	9	3
Videotapes	2	0	3	0
Live targets	0	0	4	1
Levels of Attractiveness				
2	23	7	0	0
3	10	2	1	0
Continuous scale	2	2	16	4
Multiple Exemplars (Yes)	28	10	— <sup>a</sup>	— <sup>a</sup>
Other Information beside Attractiveness (Yes)	31	10	— <sup>a</sup>	— <sup>a</sup>

Note: Mean sample sizes excluded outlier studies ( $n > 2,000$ ).

<sup>a</sup> Not applicable.

fects for adult targets ( $d = .65$ ) than for child targets ( $d = .49$ ;  $z = 2.15$ ,  $p < .05$ ).

In support of Prediction 2, attractiveness had stronger effects on perceptions of males ( $d = .93$ ) than of females ( $d = .70$ ;  $z = 2.93$ ,  $p < .01$ ), for adult targets. A similar analysis could not be performed for child targets because few studies provided the statistics needed to compare the strength of attractiveness effects for girls and for boys.

Table 3 contains the results of the meta-analysis to test Prediction 3, that attractiveness effects would be stronger when explicit

information about competence was absent than when it was present.

For both adult and child targets, the magnitude of the attractiveness was greater when no competence information was provided ( $d = .75$  and  $.72$ ) than when it was provided ( $d = .58$  and  $.56$ ;  $z = 2.78$ ,  $p < .01$ , and  $z = 2.45$ ,  $p < .01$ , for adult and child targets respectively), in support of Prediction 3. The analysis for child targets, however, was based on only two studies ( $n = 270$ ), both in the category of no information about competence.



Table 2. Summary of Meta-Analyses: Physical Attractiveness and Perceptions of Intellectual Competence

	All Studies	Adult Targets Females Only	Males Only	Child Targets All Studies
Number of Independent Effects	36	18	8	11
N	5,170	2,349	909	2,536
r Effect Size	.31	.33	.42	.24
sd <sub>r</sub>	.1657	.2389	.1240	.0915
r <sub>median</sub>	.26	.24	.30	.19
95% CI for r	.25/.37	.21/.45	.32/.52	.17/.30
Chi-Square Homogeneity Statistic	229.67	193.08	28.06	39.26
d Effect Size	.65	.70	.93	.49

Note: CI = confidence interval;  $d = 2r/(1-r^2)^{1/2}$ . Females Only and Males Only categories include studies of one sex only and studies of both sexes that provided statistics to compute separate effects for each sex.

Table 4 presents results of the meta-analysis to test Prediction 4, that actual intellectual competence would be greater among attractive than among less attractive people. We found modest support for this prediction for children ( $d = .41$ ), and mixed support for adults. For adults, the analysis that included all studies suggested a weak relationship between attractiveness and actual competence ( $d = .24$ ). The relationship between attractiveness and actual competence was virtually zero ( $d = .02$ ), however, when two studies were removed from the analysis—one that reported an outlier correlation (Foster, Pearson, and Imahori 1985;  $r = .75$ , compared with  $.13 < r < .26$ , in all other studies) and another that used a very large sample ( $n = 3,692$ ) and the same interviewer to rate both attractiveness and competence (Umberson and Hughes 1987). Moreover, separate analyses for males and for females indicated a nonsignificant relationship between attractiveness and actual competence in each case ( $d = .04$  and  $.00$  for females and males respectively).

Table 5 displays results of the meta-analysis to Test prediction 5, that attractiveness would have stronger effects when indirect measures of competence were used than when direct measures were used.

For adult targets' perceived competence, effect sizes were in the predicted direction ( $d = .65$  and  $.58$ , for indirect and direct measures respectively), but did not differ significantly ( $z = 1.15, p < .125$ ). For adult respondents' actual competence, Prediction 5 was supported; attractiveness was related more strongly to actual competence when indirect ( $d = .32$ ) than when direct measures of competence were used ( $d = -.20, z = 2.85, p < .01$ ). In fact, attractiveness was unrelated to actual competence when competence was measured directly (i.e., confidence interval for  $r$  spans 0). A similar analysis could not be performed for child targets and respondents because too few studies involving children used indirect measures of competence.

