

THE EFFECTS OF APPEARANCE AND INTELLECTUAL DISABILITY IDENTIFICATION
ON PERCEPTIONS OF AND AFFECTIVE AND BEHAVIORAL INTENTIONS TOWARD
INDIVIDUALS WITH INTELLECTUAL DISABILITIES

by

JESSICA LYNN MCMANUS

B.A., University of Cincinnati, 2003

A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF SCIENCE

Department of Psychology
College of Arts and Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2010

Approved by:

Major Professor
Donald A. Saucier

Abstract

Research has shown that attributions and behavioral reactions toward individuals may be based on their appearance; our studies examined how appearance-based assessments for individuals with intellectual disabilities (IDs) determined how others think and react toward a target individual. Two studies examined the effects of appearance and identification on perceptions (i.e., agentic and communal traits) and behavioral reactions (i.e., self-efficacy expectations, anxiety, willingness to interact) toward targets. Studies 1 and 2 demonstrated that individuals with atypical appearances were rated higher on communal than agentic traits. Study 2 revealed that greater self-efficacy expectations and lower anxiety were associated with individuals with atypical appearances and individuals identified as having an ID. These studies increase understanding of perceiver-focused and target-focused factors related to bias toward individuals with IDs.

Table of Contents

List of Tables.....	vi
List of Figures.....	vii
Acknowledgements.....	viii
Introduction.....	1
Perceptions about Individuals with Intellectual Disabilities.....	4
Affective and Behavioral Reactions toward Individuals with Intellectual Disabilities.....	6
Thoughts and Beliefs.....	8
Previous Experiences.....	8
Efficacy Expectations.....	9
Anxiety.....	10
Appearance and Attitudes toward Individuals with Intellectual Disabilities.....	10
Overview and Hypotheses of the Current Studies.....	13
Study 1.....	14
Method.....	15
Participants.....	15
Measures.....	15
Pictures and Website.....	15
Agentic and Communal Traits.....	17
Anxiety.....	17
Willingness to Interact.....	18
Self-Efficacy Expectations.....	18
Previous Experiences with Individuals with Intellectual Disabilities.....	19

Attitudes toward Individuals with Intellectual Disabilities.....	20
Procedure.....	20
Results.....	21
Agentic and Communal Traits.....	21
Affective and Behavioral Reactions.....	22
Data Analytic Strategy.....	22
Self-Efficacy Expectations.....	23
Anxiety.....	24
Willingness to Interact.....	25
Descriptive Statistics and Correlations.....	26
Discussion.....	26
Agentic and Communal Traits.....	26
Affective and Behavioral Reactions.....	27
Study 2.....	28
Method.....	31
Participants.....	31
Measures.....	31
Pictures and Website.....	31
Additional Measures.....	32
Procedure.....	32
Results.....	32
Agentic and Communal Traits.....	32
Affective and Behavioral Reactions.....	35

Data Analytic Strategy.....	35
Self-Efficacy Expectations.....	36
Anxiety.....	39
Willingness to Interact.....	41
Descriptive Statistics and Correlations.....	43
Discussion.....	43
Agentic and Communal Traits.....	43
Affective and Behavioral Reactions.....	45
General Conclusion.....	47
References.....	54
Appendices.....	61

List of Tables

Table 1. Means and Standard Deviations for Predictor and Dependent Measures in Study 1.....78

Table 2. Correlations between Predictor and Dependent Measures in Study 1.....79

Table 3. Hierarchical Multiple Regression Analysis Predicting Self-Efficacy Expectations.....80

Table 4. Hierarchical Multiple Regression Analysis Predicting Anxiety.....81

Table 5. Hierarchical Multiple Regression Analysis Predicting Willingness to Interact.....82

Table 6. Means and Standard Deviations for Predictor and Dependent Measures in Study 2.....83

Table 7. Correlations between Predictor and Dependent Measures in Study 2.....84

Table 8. Hierarchical Multiple Regression Analysis Predicting Self-Efficacy Expectations.....85

Table 9. Hierarchical Multiple Regression Analysis Predicting Anxiety.....86

Table 10. Hierarchical Multiple Regression Analysis Predicting Willingness to Interact.....87

List of Figures

Figure 1. Ratings of Agentic and Communal Traits Based on Appearance in Study 1.....	88
Figure 2. Ratings of Agentic and Communal Traits Based on Appearance and Intellectual Disability Identification in Study 1.....	89
Figure 3. Interaction between Sex and Appearance on Self-Efficacy Expectations in Study 2...90	
Figure 4. Interaction between Quality of Contact and Appearance on Self-Efficacy Expectations in Study 2.....	91
Figure 5. Interaction between Quality of Contact and Appearance on Anxiety in Study 2.....	92
Figure 6. Interaction between Quality of Contact and Appearance on Willingness to Interact in Study 2.....	93
Figure 7. Interaction between Sex and Intellectual Disability Identification in Study 2.....	94
Figure 8. Interaction between Knowledge and Intellectual Disability Identification in Study 2..	95

Acknowledgements

I would like to especially thank everyone who helped to develop a seemingly simple idea into research studies and this final document! This of course includes my advisor, Dr. Donald Saucier and my committee members Dr. Timothy Frey and Dr. Brenda McDaniel. My amazing family and friends also deserve thanks for always being supportive in helping me reach my goals.

Introduction

Social categorization of ingroup or outgroup membership can be determined by many social indicators including appearance cues (e.g., skin color, facial features). Research has shown that appearance cues help individuals quickly assess if another individual belongs to the same racial, ethnic, sex, or age group (see Macrae & Bodenhausen, 2000 for review) or is the same sexual orientation (Rule, Ambady, Adams, & Macrae, 2007, 2008). Appearance cues can also aid in making attributions about personality characteristics and forming first impressions (Bar, Neta, & Linz, 2006; Hassin & Trope, 2000; Lennon, 1986; Willis & Todorov, 2006; Vazire, Naumann, Rentfrow, & Gosling, 2008), which may later influence behavioral reactions toward an individual (Dougherty, Turban, & Callender, 1994; Evans, Keine, Landry, & Crosby, 2000; Jones, 1986; Quigley-Fernandez, Malkis, & Tedeschi, 1985). These research findings suggest that within seconds of meeting another person, individuals not only can assess whether or not the other person is a member of their ingroup and make attributions about his or her personality characteristics, but can also influence their behaviors toward him or her.

Noting that appearance-based attributions may aid in cognitive functions, such as categorization, Allport (1954) states that social groups may have visible differences in their appearance and these differences may help us categorize group members into some type of preconceived category. Visible differences between social groups mentioned by Allport include sex, age, skin color, cast of features, gestures, prevalent facial expression, speech or accent, dress, mannerisms, religious practices, food habits, names, place of residence, insignia, hair texture, and facial features. In this regard, “unless there is some visible and conspicuous feature present in a group we have difficulty in forming categories concerning it, also in calling upon the category when we encounter a new member of this group. Visibility and identifiability aid in

categorization” (p. 129). Thus, the visible appearance of group members can sometimes highlight group differences.

It is possible that responses to and behavioral reactions toward group members are influenced by these appearance-based categories. With regard to our behavior, Allport (1954) says that, in general when individuals come in contact with things that look different, that means that they are different and learn to react differently (e.g., a black cloud, unlike a white cloud, is a general indicator of a storm and individuals may decide to carry an umbrella). Whereas individuals might expect different actions from objects with visible differences (e.g., clouds), actual visible differences in humans may or may not be linked to different behaviors; “where visibility does exist, it is almost always thought to be linked with deeper lying traits than is in fact the case” (p. 132, Allport, 1954). A prime example of this would be various racial or ethnic minorities in the United States where, historically, darker skin color has incorrectly indicated an inferior status (see Guthrie 2004 for review).

For some social groups, however, visible differences may be indicative of actual evaluative differences in personality characteristics, intelligence, or behaviors. For individuals with intellectual disabilities (ID), visible differences in appearance may be symbols that indicate that persons with the IDs may behave differently, have different intelligence levels, or have personality characteristics that are different from same-age individuals who do not have IDs. Richardson, Koehler, and Katz (1985) found that individuals with IDs, especially those with moderate and severe IDs, often have facial and behavioral atypicality based on central nervous system (CNS) impairments. In some cases, the CNS impairments can influence cranial and facial growth. As the severity of the ID increases, so do behavior disturbances, seizures, and speech, hearing, and vision disorders. In some instances, an atypical appearance can actually perpetuate

social, behavioral, and intellectual deficiencies. In their study, they collected appearance data from 165 individuals with various IDs. The appearance data they collected consisted of facial characteristics (e.g., asymmetry, unusual features, drooling, tics), other bodily features (e.g., physical handicaps, posture), movement (e.g., mannerisms, gestures), facial appearance (e.g., good looking, average, or ugly), and weight and height (e.g., obese, tall). They found that, as the severity of the ID increased, so did atypical appearance. They also found that individuals with IDs who also had CNS impairments had more atypicality in appearance than those who had IDs but no CNS impairments. This suggests that individuals with IDs may have visible differences in appearance.

There are some IDs that are often associated with certain physical characteristics. Individuals with Down Syndrome, for example, may have various distinguishing physical features such as a short stature, flat nasal bridge, skin folds of the upper eyelid that cover the inner corner of the eye, a short and wide neck, and broad hands with short fingers (Lovering & Percy, 2007). Likewise those with Fragile X Syndrome may have distinguishing physical features like a long face, prominent jaws and ears, and a “lazy-” or “cross-” eyed appearance (Mazzocco & Holden, 2007). Individuals with Fetal Alcohol Disorders may also have various distinguishing facial features such as a flat mid-face, short nose, thin upper lip, and small eye openings (Nulman, Ickowicz, Koren, & Knittel-Keren, 2007). Thus, various intellectual and developmental disabilities may have certain appearances associated with them that might distinguish individuals with these IDs apart from those who do not have these IDs. These research findings suggest that individuals with IDs may also have atypical facial features, especially those who have more severe IDs. It should be noted however that not all individuals with IDs have atypical appearances and that the reverse relationship is not always accurate.

Some individuals with physical handicaps, facial deformities, or developmental disabilities may have atypical appearances but do not have any limitations in their cognitive or intellectual functioning. The current set of studies then examined perceptions of and affective and behavioral reactions toward individuals with a typical appearance who do and do not have IDs as well as individuals with an atypical appearance who do and do not have IDs.

Perceptions about Individuals with Intellectual Disabilities

The research discussed earlier demonstrates that individuals make attributions about others based on their physical appearance. However, a framework to categorize the types of attributions that are made about these groups has not yet been discussed. Different frameworks have been introduced that aim to illustrate how members of one group describe, label, or stereotype members of another group. One such framework was introduced several decades ago and continues to influence contemporary research on stereotyping. Bakan (1966) introduced the terms *agency* and *communion* as complementary qualities that can be used to describe human nature. Agency he describes as qualities belonging to the individual, such as self-protection, self-assertion, and self-expansion. Communion, on the other hand, refers to an individual in contact with other individuals and might include qualities such as contact, openness, and union. Similarly, researchers have also attempted to conceptualize personality traits according to the dimensions of *social* and *intellectual* (Rosenberg, Nelson, & Vivekanathan, 1968). Intellectual traits such as skillful, industrious, and determined are similar to agentic traits. Likewise, social traits such as happy, popular, and sociable are similar to communal traits. Taking the approach of these researchers, we will use the term *agentic* to encompass both agentic (Bakan, 1966) and intellectual (Rosenberg et al., 1968) traits to describe an individual as competent, self-sufficient, and empowered to manage his or her life goals. We will use the term *communal* to encompass

both communal (Bakan, 1966) and social (Rosenberg et al., 1968) to describe an individual as sociable, emotional, and reliant on others to manage life goals.