Table 3. Summary of Meta-Analyses: Moderating Effects of Competence Information on the Relationship between Physical Attractiveness and Perceptions of Intellectual Competence

	Adult Targets		Child Targets		All Targets	
	Competence Information	No Competence Information	Competence Information	No Competence Information	Competence Information	No Competence Information
Number of Independent Effects	19	15	7	2	26	17
N	2,339	2,744	1,442	270	3,781	3,014
r Effect Size	.28	.35	.27	.34	.28	.34
sd (corrected)	.1510	.1707	.1073	.0286	.1361	.1631
r <sub>median</sub>	.23	.27	.26	.26	.23	.27
95% CI for r	.20/.36	.25/.44	.18/.36	.22/.45	.21/.34	.26/.43
Chi-Square Homogeneity Statistic	92.15	113.78	28.32	2.49	120.32	121.50
d Effect Size	.58	.75	.56	.72	.58	.72

Note: CI = confidence interval;  $d = 2r/(1-r^2)^{1/2}$ .

Table 4. Summary of Meta-Analyses: Physical Attractiveness and Actual Intellectual Competence

	Adult Respondents				Child Respondents All Studies
	All Studies	Excluding Outliers	Females Only	Males Only	
Number of Independent Effects	26	24	10	12	5
N	6,999	3,255	861	2,276	2,839
r Effect Size	.12	.01	.02	.00	.20
sd <sub>r</sub>	.1360	.1126	.0889	.1187	.0000
r <sub>median</sub>	.10	.09	.07	-.01	.21
95% CI for r	.06/.18	-.05/.07	-.06/.11	-.08/.08	.17/.24
Chi-Square Homogeneity Statistic	157.02	65.01	16.73	43.91	3.26
d Effect Size	.24	.02	.04	.00	.41

Note: CI = confidence interval;  $d = 2r/(1-r^2)^{1/2}$ . Females Only and Males Only categories include studies of one sex only and studies of both sexes that provided statistics to compute separate effects for each sex.

### Additional Analyses

*Rater's gender.* Meta-analysis of studies using female raters only, or using both sexes but reporting separate statistics for females, indicated a moderately strong attractiveness effect ( $d = .68$ ,  $n = 642$ ). An identical analysis for male raters revealed a comparable effect ( $d = .61$ ,  $n = 540$ ), suggesting that attractiveness had similar effects on perceived competence whether the rater was female or male ( $z = 0.37$ ,  $p < .356$ ).

*Quality of performance.* Meta-analysis examined whether quality of performance (high or low) influenced the strength of attractiveness effects on perceived competence. We identified five adult perception studies that manipulated quality of performance; three of these reported statistics needed to evaluate the attractiveness-by-quality of performance interaction. Studies were coded so that higher values indicated stronger attractiveness effects for low-quality performance. The size of the  $d$  effect for the interaction was .41, suggesting that attractiveness had stronger effects when quality of performance was low than when it was high.

### DISCUSSION

Status generalization theory provided five predictions about the relationship between physical attractiveness and intellectual competence. It predicted that attractive people, particularly males, would be perceived as more competent than less attractive people, especially when explicit information about competence was absent and especially when competence was measured indirectly. It also predicted that attractive people actually would be more intellectually competent than their less attractive peers. In addition implicit personality theory predicted that attractiveness would influence perceptions of competence. Expectancy theory predicted that attractiveness would be related to actual competence.