Since Bakan's (1966) and Rosenberg et al.'s (1968) introduction of these terms into the psychological literature, researchers have empirically tested which agentic and communal traits are assigned to various stereotyped groups. Most notably, researchers have focused on how agentic and communal traits play a role in gender-based stereotyping (e.g., Conway, Pizzamiglio, & Mount, 1996; Deaux & Lewis, 1984; Eagly & Steffen 1984). In these studies, women have been found to be described as having communal traits such as kind, gentle, and warm whereas men were described as having more agentic traits such as competent, assertive, and independent. Researchers have also found that agentic and communal traits can be used, respectively, to describe high and low status occupations (Conway et al., 1996; Eagly & Steffen 1984), high and low wage earners (Johannesen-Schmidt & Eagly, 2002), high and low status regional and ethnic groups (Jost, Kivetz, Rubini, Guermanidi, & Mosso, 2005), women who use the Ms. and Mrs. titles (Malcomson & Sinclair, 2007), leader and follower roles in marital relationships (Gerber, 1988), and adolescent female runaways and non-runaways (Englander, 1984).

This research shows that it is not that members of lower-status groups are being evaluated negatively or in unfavorable terms (as they are often rated in terms of positive stereotypes such as warm, friendly, and kind), rather research on system-justifying ideologies (e.g., Jost et al., 2005) suggests that by describing a low status group using communal traits, members of this group are assumed to be less powerful and more deserving of their low status roles. By perceiving individuals of low-status groups as more communal and less agentic, it may allow individuals to justify the inequality through the creation of system-justifying ideologies (e.g., Jost et al., 2005). System-justifying ideologies perpetuate inequality by naming dispositional

factors as explanations for why low-status groups are in a certain position on the social hierarchy. Using research described earlier that has found women to be rated as higher on communal but not agentic traits, system justifying ideologies would purport that because women are more caring, nurturing, and sociable, they are not capable of tasks or filling social roles that require independence and assertiveness.

While research has examined the agentic and communal traits assigned to many social groups, researchers have yet to focus on agentic and communal traits assigned to individuals with IDs. A similar area where researchers have focused their attention is examining stereotypes about individuals with IDs and has shown that individuals with IDs are rated as happy, affectionate, and friendly (e.g., Gilmore, Campbell, & Cuskelly, 2003), traits which might be considered communal. Additionally, researchers have found that public feels sorry for individuals with IDs who are typically perceived as needing special favors (Miller & Clarke, 1991), suggesting that individuals with IDs are not perceived to be independent and may be less likely to possess agentic traits. The current study tested these suggestions by specifically investigating which agentic and communal traits were assigned to individuals with IDs. As a social group that is generally given a lower social status, we predicted that individuals with IDs would be more likely to be rated using positive, yet communal terms, rather than agentic terms. If this is shown to be the case, then use of these stereotypes could be a form of system-justification wherein individuals with IDs are limited by social labels which state that they are friendly and nice, but incapable of independence and performing tasks that require cognitive skills.

Affective and Behavioral Reactions toward Individuals with Intellectual Disabilities

In addition to assessing perceptions of individuals with IDs, the current study also examined affective and behavioral reactions toward individuals with IDs, and by doing this, this study will have encompassed all three major components of bias: stereotypes, prejudice, and discrimination (Eagly & Chaiken, 1993). Corresponding to these components of bias, research has demonstrated that in addition to being described using different terms, persons with IDs are discriminated against, avoided in certain social situations, and treated differently than individuals without IDs (e.g., Abbott & McConkey, 2006; Akrami, Ekehammar, Claesson, & Sonnander, 2006; Cooney, Jahoda, Gumly, & Knott, 2006; Furnham & Pendred, 1983; Gorfin & McGlaughlin, 2005; Halperin & Merrick, 2006; May, Dobush, Endres, Getto, Paterson, Zipkin, & Kundert, 1992). One possible explanation for this avoidance is that individuals generally have not had many experiences interacting with individuals with IDs (Akrami, et al., 2006; Beh-Pajooh, 1991; Hudson-Allez & Barrett, 1996; Krajewski & Flaherty, 2000; Yazbeck McVilly, & Parmenter, 2004), which limits what they know about how to interact and their overall comfort level in situations with persons with IDs (e.g., Furnham, 1995; Thomas, Palmer, Coker-Juneau, & Williams, 2003). With few experiences and little knowledge about how to interact, individuals may experience anxiety in interactions with individuals with IDs.

Intergroup anxiety has been explored in research on racial prejudice and discrimination. Plant and Devine (2003) have theorized how anxiety influences attitudes and behaviors in interracial interactions. As defined by Plant and Devine (2003), intergroup anxiety can be described as, “feelings of tension and distress that result when interacting with a person from a different social group” (p. 790). They introduced a model that stated that negative thoughts, beliefs, and previous experiences with the outgroup lead to negative expectations about future interracial interactions. The negative expectations then lead to greater intergroup anxiety, which

in turn increases the likelihood of avoidance (e.g., aversive racism theory; Gaertner & Dovidio, 1986) or heightened hostility (e.g., ambivalent racism theory; Katz & Haas, 1988) toward outgroup members. Thus, anxiety related to interactions with members of another social group can lead to more negative attitudes, unfair treatment, avoidance, or exclusion of members of outgroups.

There appear to be several relevant and interrelated key variables described in this model that can explain why avoidance might occur in interracial interactions. Plant and colleagues (Plant, 2004; Plant & Butz, 2006; Plant, Butz, & Tatakovsky, 2008) continued to research avoidance in intergroup interactions in relation to variables such as thoughts and beliefs about members of another group, previous intergroup experiences, efficacy expectations about intergroup interactions, and anxiety about future intergroup interactions. As elaborated below, each of these components may theoretically extend to describe prejudice and discrimination toward individuals with IDs.

Thoughts and beliefs. Thoughts and beliefs about members of another group may influence whether or not individuals have the desire to or actually interact with members of that group. Research that examines Whites' attitudes toward Hispanics and Hispanics' attitudes toward Whites shows that greater negative attitudes are related to greater avoidance in interethnic interactions (Plant et al., 2008). If individuals do not have general positive attitudes toward individuals with IDs, then it should be expected that they would be more likely to avoid interactions involving individuals with IDs.

Previous experiences. Previous experiences with members of another group may also influence whether or not individuals have the desire to or actually interact with members of that group. Involving interracial interactions, research has shown that Whites who have had more

positive experiences with Blacks are less likely to have interracial anxiety and more likely to interact with Blacks in future situations (Plant, 2004). This same study showed that Whites who had positive experiences with Blacks report more anxiety and a desire to avoid future interactions with Blacks. More positive interethnic experiences have also been shown to be related to a lesser desire to avoid interactions with members of a different racial or ethnic group (Plant et al., 2008; Plant & Devine, 2003). With regard to interactions with individuals with IDs, if individuals have had limited experiences and/or primarily negative experiences with individuals with IDs, they may be more likely to avoid interactions involving individuals with IDs.

Efficacy expectations. Individuals' perceptions of their own ability and competency to interact with member of another group may influence whether or not individuals have the desire to or actually interact with members of that group. Research has shown that individuals who anticipate that a future interracial interaction would be awkward due to them experiencing difficulty and not knowing what to say, report fewer efficacy expectations regarding the interracial interaction, greater anxiety about the interaction, and greater desire to avoid the interaction (Plant & Butz, 2006). This same study also found that in actual interracial interactions, those with negative efficacy expectations reported greater anxiety and greater desire to avoid future interactions, and exhibited anxious and awkward behaviors. Greater efficacy expectancies have also been found to be related to a lesser desire to avoid an interaction with members of a different ethnic group (Plant et al., 2008). Extending these findings to interactions with individuals with IDs, if individuals do not think they can have a successful interaction with individuals with IDs they may be more likely to avoid a situation where this interaction might occur. When they have the choice, the individuals may choose not to interact with individuals

with IDs because they feel they might not have anything to discuss, not know how to interact, or be unable to form a positive impression on others.

Anxiety. Individuals' feelings of anxiety in interactions with members of another group may influence whether or not individuals have the desire to or actually interact with members of that group. Greater anxiety in intergroup interactions, as noted earlier in several studies (Plant, 2004; Plant & Butz, 2006; Plant & Devine, 2003), may work in conjunction with other variables to influence an individual's desire to avoid interactions with members of a certain group.

Measuring anxiety by itself, researchers have shown that greater anxiety in intergroup interactions is related to greater avoidance (Plant, 2004; Plant et al., 2008; Plant & Devine, 2003). If individuals have a high degree of anxiety about interacting with persons with IDs, they may be less inclined to interact with those individuals. By not entering in the interaction, individuals then alleviate any feelings of anxiety that they may have otherwise experienced.

The research described suggests that in intergroup interactions, an individual's desire to interact with members of another group may be dependent on several different, interrelated factors. Following Plant and Devine's (2003) model, this is to say that attitudes about and previous experiences with members of another group may create some anxiety about future interactions with members of that group. This anxiety, along with individuals' perceptions of their own ability to successfully interact with members of this group (i.e., efficacy expectations), may lead to greater avoidance of intergroup interactions.

Appearance and Attitudes toward Individuals with Intellectual Disabilities

The current studies explored the idea that prejudice and discrimination toward individuals with IDs may be related to individuals' anxiety and perceptions of their own ability to interact with individuals with IDs in conjunction with the appearance of the individual who has an ID. A

similar study (Siperstein & Gottlieb, 1977) varied the appearance and competence of a target child to determine factors that might influence social acceptance of children with IDs. Ratings of target children were compared between each of the following four conditions: a competent child with a typical appearance, a competent child with a Down Syndrome appearance, a non-competent child with a typical appearance, and a non-competent child with a Down Syndrome appearance. One interesting finding in this study was that when the target child was competent at spelling age-appropriate words, appearance made a difference in ratings of the target child. Specifically, a greater number of participants believed themselves to be better spellers than the competent child with a Down Syndrome appearance than the competent child with a normal appearance. Further, the target child with a typical appearance was rated more positively than the target child with a Down Syndrome appearance. The results of this study show that, regardless of actual competence, having a stigmatizing appearance can influence attitudes toward a target individual.

The current studies extended this previous research in important ways. First, we examined the differences in perceptions of and affective and behavioral reactions toward not only the appearance of a target individual but also whether or not the individual had an ID (this variable will be referred to as *ID identification* throughout the rest of this paper). As noted earlier, individuals who have an ID may or may not have an atypical appearance and individuals with atypical appearances do not always actually have IDs. Therefore in the current studies, while viewing a picture of an individual, participants noted both the appearance and the ID identification of the individual. We were interested not only in reactions toward the individuals whose appearance and identification is consistent (a typical appearance and no ID and an atypical appearance and ID) but also those whose appearance and identification are inconsistent

(a typical appearance and ID and an atypical appearance and no ID). Secondly, we did not inform participants of the target individual's competence because doing so might have otherwise influence their ratings on the individual's agentic trait ratings. We were interested in how appearance and identification alone influenced ratings of agentic traits and providing information about the individual's competence could have increased or decreased these ratings.

To vary both the appearance and ID identification of the target individual, the current studies also used a social networking paradigm where participants viewed a picture and read information about the target individual before completing measures that assessed perceptions of and behavioral reactions toward the target individual. The paradigm used a social networking website that is commonly used by undergraduate students. By employing this paradigm, we utilized a website where undergraduate students may have actually formed perceptions about other individuals and made decisions about whether they would actually want to interact with the individual at a later time outside of a laboratory, thus increasing the external validity of our study. Theoretically, the measures used in this study included individual difference variables previously found to influence interactions with members of various racial groups (Plant, 2004; Plant & Butz, 2006; Plant et al., 2008). In the current studies, we predicted that these individual difference variables would interact with the appearance and ID identification of a target individual. We therefore not only looked at how appearance and ID identification influenced perceptions and behavioral reactions, but also how these variables interacted with individuals' attitudes toward individuals with IDs, amount and quality of previous experiences with individuals with IDs, and knowledge about IDs.

We included measures that assessed participants' perceptions of as well as their affective and behavioral reactions toward a target individual. By doing this we assessed how individuals

may feel, think, and behave toward a target individual, encompassing all three major components of bias (Eagly & Chaiken, 1993). Finally, our participants were college-aged students, rather than children, whose attitudes are more representative of adult populations. While adults' attitudes toward individuals with IDs have become an increasingly more common topic of research (e.g., McManus, Feyes, & Saucier, under review; Yazbeck et al., 2004), research has typically examined children's attitudes toward their peers with IDs (see Fishbein, 2002; Siperstein, Norins, & Mohler, 2007).

Overview and Hypotheses of the Current Studies

The current paper includes two research studies. In the first study, we examined the effects of appearing to have an ID on ratings of agentic and communal traits by employing a 2 (appearance) x 2 (trait type) mixed factorial design with trait-type as the between-groups factor. Additionally, we examined the effects of individual difference variables (sex, attitudes toward individuals with IDs, previous experiences with individuals with IDs, and knowledge about IDs) and appearance on participants' self-efficacy expectations, anxiety levels, and willingness to interact in a potential interaction involving a target individual who appeared or did not appear to have an intellectual disability. We expected that target individuals who appeared to have an ID would be rated lower on agentic and communal traits compared to target individuals who did not appear to have an ID. Additionally, we expected that participants would have lower self-efficacy expectations, higher anxiety, and would be less willing to interact in an interaction with a target individual who appeared to have an ID compared to an individual who did not appear to have an ID. We also predicted that appearance would interact with individual difference measures so that individuals who have more positive attitude toward individuals with IDs, greater quality and quantity of contact with individuals with IDs, and greater knowledge about IDs would have

higher self-efficacy expectations, less anxiety, and would be more willing to interact in an interaction with a target individual who appears to have an ID.

In the second study, we examined the effects of having the appearance of having an ID paired with ID identification (whether or not the individual actually has an ID) on ratings of agentic and communal traits using a 2 (appearance) x 2 (identification) x 2 (trait type) mixed factorial design with trait type as the within-groups factor. Additionally, we examined the effects of individual difference variables (sex, attitudes toward individuals with IDs, previous experiences with individuals with IDs, and knowledge about IDs), appearance, and identification on participants' self-efficacy expectations, anxiety levels, and willingness to interact in a potential interaction involving a target individual. We expected that target individuals who appeared to have an ID and were identified as having an ID would be rated lower on agentic and communal traits compared to target individuals who did not appear to have an ID and were not identified as having an ID. Additionally, we expected that participants would have lower self-efficacy expectations, higher anxiety, and would be less willing to interact in an interaction with a target individual who appeared to have an ID and was identified as having an ID compared to an individual who did not appear to have an ID and did not have an ID. However, we expected appearance and ID identification to interact with each of the individual difference variables such that participants who have more positive attitudes toward individuals with IDs, greater quantity and quality of contact with individuals with IDs, and more knowledge about IDs would have higher self-efficacy expectations, less anxiety, and would be more willing to interact in an interaction with an individual who appeared to have an ID and was identified as having an ID.

Study 1

In the first study, we investigated how having the appearance of having an intellectual disability influenced perceptions of an individual, as well as affective and behavioral reactions toward that individual. Additionally, we examined how individual differences concerning attitudes toward individuals with IDs, the quantity and quality of previous contact with individuals with IDs, and knowledge about IDs influenced perceptions of and affective and behavioral reactions toward a target individual who appeared to have an ID.

Study 1 examined the effects of appearance on perceptions of and affective and behavioral reactions toward a target individual. The measures used incorporated all three components of bias (Eagly & Chaiken, 1993) and theoretically extended the work of Plant and colleagues (Plant, 2004; Plant & Butz, 2006; Plant & Devine, 2003; Plant et al., 2008) to see how various individual difference variables interacted with appearance to influence perceptions of and behavioral reactions toward a target individual. Finally, Study 1 used an externally valid social networking paradigm to manipulate the appearance of the target individual.

Method

Participants

Participants ($N = 120$) were recruited from their introductory psychology classes and received credit toward their general psychology research requirement for their participation. A majority of the participants were female (62.5%), White (85.8%), and in their first-year of college (69.2%). The participants' mean age was 18.92 ($SD = 2.03$).

Measures

Pictures and website. In order to test the hypothesis that appearance would influence perceptions of and behavioral reactions toward an individual, the current study embedded a picture of an individual in a website profile (see Appendix A). Participants viewed either a black-

and-white picture of a male who appeared to have an ID or a male who did not appear to have an ID. A picture of a male who had physical facial characteristics of having an intellectual disability (e.g., flat nasal bridge, a short and wide neck, and small eye openings; Lovering & Percy, 2007; Mazzocco & Holden, 2007; Nulman et al., 2007) was selected to be used in the atypical appearance condition. Photoshop CS4 (2008) was used to alter his facial features so that he appeared to have a more typical appearance. The two pictures then showed males with similar clothing, eye color, hair color, length, and style situated on a similar background; the only difference between the two was their facial characteristics.

The pictures were pilot tested to ensure that participants thought the individual with the typical appearance did not appear to have an intellectual disability and that the individual with the atypical appearance did appear to have an intellectual disability. Sixty participants (50% female; mean age = 20.25, $SD = 1.48$) viewed one of the two pictures and were asked to rate the extent to which the person pictured has an intellectual disability using a 1 (*extremely unlikely*) to 9 (*extremely likely*) Likert scale. An independent samples *t*-test revealed that the male with the atypical appearance was rated as more likely to have an intellectual disability ($M = 7.03$, $SD = 1.40$) than the male with the typical appearance ($M = 3.50$, $SD = 2.01$), $t(58) = 7.89$, $p < .001$. This test confirmed that the pictures were suitable to be used with the experimental conditions of the study.

Using the format of a website, we were able to control the information participants received about the individual they saw pictured. A website page whose format is similar to Facebook.com was used (see Appendix B). This format was selected because undergraduates are familiar with the format of Facebook and frequently use the website as a social networking tool. The information provided about the pictured individual included his interest in activities

common to college undergraduates (e.g., school, work, hanging out with friends). In addition to his interests, we also had the ability to provide general information about the pictured individual, including his birth date, sex, and hometown. In Study 1, we did not specify whether or not the pictured individual had an ID.

After viewing the profile, participants were asked 10 yes or no questions about the person they saw pictured. These questions are designed to increase the likelihood that participants looked at the picture (e.g., *Matt has brown hair*) and the information in the profile (e.g., *Matt likes the music that I like*) before responding to any of the following sections of the questionnaire.

Agentic and communal traits. After viewing a picture of an individual, participants rated the individual on various characteristics using a 1 (*not very descriptive*) to 9 (*very descriptive*) Likert scale (see Appendix C). Characteristics included 19 agentic traits (e.g., *ambitious, intelligent, productive*) and 19 communal traits (e.g., *friendly, happy, warm*) that have been used in previous research (Conway et al., 1996; Eagly & Steffen, 1984; Gerber, 1988; Hoffman & Hurst, 1990; Johannesen-Schmidt & Eagly, 2002; Jost & Kay, 2005; Jost et al., 2005; Rosenberg et al., 1968). The items representing agentic ($\alpha = .91$) and communal ($\alpha = .92$) traits were found to be reliable.

Anxiety. To assess participants' anxiety levels related to a potential interaction with the pictured individual, participants responded to items about their anxiety in potentially interacting with the individual they saw pictured (see Appendix D). Using a 1 (*strongly disagree*) to 9 (*strongly agree*) Likert scale, participants responded to 4 items ($\alpha = .83$) regarding anxiety in potentially interacting with the individual (e.g., *I would feel awkward interacting with Matt in*

person; Plant et al., 2008; Plant & Devine, 2003). Higher scores on this measure indicated greater anxiety in the potential interaction.

Willingness to interact. Participants responded to 5 items ($\alpha = .94$) on a 1 (*strongly disagree*) to 9 (*strongly agree*) Likert scale about their willingness to interact with the individual they saw pictured (see Appendix E). The items used are adapted from previous research on racial interactions (e.g., *I would look forward to interacting with Matt in person*; Plant et al., 2008; Plant & Devine, 2003). Higher scores on this item indicated a greater willingness to interact with the pictured individual.

Self-efficacy expectations. To assess participants' self-efficacy expectations about a potential interaction with the pictured individual, participants responded to items about their confidence in interacting with the individual they saw pictured (see Appendix F). Participants responded to 13 items ($\alpha = .86$) about their self-efficacy expectations in a potential interaction on a 1 (*strongly disagree*) to 9 (*strongly agree*) Likert scale. These items have been adapted from previous research on racial interactions (e.g., *I m confident that I can respond without prejudice when interacting with Matt in person*; Plant et al., 2008; Plant & Devine, 2003). Higher scores on this measure indicated greater self-efficacy expectations in the potential interaction.

Because the amount of knowledge an individual has about persons with IDs might influence his or her self-efficacy expectations, participants responded to 11 additional items ($\alpha = .80$) regarding the amount of knowledge they have about individuals with IDs (see Appendix G; e.g., *I think I know more about intellectual disabilities more than other people*). These items have been used in previous research regarding attitudes toward individuals with IDs

(McManus et al., under review). Higher scores on this measure indicated greater knowledge about intellectual disabilities.

Previous experiences with individuals with intellectual disabilities. In order to examine previous experiences with individuals with IDs, participants responded to 15 items about the nature and extent of their previous contact (see Appendix H). Nine items ($\alpha = .75$) examined the amount of previous experience, or quantity of contact, participants have had with individuals with intellectual disabilities. Four of these items have been adapted from previous research on racial interactions (e.g., *In the past, I have interacted with individuals with intellectual disabilities in many areas of my life*; Plant & Devine, 2003) and 5 have been specifically used in research on attitudes toward individuals with IDs (e.g., *In high school, I had frequent interactions with people with intellectual disabilities*; McManus et al., under review). Higher scores on this measure indicated greater quantity of contact with individuals with IDs.

In addition to gathering information about the amount of previous experiences, we also asked participants to rate the quality of the interactions they have had with individuals with IDs using 6 items ($\alpha = .90$). Three of these items have been adapted from previous research on racial interactions (e.g., *In the past, my experiences with individuals with intellectual disabilities have been pleasant*; Plant et al., 2008; Plant & Devine, 2003) and 3 items have been specifically used in research on attitudes toward individuals with IDs (e.g., *Overall I have had positive experiences with people with intellectual disabilities*; McManus et al., under review). Higher scores on this measure indicated greater quality of contact with individuals with IDs.