Results of our meta-analytic review strongly support three of the five predictions of status generalization theory, and partially support the remaining predictions. First, physically attractive adults and children were perceived as more intellectually competent than their less attractive peers, in agreement with findings of previous meta-analytic re-

Table 5. Summary of Meta-Analyses: Moderating Effects of Nature of Competence Measure on the Relationship between Physical Attractiveness and Intellectual Competence in Adults

	Perceived Competence		Actual Competence	
	Direct Measures	Indirect Measures	Direct Measures	Indirect Measures
Number of Independent Effects	12	22	5	12
N	1,989	2,950	330	5,839
r Effect Size	.28	.31	-.10	.16
sd <sub>r</sub>	.1204	.1640	.1218	.1625
r <sub>median</sub>	.30	.26	-.15	.21
95% CI for r	.20/.36	.23/.38	-.25/.05	.07/.26
Chi-Square Homogeneity Statistic	46.48	135.09	9.92	174.25
d Effect Size	.58	.65	-.20	.32

Note: CI = confidence interval;  $d = 2r/(1-r^2)^{1/2}$ .

views (Eagly et al. 1991; Feingold 1992). In an extension of previous findings, attractiveness had moderately strong effects on diverse measures of competence, and stronger effects than in previous reviews, which did not focus on the intellectual competence dimension.

Second, physical attractiveness had stronger effects on perceptions of males' than of females' intellectual competence, contrary to previous meta-analytic conclusions (Eagly et al. 1991; Feingold 1992) but in keeping with the prediction of status generalization theory. According to the theory, diffuse and specific status characteristics combine to influence both generalized and specific expectation states, with or without awareness of their influence (i.e., the aggregating assumption; Berger et al. 1985; Webster and Driskell 1983). We expected that gender and attractiveness, both diffuse status characteristics, would combine to influence expectation states regarding intellectual competence and thus to create the highest expectation states for attractive males, who combine the high status of attractiveness (Webster and Driskell 1983) with the high status of being male (Lockheed 1985; Meeker and Weitzel-O'Neill 1985).

Differences in the studies included in the three meta-analytic reviews may resolve the apparent inconsistency in findings. Eagly et al. (1991) and Feingold (1992) focused on all of the evaluative dimensions associated with the physical attractiveness stereotype. Their reviews excluded studies of perceived and actual competence in the occupational domain, a domain stereotypically associated with males (e.g., Lockheed 1985). Our review included studies that measured intellectual competence in the occupational domain; this difference may explain why we observed stronger attractiveness effects for males than for females. In agreement with this reasoning, Feingold observed stronger attractiveness effects for females than for males in the social domain, a domain stereotypically associated with females. Taken together, the findings point to the importance of considering the context, specifically the gender linkage of context, in understanding the effects of attractiveness on perceptions (Jackson 1992).

Third, attractiveness had stronger effects when explicit information about competence was absent than when it was present, as predicted by status generalization theory (Zelditch 1985). Such findings also are

consistent with information integration models of social judgment (Anderson 1981) and with research on the effects of individuating and stereotypic information on person perception (e.g., Deaux and Lewis 1984; Eagly and Steffen 1984; Fiske and Neuber 1990; Jackson et al. 1993). Explicit information about competence, however, did not eliminate attractiveness effects, but only attenuated them. Such findings have implications for organizations: they suggest that explicit information about an employee's competence may not be enough to overcome the biasing effects of attractiveness, a bias that may operate without awareness. Whether and how the attractiveness bias is overcome in organizations is a question for future research. It may be, for example, that the need to judge competence accurately is sufficient to overcome the biasing effects of an employee's attractiveness. Another possibility is that beliefs about the relevance of attractiveness to job performance influence whether the attractiveness bias will influence judgments of competence.

Fourth, physical attractiveness was unrelated to actual intellectual competence in adults, but was related modestly in children. Status generalization theory predicted a relationship on the basis of assumptions about a complex chain of events linking diffuse status characteristics to behavior (Berger et al. 1985). Expectancy theory also predicted a relationship, again on the basis of assumptions about a complex chain of events linking perceivers' expectancies to targets' self-concepts (Feingold 1992). Our findings suggest that these assumptions may have some validity early in life, when self-concept regarding intellectual competence is not well established. Thus people may internalize others' status-based expectations in childhood, when status is conferred by physical attractiveness. Later in life, however, when self-concept regarding intellectual competence is well established, status-based expectations may be less important. Longitudinal research is needed to track the actual contribution of attractiveness to the development of intellectual competence.