Participants responded to all experience items using a 1 (*strongly disagree*) to 9 (*strongly agree*) Likert scale.

Attitudes toward individuals with intellectual disabilities. The Mental Retardation Attitude Inventory-Revised (MRAI-R; Antonak & Harth, 1994) was used to assess participants' overall attitudes toward individuals with intellectual disabilities (see Appendix I). This measure ($\alpha = .88$) has twenty-nine items where higher scores indicated positive attitudes toward individuals with intellectual disabilities (e.g., *The child who has an intellectual disability should be integrated into regular classrooms in school*). Participants responded using a 1 (*strongly disagree*) to 9 (*strongly agree*) Likert scale.

Procedure

This study was divided into three parts. Participants were told that each of the three parts was a separate research study so that their responses to one set of items would be less likely to influence their responses on a later set of items. In the first part of the study, participants were asked about their attitudes toward individuals with IDs, their previous experiences with individuals with IDs, and the amount of knowledge they have about individuals with IDs. The second part of the study consisted of filler measures not associated with the current study. These items served as a distracter so that participants were less likely to make the association between the first part of their study assessing their attitudes and previous contact with individuals with IDs and the last part of the study which had them look at a picture of an individual who might appear to have an ID.

In this last part, participants were randomly assigned to one of two conditions in which they were shown a website profile with either a picture of: (1) an individual who did not appear to have an ID (typical appearance condition), or (2) an individual who did appear to have an ID (atypical appearance condition). As a cover story, participants were told that they were participating in a study that examined how information left out of a social profile might influence

how individuals feel about that person and that we are presenting this additional information before viewing the individual's profile. In Study 1, examples of this information included *He has an older sister and two younger brothers* and *He likes Wii bowling with his friends in the dorms*. Participants were shown this picture embedded in a website profile (described earlier) and then completed measures that assessed perceived characteristics about the pictured individual and participants' affective and behavioral reactions. These measures included ratings of agentic and communal traits, self-efficacy expectations, anxiety, and willingness to interact with the pictured individual. Completing the measures in the three parts of the study and viewing the website profile took participants approximately one hour. After completing the study, participants were thanked and debriefed.

Results

Agentic and Communal Traits

A 2 (appearance) x 2 (trait type) mixed-groups factorial ANOVA with trait type as the within-groups variable was used to compare average ratings of agentic and communal traits for the individual who did not appear to have an ID (typical appearance condition) and the individual who did appear to have an ID (atypical appearance condition).

We expected that the individual with a typical appearance would be rated higher on both agentic and communal traits when compared to the individual with an atypical appearance. Further, we predicted that the difference between ratings of agentic and communal traits for the individual with the atypical appearance will be greater than the difference between ratings of agentic and communal traits for the individual with the typical appearance.

Results revealed that there was a significant main effect for trait type ($F(1, 110) = 29.76$, $p < .001$; $d = .51$) such that the pictured individual was rated higher on communal traits ($M =$

6.48, $SD = 1.02$) compared to agentic traits ($M = 6.17$, $SD = 1.02$). There was not a significant main effect for appearance ($F(1, 110) = .23$, $p = .634$; $d = .05$). The main effect for trait type was qualified by the two-way interaction between trait type and appearance ($F(1, 110) = 6.21$, $p = .014$; $d = .23$). The interaction was probed using a simple effects analysis. These results revealed that while the individual with the typical appearance was rated higher on communal traits ($M = 6.45$, $SD = 0.92$) than agentic traits ($M = 6.28$, $SD = 0.88$) ($F(1, 110) = 4.38$, $p < .05$; $d = .20$), the difference between ratings of communal ($M = 6.51$, $SD = 1.13$) and agentic traits ($M = 6.05$, $SD = 1.12$) was greater for the individual with the atypical appearance, $F(1, 110) = 31.55$, $p < .05$; $d = .53$. This suggests that while in general each individual was rated higher on communal traits, when he appeared as though he might have an intellectual disability, he was perceived to be much higher on communal traits (e.g., friendly) than agentic traits (e.g., intelligent). These results are shown in Figure 1.

Affective and Behavioral Reactions

Data analytic strategy. Hierarchical multiple regressions were used to examine the extent to which having the appearance of having an intellectual disability predicted participants' self-efficacy expectations, anxiety levels, and willingness to interact in a potential interaction with a target individual. Step 1 of the regression controlled for participant sex. Step 2 contained variables related to participants' attitudes toward individuals with IDs, the quantity of contact they have had with individuals with IDs, the overall quality of this contact, and the amount of previous knowledge they have about IDs. Step 3 contained the variables carrying the main effect for appearance; this variable was coded so that a 0 represented the conditions in which participants viewed a picture of an individual with a typical appearance and a 1 represented the

atypical appearance conditions. Step 4 contained the variables carrying the two-way interactions between the variables in Steps 1 through 3 (e.g., attitudes x appearance).

Self-efficacy expectations. The sex of the participants was unrelated to self-efficacy expectations ($\beta = -.01, p = .957$). It was predicted that after controlling for participant sex, each of the individual difference variables added in Step 2 would be uniquely and significantly related to self-efficacy expectations such that participants with more positive attitudes about individuals with IDs, greater quality and quantity of contact with individuals with IDs, and more knowledge about IDs would have greater self-efficacy expectations regarding a potential interaction with the individual they saw pictured. Consistent with this prediction, the addition of Step 2 significantly improved the model ($\Delta R^2 = .15, p = .002$). However, only two of the four predictors uniquely predicted self-efficacy expectations. Those with more positive attitudes toward ($\beta = .31, p = .011$) but less knowledge about ($\beta = -.26, p = .036$) individuals with IDs had higher self-efficacy expectations regarding this potential interaction. Quantity and quality of contact were unrelated to self-efficacy expectations ($\beta = -.03-.16, ps = .236-.815$). Regardless of the individual's appearance, then, participants who had more positive attitudes toward individuals with IDs but less knowledge about IDs were more likely to believe that they could interact with the pictured individual without coming across as prejudiced.

We also predicted that the addition of Step 3 would significantly improve the model such that appearance would have a main effect on self-efficacy expectations above and beyond the predictor variables in Steps 1 and 2 such that greater self-efficacy expectations would be associated with an individual with a typical appearance rather than an atypical appearance. Results revealed that the addition of this step was not significant ($\Delta R^2 = .02, p = .172$) and the appearance of the pictured individual was unrelated to self-efficacy expectations ($\beta = -.13, p =$

.172). Although we had hypothesized that greater self-efficacy expectations would be associated with the individual with a typical appearance, our results did not confirm this hypothesis.

Finally, we predicted that the addition of Step 4 would significantly improve the model and that each of the two-way interactions would be uniquely and significantly related to self-efficacy expectations above and beyond the individual difference variables in Steps 1 and 2 and appearance in Step 3. Specifically, we expected appearance to interact with individual difference variables so that those who have more positive attitudes toward individuals with IDs, greater quantity and quality of contact with individuals with IDs, and more knowledge about IDs to have higher self-efficacy expectations when shown the picture of the individual with an atypical appearance than would those who have more negative attitudes toward individuals with IDs, lesser quantity and quality of contact with individuals with IDs, and less knowledge about IDs. Results revealed that the addition of Step 4 was not significant ($\Delta R^2 = .04, p = .499$) and none of the two-way interactions uniquely predicted self-efficacy expectations (β s = $-.17$ -. $46, p$ s = $.272$ -. 756). These results are shown in Table 3.

Anxiety. Step 1 of the regression analysis showed that participant sex was unrelated to anxiety ($\beta = -.16, p = .090$). It was predicted that after controlling for participant sex, each of the individual difference variables added in Step 2 would have a negative, unique, and significant relationship with self-reported anxiety regarding a potential interaction with the individual they saw pictured. Consistent with this prediction, the addition of Step 2 significantly improved the model ($\Delta R^2 = .11, p = .011$). However, only two of the four predictors uniquely predicted anxiety. Those with greater quality of contact with ($\beta = -.48, p = .001$) but less knowledge about ($\beta = .25, p = .045$) individuals with IDs had less anxiety regarding this potential interaction. Attitudes and quantity of contact were unrelated to anxiety (β s = $-.02$ -. $15, p$ s = $.215$ -. 867). Thus,

participants with greater positive experiences but less knowledge about individuals with IDs had less anxiety regarding an interaction with the pictured individual, regardless of that individual's appearance.

We also predicted that the addition of Step 3 would significantly improve the model such that individuals would report less anxiety when they saw the picture of the individual with a typical appearance. Results revealed that the addition of this step was not significant ($\Delta R^2 = .01$, $p = .203$) and the appearance of the pictured individual was unrelated to anxiety ($\beta = .06$, $p = .203$). These results did not confirm our hypothesis.

Finally, we predicted that the addition of Step 4 would significantly improve the model and that appearance would interact with each of the individual difference variables so that each of these two-way interactions would be uniquely and significantly related to anxiety. Results revealed that the addition of Step 4 was not significant ($\Delta R^2 = .06$, $p = .196$) and none of the two-way interactions uniquely predicted anxiety (β s = $-.60$ -. 16 , p s = $.263$ -. 655). These results are shown in Table 4.

Willingness to interact. Willingness to interact with the pictured individual was not associated with participant sex ($\beta = .10$, $p = .307$). We predicted that after controlling for participant sex, each of the individual difference variables added in Step 2 would have a positive, unique, and significant relationship with willingness to interact with the individual they saw pictured. Consistent with this prediction, the addition of Step 2 significantly improved the model ($\Delta R^2 = .28$, $p < .001$). However, only one of the four predictors uniquely predicted willingness to interact. Those with greater quality of contact with individuals with IDs ($\beta = .52$, $p < .001$) reported that they were more willing to interact with the pictured individual. Attitudes, quantity of contact, and knowledge were unrelated to willingness to interact (β s = $-.12$ -. 13 , p s = $.076$ -

1.000). Thus, participants with greater positive experiences with individuals with IDs were more willing to interact with the pictured individual, regardless of that individual's appearance.

We also predicted that the addition of Step 3 would significantly improve the model such that individuals would report a greater willingness to interact with the individual with a typical appearance. However, inconsistent with our hypotheses, results revealed that the addition of this step was not significant ($\Delta R^2 = .01, p = .213$) and the appearance of the pictured individual was unrelated to willingness to interact ($\beta = -.11, p = .213$).

Finally, we predicted that the addition of Step 4 would significantly improve the model and that appearance would interact with each of the individual difference variables so that each of these two-way interactions would be uniquely and significantly related to willingness to interact with the pictured individual. Results revealed that the addition of Step 4 was not significant ($\Delta R^2 = .05, p = .155$) and none of the two-way interactions uniquely predicted willingness to interact ($\beta = -.20-.68, ps = .166-.991$). These results are shown in Table 5.

Descriptive Statistics and Correlations

Table 1 displays descriptive statistics (i.e., means, standard deviations, and alphas) for each of the measured variables in Study 1. Table 2 shows the correlations between all of the predictor and dependent measures in Study 1.

Discussion

Agentic and Communal Traits

Study 1 demonstrated that the difference between ratings of agentic and communal traits was greater for the individual who appeared to have an ID than for the individual who did not appear to have an ID. This suggests that individuals who appear to have an ID are perceived to

be much more likely to possess communal traits (e.g., happy and friendly) than agentic traits (e.g., smart and independent).

These results are consistent with previous research that shows that attitudes toward individuals with IDs are generally less favorable than individuals without IDs (e.g., Abbott & McConkey, 2006; Akrami et al., 2006; Cooney et al., 2006; Funham & Pendred, 1983) and with research that has found that members of lower status groups are more likely to be described using terms such as kind, gentle, and warm (i.e., communal traits) and less likely to be described using terms such as competent, assertive, and independent (i.e., agentic traits) (e.g., Conway et al., 1996; Deaux & Lewis, 1984; Eagly & Steffen, 1984; Gerber, 1988; Johnson-Schmidt & Eagly, 2002; Jost et al., 2005). Further, the discrepancies in perceptions of agentic and communal traits were based on viewing a picture of an individual, demonstrating the role that appearance has in making impressions of others (Bar et al., 2006; Hassin & Trope, 2000; Lennon, 1986; Macrae & Bodenhausen, 2000; Rule et al., 2007, 2008; Willis & Todorov, 2006; Vazire et al., 2008).

Affective and Behavioral Reactions

Consistent with previous research on interracial interactions (Plant, 2004; Plant et al., 2008; Plant & Butz, 2006), we predicted that participants would report lower self-efficacy expectations, greater anxiety, and a lesser desire to interact in an interaction with an individual who appeared to have an ID compared to an individual who did not appear to have an ID. We also anticipated that appearance would interact with individual difference variables so that individuals who had more positive attitudes about individuals with IDs, more contact and positive experiences with individuals with IDs, and more knowledge about IDs would have

greater self-efficacy expectations, less anxiety, and a greater desire to interact in a potential interaction with an individual who appears to have an ID.

These hypotheses were not supported by our results. While we did find that some of the individual difference variables predicted reactions toward the pictured individual, we did not find that the appearance of that individual influenced self-efficacy expectations, anxiety, or willingness to interact with the target. Specifically, we found that more positive attitudes toward individuals with IDs was associated with greater self-efficacy regarding a potential interaction; those with greater positive experiences with individuals with IDs (i.e., greater quality of contact) reported less anxiety and a greater willingness to interact with the pictured individual; and those with more knowledge about IDs reported lower self-efficacy interactions and greater anticipated anxiety regarding an interaction with the pictured individual; and quantity of contact with individuals with IDs had no influence reactions toward the target. It should be noted that each of these effects occurred regardless of the appearance of the individual. Despite our predictions, we did not find that participants had greater self-efficacy expectations, less anxiety, and a greater willingness to interact with an individual with a typical appearance. Although these results did not support our hypotheses, they suggest that individuals may recognize that the target individual may have an ID, but do not believe that it will influence how they will react toward him or her. Additionally, because the individual who appeared to have an ID was perceived to be higher on communal traits, participants may have perceived that they would be able to have a successful social interaction with the target; individuals may therefore believe that any potential interaction with an individual who appeared to have an ID would be no more or less stressful or enjoyable than an interaction with any other peer who they have not met.

Study 2

While it could be the case that an individual has an ID and an atypical appearance (e.g., individuals with Down Syndrome, Fragile X), some individuals might have an ID but no differences in appearance (e.g., individuals with learning disabilities), or may have a noticeable difference in appearance but no ID (e.g., individuals with Cerebral Palsy or physical disabilities). Therefore in the second study, we investigated how both having the appearance of having an intellectual disability and whether or not the individual actually had an intellectual disability influenced perceptions of an individual, as well as affective and behavioral reactions toward that individual. Throughout the remainder of this paper, we will use the term *ID identification* to refer to whether or not the individual was confirmed to actually have an ID. Additionally, we examined how individual differences concerning attitudes toward individuals with IDs, the quantity and quality of previous contact with individuals with IDs, and knowledge about IDs influenced perceptions of and affective and behavioral reactions toward a target individual that might appear to and be identified as having an ID. That is, we were interested in examining the interactions between individual differences and appearance as well as individual differences and ID identification on affective and behavioral reactions toward a target individual.

In Study 2, we proposed two competing hypotheses concerning ratings of agentic and communal traits for individuals who appeared to have an ID but may or may not actually have an ID and for individuals who did not appear to have an ID but may or may not actually have an ID. The first possible hypothesis was in line with the predicted results in Study 1 where the appearance of having an ID was more salient to participants than whether or not the individual actually had an ID. In this first possible set of results, individuals who appeared to have an ID, regardless of actual ID identification, were predicted to be rated lower on agentic and communal traits compared to individuals who did not appear to have an ID. Further, this first possible

hypothesis predicted that those who appear to have an ID will be rated as having more communal than agentic traits, regardless of whether or not they actually have an ID.

The second possible hypothesis centered on whether or not the individual actually has an ID was more salient to participants than the individual's appearance. In this set of results, regardless of appearance, individuals who are identified as having an ID were predicted to be rated lower on agentic and communal traits compared to individuals who were identified as not having an ID. We also expected that those who were identified as having an ID would be rated as having more communal than agentic traits.

Competing hypotheses were also proposed for the affective and behavioral reactions participants had toward target individuals who do or do not have an ID and who do or do not appear to have an ID. In the first possible hypothesis, we proposed appearance would be more salient to participants and predicted that, regardless of whether or not the target individual actually had an ID, participants would report less confidence and would have fewer self-efficacy expectations, greater anxiety, and a lesser desire to interact in an interaction with an individual who appeared to have an ID compared to an individual who did not appear to have an ID. In the second possible hypothesis, we proposed actual disability identification would be more salient to participants and we predicted that, regardless of whether or not the target appeared to have an ID, participants would report less confidence and would have fewer self-efficacy expectations, greater anxiety, and a lesser desire to interact in an interaction with an individual who actually had an ID compared to an individual who did not actually have an ID.

For each possible hypothesis, we also expected that either appearance or identification would interact with individual difference variables so that individuals who have more positive attitudes about individuals with IDs, more contact and positive experiences with individuals with

IDs, and more knowledge about IDs would have greater self-efficacy expectations, less anxiety, and a greater desire to interact in a potential interaction with an individual who appeared to have an ID or who actually had an ID, respectively.

Study 2 examined the effects of appearance and ID identification on perceptions of and affective and behavioral reactions toward a target individual. As in Study 1, the measures that were used incorporated all three components of bias (Eagly & Chaiken, 1993) and theoretically extended the work of Plant and colleagues (Plant, 2004; Plant & Butz, 2006; Plant & Devine, 2003; Plant et al., 2008) by examining how various individual difference variables interacted with appearance and ID identification to influence perceptions of and behavioral reactions toward a target individual. Finally, Study 2 used an externally valid social networking paradigm to manipulate both the appearance and the ID identification of the target individual.

Method

Participants

Similar to Study 1, participants in Study 2 ($N = 212$) were recruited from their general psychology classes and received credit toward their general psychology research requirement for their participation. A majority of the participants were female (70.8%), White (85.4%), in their first-year of college (75.0%), and had a mean age of 19.21 ($SD = 3.49$).

Measures

Pictures and website. The same pictures and website format that were used in Study 1 were again used in Study 2 (see Appendices A and B). In addition to manipulating the individual's appearance, in Study 2 we also manipulated the information participants received about the individual they saw pictured. Specifically, participants read a statement which identified whether or not the pictured individual had an ID. In the conditions in which

participants were told the pictured individual had an ID, the additional information section included the statement, *He has an intellectual disability*. In the conditions in which the participants were told the pictured individual did not have an ID, the additional information section read, *He has a brother with an intellectual disability*.

Additional measures. Participants responded to the same measures used in Study 1. These included ratings of agentic ($\alpha = .86$) and communal ($\alpha = .91$) traits, anxiety ($\alpha = .91$), willingness to interact with the individual ($\alpha = .92$), self-efficacy expectations ($\alpha = .83$), knowledge about IDs ($\alpha = .87$), previous experiences with individuals with IDs (i.e., quantity of contact, $\alpha = .70$; quality of contact, $\alpha = .71$), and attitudes toward individuals with IDs ($\alpha = .86$) (see Appendices C-I).

Procedure

The procedure in Study 2 was identical to the procedure used in Study 1 (see Appendices B-H). The only difference was that we used a 2 (appearance) x 2 (identification) between-groups design so that in the last part of the study participants were randomly assigned to one of four conditions in which they were shown a picture of either: (1) an individual who did not appear to have an ID and was identified as not having an ID, (2) an individual who did not appear to have an ID and was identified as having an ID, (3) an individual who did appear to have an ID and was identified as having an ID, or (4) an individual who did appear to have an ID and was identified as not having an ID. Completing all of the measures and viewing the website profile took participants approximately one hour. After completing all of the measures, participants were debriefed and thanked for their time.

Results

Agentic and Communal Traits

A 2 (appearance) x 2 (ID identification) x 2 (trait type) mixed-groups factorial ANOVA with trait type as the within-groups variable was used to compare average ratings of agentic and communal traits in each of the four conditions in Study 2: the individual who did not appear to have an ID and was not identified as having an ID (typical appearance, no ID condition), the individual who did not appear to have an ID and was identified as having an ID (typical appearance, ID condition), the individual who appeared to have an ID and was not identified as having an ID (atypical appearance, no ID condition), and the individual who appeared to have an ID and was identified as having an ID (atypical appearance, ID condition).

As in Study 1, we expected that, regardless of ID identification, the individuals who had a typical appearance would be rated higher on agentic and communal traits compared to the individuals with an atypical appearance. Additionally, we expected that, regardless of appearance, the individuals who are identified as not having an ID will be rated higher on agentic and communal traits compared to the individuals who are identified as having an ID. However, these predictions were not supported as we did not find a significant main effect for appearance ($F(1, 198) = 0.63, p = .45; d = .06$) or identification ($F(1, 198) = 0.20, p = .66; d = .03$). We did find a significant main effect for trait type ($F(1, 198) = 13.37, p < .001; d = .26$) such that participants were more likely to rate the pictured individual higher on communal traits ($M = 6.75, SD = 0.95$) rather than agentic traits ($M = 6.39, SD = 0.86$), regardless of his appearance or identification.

We expected that significant two-way interactions for appearance and trait type as well as for ID identification and trait type would emerge from this analysis. For the former interaction, we predicted that the difference between ratings of agentic and communal traits for the individual with the atypical appearance would be greater than the difference between ratings of

agentic and communal traits for the individual with the typical appearance. Likewise, we predicted in the ID identification and trait type interaction, the difference between ratings of agentic and communal traits would be larger for the individuals identified as having an ID compared to the individuals not identified as having an ID. We found a significant trait by appearance interaction ($F(1, 198) = 8.30, p = .004; d = .20$) but not a trait by identification interaction ($F(1, 198) = 0.55, p = .459; d = .05$). The trait by appearance interaction was probed using simple effects analyses to find that the individual with the typical appearance was rated higher on communal ($M = 6.63, SD = 0.96$) rather than agentic ($M = 6.41, SD = 0.91$) traits ($F(1, 198) = 9.36, p < .05; d = .21$), but that the difference between ratings of communal ($M = 6.88, SD = 0.93$) and agentic ($M = 6.37, SD = 0.82$) traits was greater for the individual with the atypical appearance ($F(1, 198) = 51.46, p < .05; d = .50$). This confirms our prediction that the difference in ratings of agentic and communal traits would be larger for the individual with an atypical appearance than the individual with the typical appearance.