Fifth, we found some evidence that attractiveness effects were stronger when competence was measured indirectly than when it was measured directly. This prediction was based on Zelditch's (1985) analysis of the contributions of diffuse and specific status

characteristics. The prediction was supported in research on actual competence, but not in research on perceived competence (although effect sizes were in the predicted direction). It may be that the imprecision of the distinction between direct and indirect measures caused the failure to find more support. Although it is possible to categorize a measure as direct or indirect on the basis of assumptions about whether it measures cognitive ability exclusively (direct measures) or cognitive ability plus other characteristics (e.g., social attractiveness; indirect measures), it is unlikely that any measure falls neatly into either category. Nevertheless, our findings encourage additional research to consider this distinction, which has implications for organization settings. Specifically, if attractiveness effects are stronger for some measures of competence than for others, then employers would do well to steer clear of the former and to adopt the latter. Moreover, if some measures are more susceptible to the attractiveness bias than other measures, they also may be more susceptible to other biases such as race and gender biases.

Our findings also suggest that females and males are influenced similarly by attractiveness in perceptions of a target's intellectual competence, in keeping with previous reviews (Eagly et al. 1991; Feingold 1992). In an extension of previous findings, attractiveness had stronger effects when quality of performance was low than when it was high, although attractiveness was a benefit in either case. These findings are consistent with the aggregating assumption of status generalization theory, which states that diffuse and specific status characteristics combine to influence both generalized and specific expectation states (Berger et al 1985; Webster and Driskell 1983). Thus, when quality of performance is high, there is less need to rely on diffuse status characteristics such as attractiveness to judge competence. When quality of performance is low, attractiveness plays a stronger role in the aggregation of information about competence.

Overall, our findings have both theoretical and practical implications. Theoretically they indicate the value of status generalization theory in understanding physical attractiveness effects. Although our research was not intended explicitly to compare and contrast theoretical perspectives, nevertheless it suggests that status generalization theory accounts for a broader range of attractiveness

effects than expectancy theory or implicit personality theory. Thus it is somewhat surprising that most theory-driven research on attractiveness effects is based on the latter perspectives (e.g., Eagly et al. 1991; Feingold 1992). Indeed, only one study employed status generalization theory to account for the physical attractiveness stereotype (Webster and Driskell 1983) rather than using implicit personality theory (Eagly et al. 1991). No studies have used status generalization theory to account for relationships between attractiveness and personal characteristics (e.g., intellectual competence, social competence), despite dissatisfaction with the ability of expectancy theory to account for these relationships (Feingold 1992). Our findings encourage future researchers to adopt a status generalization perspective in understanding the effects of physical attractiveness.

At a practical level, our findings reaffirm the importance of physical attractiveness in schools and organizations, where an attractiveness bias may operate unconsciously to benefit attractive children and adults. Such a bias is cause for concern insofar as it results in liabilities for the less attractive. Existing research, however, does not permit us to answer definitely whether attractiveness is an asset or whether unattractiveness is a liability in schools and organizations. More research, which includes a moderate level of attractiveness, is needed to distinguish these possibilities. It may be that attractive people are no better off than moderately attractive people (i.e., most people), but that both are better off than the unattractive.

Existing research also leaves unclear whether the advantage of attractiveness is entirely unjustified, especially in organizations. If attractiveness contributes tangibly to job performance, then a preference for attractive employees might be viewed more appropriately as a rational than as a biased preference. For example, attractive consultants may be more successful than less attractive consultants in obtaining and retaining clients, perhaps because they are perceived as more competent and thus inspire more confidence. The onus, however, is on demonstrating that attractiveness per se is responsible for enhanced job performance. If characteristics related to attractiveness are responsible (e.g., social skills), then selection

of employees should be based on these characteristics, not on attractiveness.

## APPENDIX

*Studies Included in the Meta-Analysis*

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