We also found a significant appearance by identification interaction ($F(1, 198) = 5.24, p = .023; d = .16$) which was probed using a simple effects analysis to find that trait ratings for the individual who was identified as not having an ID were higher when he had a typical appearance ($M = 6.69, SE = .012$) than when he had an atypical appearance ($M = 6.52, SE = .011$), $F(1, 198) = 5.73, p < .05; d = .17$. Interestingly, trait ratings were higher for the individual identified as having an ID when he had an atypical appearance ($M = 6.73, SE = .012$) than when he had a typical appearance ($M = 6.37, SE = .011$), $F(1, 198) = 19.48, p < .05; d = .31$. This suggests that there is an opposite pattern of effects between individuals who have and do not have IDs. Those who have IDs are rated more positively when they have an atypical appearance; conversely those who do not have IDs are rated more positively than when they have a typical appearance.

We also predicted that significant three-way interactions between appearance, ID identification, and trait type would emerge from this analysis. As discussed earlier, we anticipated that the direction of predicted effects could be more dependent on one of the two manipulated factors and two competing hypotheses were produced. The first possible hypothesis was reliant on the appearance of the individual having a greater influence on participants' ratings of the pictured individual more than ID identification and the second relied on ID identification having a greater influence on ratings of the pictured individual than his appearance. Inconsistent with these predictions, the three-way interaction was not significant ($F(1, 198) = 0.64, p = .426; d = .06$). These results are shown in Figure 2.

Affective and Behavioral Reactions

Data analytic strategy. Hierarchical multiple regressions were used to examine the extent to which having the appearance of having an intellectual disability and being identified as having an intellectual disability predicted participants' self-efficacy expectation, levels of anxiety, and willingness to interact in a potential interaction with a target individual. All three regressions followed the same five-step procedure. Step 1 contained participant sex. Step 2 contained variables related to participants' attitudes toward individuals with IDs, the quantity of contact they have had with individuals with IDs, the overall quality of this contact, and the amount of previous knowledge they have about IDs. Step 3 contained the variables carrying the main effects for appearance and identification. Appearance was coded so that a 0 represented the conditions where participants viewed a picture of an individual with a typical appearance and a 1 represented the atypical appearance conditions; Identification was coded so that a 0 represented the conditions where participants viewed a picture of an individual who was not identified as having an ID and a 1 represented the conditions where the individual was identified as having an

ID. Step 4 contained the variables carrying the two-way interaction between appearance and identification. Step 5 contained the variables carrying the two-way interactions between the individual difference variables in Steps 1 and 2 and the manipulated variables of appearance and identification in Step 3 (e.g., attitudes x appearance).

Self-efficacy expectations. Table 8 displays the hierarchical multiple regression results for self-efficacy expectations. Results revealed that the participants' sex was unrelated to self-efficacy expectations ($\beta = .05, p = .493$). We predicted that, after controlling for participant sex, each of the individual difference variables added in Step 2 would be uniquely and significantly related to self-efficacy expectations such that participants with more positive attitudes about individuals with IDs, greater quality and quantity of contact with individuals with IDs, and more knowledge about IDs will have greater self-efficacy expectations regarding an interaction with the pictured individual. Consistent with this prediction, the addition of Step 2 significantly improved the model ($\Delta R^2 = .16, p < .001$). However, only one of the four predictors uniquely predicted self-efficacy expectations. Those with more positive attitudes toward individuals with IDs ($\beta = .38, p < .001$) had higher self-efficacy expectations regarding this potential interaction. Quantity and quality of contact with and knowledge about individuals with IDs were unrelated to self-efficacy expectations ($\beta s = -.01-.05, p s = .568-.959$). These results suggest that regardless of the target individual's appearance or identification, those with more positive attitudes toward individuals with IDs are more likely to believe that they could interact with the pictured individual without coming across as prejudiced.

We further predicted that the addition of Step 3 would significantly improve the model such that appearance and identification would each have main effects on self-efficacy expectations above and beyond the predictor variables in Steps 1 and 2. As previously predicted

in Study 1, we expected that greater self-efficacy expectations would be associated with an individual with a typical appearance rather than an atypical appearance. Likewise, we predicted that greater self-efficacy expectations would be associated with an individual who was identified as not having an ID rather than an individual who was identified as having an ID. Results revealed that the addition of this step was significant ($\Delta R^2 = .10, p < .001$). Appearance uniquely and significantly predicted self-efficacy expectations ($\beta = -.29, p < .001$) such that lower self-efficacy expectations were associated with the individual with an atypical appearance. Identification had a marginally significant unique prediction for self-efficacy expectations ($\beta = .12, p = .065$) as greater self-efficacy expectations were associated with individuals who were identified as having an ID. The results from this step suggest that when the target individual had a typical appearance and when this target was identified as having an ID, individuals reported that they believed they would be more likely to interact with the target without appearing prejudiced compared to when the target had an atypical appearance and was identified as not having an ID, respectively.

We also predicted that the addition of Step 4 would significantly improve the model such that appearance and identification would interact and have a significant influence on self-efficacy expectations above and beyond the variables in Steps 1 through 3. Recall, however, that we predicted two possible sets of interaction patterns, producing two competing hypotheses. The first possible prediction was that appearance would have a greater influence so that greater self-efficacy expectations would be associated with individuals who had a typical appearance (typical appearance, no ID and typical appearance, ID) compared to individuals who had an atypical appearance (atypical appearance, no ID and atypical appearance, ID). The second possible hypothesis was that identification would have a greater influence such that greater self-efficacy

expectations would be associated with individuals who were not identified as having an ID (typical appearance, no ID and atypical appearance, no ID) compared to individuals who were identified as having an ID (typical appearance, ID and atypical appearance, ID). Results did not support either of these hypotheses. The addition of this step was not significant ($\Delta R^2 = .00, p = .911$) and the interaction of appearance and identification was unrelated to self-efficacy expectations ($\beta = -.01, p = .911$).

We also predicted that the addition of Step 5 would significantly improve the model and that each of the two-way interactions would be uniquely and significantly related to self-efficacy expectations above and beyond the variables in Steps 1 through 4. Specifically, we expected appearance to interact with individual difference variables so that those who had more positive attitudes toward individuals with IDs, greater quantity and quality of contact with individuals with IDs, and more knowledge about IDs to have higher self-efficacy expectations when shown the picture of the individual with an atypical appearance than those who have more negative attitudes toward individuals with IDs, lesser quantity and quality of contact with individuals with IDs, and less knowledge about individuals with IDs. Likewise this same pattern of results was predicted for identification. Consistent with our prediction, the addition of Step 5 was significant ($\Delta R^2 = .12, p = .002$). However, only two of the ten two-way interactions were significant. Appearance interacted with participant sex ($\beta = -.63, p = .029$) and quality of contact ($\beta = .72, p = .028$). The appearance by sex interaction was probed using a simple effects analysis (see Figure 3) and the results revealed that for men, the appearance of the individual did not have an influence on their self-efficacy expectations, $F(1, 196) = .04, p > .05$ (typical appearance condition: $M = 6.29, SD = 1.26$; atypical appearance condition: $M = 6.36, SD = 1.30$). Women however reported greater self-efficacy expectations when the pictured individual had a typical

appearance ($M = 6.89$, $SD = 1.19$) than an atypical appearance ($M = 5.90$, $SD = 1.35$), $F(1, 196) = 22.18$, $p < .05$. The appearance by quality of contact interaction was probed using a simple slopes analysis (see Figure 4). These results revealed that individuals with greater quality of contact with individuals with intellectual disabilities had greater self-efficacy expectations only when shown the picture of the individual with the atypical appearance ($\beta = .43$, $p < .001$) but not when shown the picture of the individual with the typical appearance ($\beta = .10$, $p = .365$). These interactions suggest that, for the individual with the atypical appearance, greater self-efficacy expectations were associated with: (a) male participants and (b) those who had more positive experiences with individuals with intellectual disabilities. The remaining interactions were not related to self-efficacy expectations (β s = $-.67$ -. 84 , $ps = .14$ -. 79).

Anxiety. Table 9 displays the hierarchical multiple regression results for anxiety. Our results revealed that participant sex was unrelated to anxiety ($\beta = -.03$, $p = .718$). We predicted that, after controlling for participant sex, each of the individual difference variables added in Step 2 would be negatively, uniquely, and significantly related to self-reported anxiety in response to a potential interaction with the pictured individual. Consistent with this prediction, the addition of Step 2 significantly improved the model ($\Delta R^2 = .16$, $p < .001$). However, only one of the four predictors uniquely predicted anxiety. Those with more positive attitudes toward individuals with IDs ($\beta = -.33$, $p < .001$) reported less anxiety. Quantity and quality of contact with and knowledge about individuals with IDs were unrelated to anxiety (β s = $-.11$ -. 01 , $ps = .198$ -. 955). These results suggest that regardless of the target individual's appearance or identification, those with more positive attitudes toward individuals with IDs were less likely to report that they would experience anxiety in an interaction with the pictured individual.

We further predicted that the addition of Step 3 would significantly improve the model such that less anxiety would be associated with an individual with a typical appearance and an individual who was identified as not having an ID. Results revealed that the addition of this step was significant ($\Delta R^2 = .05, p = .004$). Appearance uniquely and significantly predicted anxiety ($\beta = .20, p = .004$) such that greater anxiety was associated with the individual with an atypical appearance. Identification also had a unique but marginally significant association with anxiety ($\beta = .12, p = .088$, marginally significant) as participants reported greater anxiety when shown the picture of the individual who was identified as having an ID. These results suggest that individuals are more likely to report feelings of anxiety when expecting an interaction involving an individual who had an atypical appearance and when the interaction involved someone who has an ID.

We also predicted that the addition of Step 4 would significantly improve the model such that appearance and identification would interact and have a significant influence on anxiety regarding an interaction with a target individual. We had two competing hypotheses for this interaction: the first predicted that appearance would have a greater influence on anxiety and the second predicted that identification would have greater influence on anxiety. Results did not support either of these possible hypotheses. The addition of this step was not significant ($\Delta R^2 = .003, p = .409$) and the interaction of appearance and identification was unrelated to anxiety ($\beta = .10, p = .409$).

We also predicted that the addition of Step 5 would significantly improve the model and that each of the two-way interactions would be uniquely and significantly related to anxiety. Consistent with our prediction, the addition of Step 5 was significant ($\Delta R^2 = .09, p = .018$). However, only one of the ten two-way interactions was significant. Appearance interacted with

quality of contact ($\beta = -.77, p = .022$). Probing this interaction using a simple slopes analysis (see Figure 5) revealed that greater quality of contact with individuals with intellectual disabilities was associated with less anxiety when the individual had an atypical appearance ($\beta = -.48, p < .001$) but not when the individual had a typical appearance ($\beta = -.02, p = .889$). This suggests that those with more positive experiences with individuals with intellectual disabilities would experience less anxiety in an anticipated interaction with an individual with an atypical appearance. The remaining interactions were not related to anxiety (β s = $-.69$ -. $.41, p$ s = $.135$ -. $.954$).

Willingness to interact. Hierarchical multiple regression results for willingness to interact are displayed in Table 10. We again found that participant sex was unrelated to willingness to interact with the pictured individual ($\beta = .09, p = .217$). After controlling for participant sex, we predicted that, each of the individual difference variables added in Step 2 would be positively, uniquely, and significantly related to willingness to interact with the pictured individual. Consistent with this prediction, the addition of Step 2 significantly improved the model ($\Delta R^2 = .16, p < .001$). However, only one of the four predictors uniquely predicted willingness to interact. Those with more positive attitudes toward individuals with IDs ($\beta = .36, p < .001$) reported a greater willingness to interact with the pictured individual. Quantity and quality of contact with and knowledge about individuals with IDs were unrelated to willingness to interact (β s = $-.01$ -. $.09, p$ s = $.336$ -. $.981$). These results suggest that regardless of the target individual's appearance or identification, those with more positive attitudes toward individuals with IDs were more likely to report that they would be willing to interact with the pictured individual.

We further predicted that the addition of Step 3 would significantly improve the model such that a greater willingness to interact with the target would be associated with an individual

with a typical appearance and an individual who was identified as not having an ID. Results revealed that the addition of this step was not significant ($\Delta R^2 = .01, p = .289$). Neither appearance ($\beta = -.10, p = .144$) nor identification ($\beta = -.04, p = .552$) were related to willingness to interact with the pictured individual. These results did not support our hypotheses.

We also predicted that the addition of Step 4 would significantly improve the model such that appearance and identification would interact and have a significant influence on willingness to interact with the target. We again had two competing hypotheses for this interaction: the first predicted that appearance would have a greater influence on willingness to interact and the second predicted that identification would have greater influence on willingness to interact with the pictured individual. Results did not support either of these possible hypotheses. The addition of this step was not significant ($\Delta R^2 = .01, p = .255$) and the interaction of appearance and identification was unrelated to willingness to interact ($\beta = .14, p = .255$).

We also predicted that the addition of Step 5 would significantly improve the model and that each of the two-way interactions would be uniquely and significantly related to willingness to interact. Consistent with our prediction, the addition of Step 5 was significant ($\Delta R^2 = .14, p = .001$). However, only three of the ten two-way interactions were significant. Appearance interacted with quality of contact ($\beta = .72, p = .041$) and identification interacted with participant sex ($\beta = .93, p = .001$) and knowledge ($\beta = -.52, p = .040$). The appearance by quality of contact interaction was probed using a simple slopes analysis (see Figure 6) to reveal that individuals with greater quality of contact with individuals with IDs were more willing to interact only with the individual with the atypical appearance ($\beta = .44, p < .001$); quality of contact was not related to willingness to interact with the individual with the typical appearance ($\beta = .02, p = .88$). The identification by sex interaction was probed using simple effects analyses (see Figure 7) and

found that women were just as likely to report that they would interact with the individual identified as not having an ID ($M = 6.69, SD = 1.58$) as an individual who was identified as having an ID ($M = 6.88, SD = 1.57$), $F(1, 199) = 0.44, p > .05$. Men however were more likely to interact with the individual without an ID ($M = 7.07, SD = 1.82$) than an individual with an ID ($M = 5.80, SD = 2.22$), $F(1, 199) = 7.42, p < .05$. The identification by knowledge interaction was probed using a simple slopes analysis (see Figure 8) and revealed that individuals with greater knowledge about IDs were more willing to interact only with the individual who was identified as not having an ID ($\beta = .35, p = .001$) but not the individual with an ID ($\beta = .06, p = .532$). Together, these interactions suggest that: (a) individuals were more willing to interact with an individual with an atypical appearance if they had more positive experiences with individuals with IDs and (b) were more willing to interact with individuals identified as having an ID if they were male, but (c) less willing to interact if they have more knowledge about IDs. The remaining interactions were not related to willingness to interact (β s = $-.59$ -. $51, ps = .085$ -. 816).

Descriptive Statistics and Correlations

Table 6 displays descriptive statistics (i.e., means, standard deviations, and alphas) for each of the measured variables in Study 2. Table 7 shows the correlations between all of the predictor and dependent measures in Study 2.

Discussion

Agentic and Communal Traits

Similar to the results in Study 1, we found that regardless of appearance or identification, the target individual was rated higher on communal than agentic traits. We also again found a significant interaction between appearance and traits such that, the difference in ratings of agentic and communal traits was greater for the individuals who appeared to have an ID,

compared to those who did not appear to have an ID. Despite our predictions, we did not find ID identification to influence differences in ratings of agentic and communal traits. Therefore, similar to the results in Study 1, individuals who appeared to have an ID were perceived to be much more communal (e.g., happy and friendly) than agentic (e.g., intelligent and independent). We also found a significant interaction between appearance and identification where individuals who did not have an ID were rated higher on traits when they did not appear to have an ID; the reverse was found for individuals who had an ID where they were rated higher on traits when they did appear to have an ID.

These results were consistent with previous research which suggests that individuals generally have negative attitudes toward individuals with IDs (e.g., Abbott & McConkey, 2006; Akrami et al., 2006; Cooney et al., 2006; Funham & Pendred, 1983) and with research that has found that lower status groups are typically assigned communal but not agentic traits (e.g., Conway et al., 1996; Deaux & Lewis, 1984; Eagly & Steffen, 1984; Gerber, 1988; Johnson-Schmidt & Eagly, 2002; Jost et al., 2005).

In Study 2, we also found that both appearance and ID identification influenced overall ratings of the target individual. Differences in trait ratings between the atypical and typical appearance conditions were greater when the individual was identified as having an ID than when he was not identified as having an ID. Interestingly, individuals who were identified as having an ID had lower trait ratings when they had a typical appearance than when they had an atypical appearance. For the individual who has an ID, appearance influences perceptions such that those who appear to have an ID are perceived more positively than those who do not appear to have an ID. When the target individual is identified as having an ID but appears to be normal, the perceiver receives inconsistent information, which may create an overall more negative

impression of the target. This finding has implications for individuals who have IDs but have a more typical appearance (i.e., those with learning disabilities) in terms the possible formation of negative impressions and discrimination (e.g., Abbott & McConkey, 2006; Akrami et al., 2006; Cooney et al., 2006; Funham & Pendred, 1983).

Affective and Behavioral Reactions

Although we had expected each of the individual difference variables to predict reactions toward the target individual, we only found that those who have more positive attitudes toward individuals with IDs reported greater self-efficacy expectations, lower anxiety, and a greater willingness to interact in an interaction with the target individual, regardless of his appearance or ID identification. Participants' previous experiences with (i.e., quantity and quality of contact) and knowledge about individuals with IDs were unrelated to reactions toward the target.

Concerning the effects of appearance on reactions toward the target individual, we found that when the individual appeared to have an ID, participants reported lower self-efficacy expectations and greater anxiety; appearance was unrelated to willingness to interact with the target. ID identification demonstrated a similar pattern such that when the individual was identified as having an ID, participants also reported higher self-efficacy expectations and greater anxiety (both of these effects were marginally significant); ID identification was unrelated to willingness to interact with the target. These results suggest that when a target individual appeared to have an ID and when the target was identified as having an ID, individuals were more likely to feel as though they would not know how to react without prejudice toward that individual and would experience greater anxiety in an interaction with the him or her. However, despite these feelings, the appearance and ID identification of the target individual did not influence how willing they were to interact with him or her. These results are

partially consistent with previous research on interracial interactions in which individuals reported fewer self-efficacy expectations, greater anxiety, and a lesser willingness to interact with members of minority groups (Plant, 2004; Plant et al., 2008; Plant & Butz, 2006).

We had anticipated interactions between the individual difference variables and appearance and ID identification. While we did not find all of the anticipated interactions, we did find several interesting effects worth noting. First, quality of contact interacted with appearance such that when the target individual appeared to have an ID, those with more positive previous experiences (i.e., greater quality of contact) with individuals with IDs reported higher self-efficacy expectations, lower anxiety, and a greater willingness to interact in a potential interaction. This interaction points to the importance of having positive experiences with individuals with IDs in forming more positive attitudes (McManus et al., under review) and suggests that these experiences also are important for future interactions.

Second, we found that participant sex interacted with appearance and ID identification. Specifically, men reported no difference in their self-efficacy expectations when the target had a typical and an atypical appearance. However, when the target was identified as having an ID, men were less willing to interact with the target than when he was identified as not having an ID. For women, we found a different pattern of effects. When the target individual appeared to have an ID, women had lower self-efficacy expectations than when the target did not appear to have an ID. However, women were just as willing to interact with a target who has an ID than a target who does not have an ID. This interesting pattern of reactions suggests that women may believe that they are less capable of acting without prejudice toward an individual who appeared to have an ID but this belief may not stop them from interacting with an individual who has an ID. For

men, however, they may believe that they could interact without appearing prejudiced, but were less willing to interact with someone who has an ID.

Finally, we found that those reporting greater knowledge about individuals with intellectual disabilities were less likely to report that they would engage in an interaction with an individual with an ID than an individual who did not have an ID. This effect is interesting because we would expect that more knowledge would be associated with a greater willingness to interact with an individual with an ID. This suggests is that the knowledge individuals have about those with IDs is not always positive (McManus et al., under review) and may lead to avoidance and discrimination of individuals with IDs.

General Conclusion

Two studies examined the effects of appearance and identification on ratings of agentic and communal traits along with self-efficacy expectations, levels of anxiety, and willingness to interact with a target individual. In both studies, we found that appearance affected ratings of agentic and communal traits such that there was a larger difference in ratings of agentic (e.g., intelligent and independent) and communal (e.g., happy and friendly) for those who appeared to have an ID compared to those who did not appear to have an ID.

These results are consistent with previous research that has compared ratings of agentic and communal traits for high and low status groups (Conway et al., 1996; Deaux & Lewis, 1984; Eagly & Steffen 1984; Englander, 1984; Gerber, 1988; Johannesen-Schmidt & Eagly, 2002; Jost, et al., 2005; Malcomson & Sinclair, 2007). We found that like members of other low status groups (e.g., women, ethnic groups), individuals who appeared to have IDs were considered to be more communal than agentic, which may perpetuate system-justifying ideologies (Jost et al., 2005) that portray individuals with IDs as sociable but not capable of fulfilling roles that require

intelligence and independence. This belief may then limit the societal roles to which individuals with IDs can gain access and lead to prejudice and discrimination toward individuals with IDs (e.g., Abbott & McConkey, 2006; Akrami et al., 2006; Cooney et al., 2006; Furnham & Pendred, 1983; Gorfin & McGlaughlin, 2005; Halperin & Merrick, 2006; May et al., 1992).

Concerning affective and behavioral reactions, in Study 1, we did not find that appearance affected self-efficacy expectations, levels of anxiety, or willingness to interact in an interaction with the target individual. In Study 2, however participants reported lower self-efficacy expectations and greater anxiety in an interaction with the individual who appeared to have an ID. They also reported higher self-efficacy expectations and greater anxiety in an interaction with an individual who was identified as having an ID (these effects were marginally significant). Even with these higher self-efficacy expectations and anxiety, participants reported that they were just as willing to interact with the individual with an atypical appearance and with an ID as they were to interact with the individual with a typical appearance and with no ID, respectively.

These findings in Study 2 add partial support to the findings on self-efficacy expectations, anxiety, and avoidance of individuals in interracial interactions (Plant, 2004; Plant & Butz, 2006; Plant et al., 2008; Plant & Devine, 2003) where lower self-efficacy expectations and greater anxiety have been found to lead to greater avoidance of members of minority groups. Our findings indicate that participants were able to discern that the individual belongs to an outgroup (i.e., individuals with IDs) through either appearance or ID identification, report that they did not believe they would be able to interact without prejudice and that they would experience anxiety, but they were no less willing to interact with outgroup members (i.e. individuals with IDs) than with ingroup members (i.e., individuals without IDs). Perhaps these

findings indicate that, although research has shown that prejudice exists toward individuals with IDs, it is less socially acceptable to actually express that prejudice toward some social groups (e.g., individuals with intellectual disabilities) than toward others (e.g., child abusers) (Crandall, Eshleman, & O'Brien, 2002), particularly when there is not sufficient justification for expressing that prejudice (Crandall & Eshleman, 2003; Saucier, Miller, & Doucet, 2005). While completing the measures, participants may have noted that reporting avoidance of an individual with appeared to or was identified as having an ID would make them look prejudiced toward individuals with IDs and that any apprehension they had about the interaction would not be enough to justify avoiding an interaction with the target individual.

We also found several interactions between the individual difference variables and appearance and ID identification. Those with greater quality of contact with individuals with IDs were more likely to report greater self-efficacy expectations, lower anxiety, and a greater willingness to interact with the individual who appeared to have an ID. Women were more likely to report lower self-efficacy expectations in an interaction with an individual who appeared to have an ID but were just as willing to interact with an individual who had an ID as an individual who did not have an ID. Men on the other hand reported similar levels of self-efficacy expectations for those who appeared and did not appear to have an ID but were less willing to interact with an individual who had an ID than an individual who did not have an ID. Finally, those with more knowledge about IDs were less likely to report that they would be willing to interact with an individual who had an ID.

In addition to these findings, there are several contributions of these research studies. One contribution includes the use of a social networking tool to examine a situation where judgments about an individual were made quickly and were based on little information (i.e., appearance and

ID identification). Similar to the results of these studies in which we found negative perceptions and affective reactions toward individuals who appeared to have an ID, other research reports that attitudes toward individuals with IDs are generally negative and that individuals with IDs are a stigmatized group (e.g., Abbott & McConkey, 2006; Akrami et al., 2006; Cooney et al., 2006; Furnham & Pendred, 1983; Gorfin & McGlaughlin, 2005; Halperin & Merrick, 2006; May et al., 1992). However, it could be the case that appearance might serve a protective factor against stigma (e.g., Crocker & Major, 1989; Siperstein & Bak, 1985; Siperstein & Gottlieb, 1977). For individuals with IDs who have an atypical appearance, their appearance could be stigmatizing in that other individuals might identify them as having an ID and may have negative attitudes toward them or discriminate against them. However, their appearance could also be protective because some atypical behaviors associated with IDs could be more acceptable than they would be if the individual had a more typical appearance. As an example, consider an individual who comes into contact with another individual who is taking a long time to count his or her money at the grocery store. If the individual who is counting money has the appearance of having an ID, this might be a cue for the perceiver that the individual has an ID and they might be more patient in waiting or offer to help than they would if the individual does not appear to have an ID and there are no cues for the perceiver. This quickly could become an issue however for individuals with atypical appearances who do not have IDs where differential treatment could be particularly stigmatizing. For an individual who has an atypical appearance in the above situation, he or she might be capable of performing tasks on his or her own and helpful offers could be offensive to the individual (e.g., assumptive help; Schneider, Major, Luhtanen, & Crocker, 1996). This poses interesting questions for future researchers who could explore the contradictory dual role of appearance; it would be interesting to explore situations where appearance is protective and

when it is stigmatizing for individuals with IDs. Specifically, in situations where the individual is capable at performing a task, an atypical appearance might be stigmatizing; conversely when the individual is less capable or in need of assistance, an atypical appearance could be protective.

The findings of these studies also have important implications for facial plastic surgery for individuals with IDs who also have a stigmatizing appearance (Goeke, 2003). There is a debate about whether or not these surgeries are beneficial to the social acceptance of individuals with intellectual disabilities. Our results show that the appearance of the target individual influences perceptions (i.e., agentic and communal traits) of as well as affective reactions (i.e., self-efficacy expectations and anxiety) toward the individual. However, identifying whether or not the individual has an ID also influenced the affective reactions (i.e., self-efficacy expectations and anxiety) toward the target as well. This suggests that appearance is only one of the factors that individuals use as cues to determine whether or not an individual has an ID and that altering a stigmatizing appearance may not be completely effective in promoting social acceptance of those with IDs.

Although these studies have many contributions, there are a few limitations that should be noted. The current study examined bias toward an individual based on his or her appearance and ID identification. While this is an important relationship to explore, it is not fully representative of how impressions are made about individuals with IDs. In many actual real world interactions, it would be rare for an individual to only see a picture of an individual and make ratings about him or her. In real world experiences, an individual would not only notice the appearance of the other person but would also pay attention to behavioral cues that might indicate if an individual has an ID (Schalock, Luckasson, & Shogren, 2007). Future research should manipulate the behaviors of the target individual in addition to their appearance and ID

identification to capture a more representative real world situation where interactions with individuals with IDs might take place. The current studies also examined self-report behaviors. It is unknown from these results how participants would actually interact or feel in an interaction involving an individual with an ID. Future research should examine participants' actual reactions and behaviors toward individuals with different appearances, identifications, and behaviors.

The current studies extended the existing literature concerning bias toward individuals with IDs (e.g., Abbott & McConkey, 2006; Akrami et al., 2006; Cooney et al., 2006; Furnham & Pendred, 1983; Gorfin & McGlaughlin, 2005; Halperin & Merrick, 2006; May et al., 1992) using social psychological theories on the connections between self-efficacy expectations, anxiety, and willingness to interact with outgroup members (Plant, 2004; Plant & Butz, 2006; Plant et al., 2008; Plant & Devine, 2003) and ratings of agentic and communal traits (Conway et al., 1996; Deaux & Lewis, 1984; Eagly & Steffen 1984; Englander, 1984; Gerber, 1988; Johannesen-Schmidt & Eagly, 2002; Jost, et al., 2005; Malcomson & Sinclair, 2007). Using a social networking website, we examined how the appearance and ID identification of a target individual influenced bias toward that individual. We also examined how appearance and identification interacted with individual differences (i.e., sex, attitudes toward individuals with IDs, quantity and quality of contact with individuals with IDs, and knowledge about IDs) to influence bias toward the same target individual. Our results from both Studies 1 and 2 revealed that individuals who appear to have an ID are perceived to be much more likely to possess communal traits than agentic traits. In Study 2, participants reported that they would experience lower self-efficacy expectations and greater anxiety if they were to interact with either an individual who appeared to have an ID or was identified as having an ID. Previous positive experiences also appear to have important effects as those with greater quality of contact with

individuals with IDs reported greater self-efficacy, lower anxiety, and a greater willingness to interact with an individual with an atypical appearance. By examining these variables, we better understand how perceptions and reactions toward individuals with IDs are influenced not only by characteristics of the target individual (i.e., their appearance and ID identification) but also individual differences within perceivers (i.e., sex, quality of their previous experiences with individuals with IDs, and the amount of knowledge they have about IDs in general). These studies provide evidence that cues for social group membership along with preexisting beliefs and experiences can influence attitudes toward individuals with IDs.

References

- Abbott, S., & McConkey, R. (2006). The barriers to social inclusion as perceived by people with intellectual disabilities. *Journal of Intellectual Disabilities, 10*, 275-287.
- Akrami, N., Ekehammar, B., Claesson, M., & Sonnander, K. (2006). Classical and modern prejudice: Attitudes toward people with intellectual disabilities. *Research in Developmental Disabilities, 27*, 605-617.
- Antonak, R. F., & Harth, R. (1994). Psychometric analysis and revision of the mental retardation attitude inventory. *Mental Retardation, 32*, 272-280.
- Bakan, D. (1966). *The duality of human existence: An essay on psychology and religion*. Chicago: Rand McNally & Company.
- Beh-Pajooch, A. (1991). The effect of social contact on college students' attitudes toward severely handicapped students and their educational integration. *Journal of Mental Deficiency Research, 35*, 339-352.
- Bar, M., Neta, M., & Linz, H. (2006). Very first impressions. *Emotion, 6*, 269-278.
- Conway, M. M., Pizzamiglio, T., & Mount, L. (1996). Status, communality, and agency: Implications for stereotypes of gender and other groups. *Journal of Personality and Social Psychology, 71*, 25-38.
- Cooney, G., Jahoda, A., Gumley, A., & Knott, F. (2006). Young people with intellectual disabilities attending mainstream and segregated schooling: Perceived stigma, social comparison and future aspirations. *Journal of Intellectual Disability Research, 50*, 432-444.
- Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological Bulletin, 129*, 414-446.

- Crandal, C. S., Eshleman, A., & O'Brien, L. (2002). Social norms and the expression and suppression of prejudice: The struggle for internalization. *Journal of Personality and Social Psychology, 82*, 359-378.
- Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review, 96*, 608-630.
- Deaux, K., & Lewis, L. L. (1984). Structure of gender stereotypes: Interrelationships among components and gender label. *Journal of Personality and Social Psychology, 46*, 991-1004.
- Dougherty, T. W., Turban, D. B., Callender, J. C. (1994). Confirming first impressions in the employment interview: A field study of interviewer behavior. *Journal of Applied Psychology, 79*, 659-665.
- Eagly, A., & Chaiken, S. (1993). *The psychology of attitudes*. Forth Worth, TX: Harcourt Brace Jovanovich.
- Eagly, A. H., & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal of Personality and Social Psychology, 46*, 735-754.
- Englander, S. W. (1984). Some self-reported correlates of runaway behavior in adolescent females. *Journal of Consulting and Clinical Psychology, 3*, 484-485.
- Evans, K. R., Kleine, R. E., Landry, T. D., & Crosby, L. A. (2000). How first impressions of a customer impact effectiveness in an initial sales encounter. *Journal of the Academy of Marketing Science, 28*, 512-526.
- Furnham, A. (1995). The just world, charitable giving, and attitudes to disability. *Personality and Individual Differences, 19*, 577-583.
- Furnham, A., & Pendred, J. (1983). Attitudes toward the mentally and physically disabled.

- British Journal of Medical Psychology*, 56, 179-187.
- Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61-89). Orlando, FL: Academic Press.
- Gerber, G. L. (1988). Leadership roles and the gender stereotype traits. *Sex Roles*, 18, 649-668.
- Gilmore, L., Campbell, J., & Cuskelly, M. (2003). Developmental expectations, personality stereotypes, and attitudes towards inclusive education: Community and teacher views of Down syndrome. *International Journal of Disability, Development and Education*, 50, 65-76.
- Gorfin, L., & McGlaughlin, A. (2005). Listening to the disempowered. *The Psychologist, Special Issue: Enabled*, 18, 426-428.
- Guthrie, R. V. *Even the rat was White: A historical view of psychology* (2nd ed.). Upper Saddle River, NJ: Pearson.
- Hasin, R., & Trope, Y. (2000). Facing faces: Studies on the cognitive aspects of physiognomy. *Journal of Personality and Social Psychology*, 78, 837-852.
- Halperin, I., & Merrick, J. (2006). Multinational study of attitudes toward individuals with intellectual disabilities. *Journal of Policy and Practice in Intellectual Disabilities*, 3, 143.
- Hoffman, C., & Hurst, N. (1990). Gender stereotypes: Perception or rationalization? *Journal of Personality and Social Psychology*, 58, 197-208.
- Hudson-Allez, G., & Barrett, J. (1996). Attitudes to people with intellectual disabilities moving into ordinary houses: What the neighbors say. *Journal of Applied Research in Intellectual Disabilities*, 9, 1-16.
- Johannesen-Schmidt, M. C., & Eagly, A. H. (2002). Diminishing returns: The effects of income

- on the content stereotypes of wage earners. *Personality and Social Psychology Bulletin*, 28, 1538-1545.
- Jones, E. E. (1986). Interpreting interpersonal behavior: The effects of expectancies. *Science*, 234, 41-46.
- Jost, J. T., & Kay, A. C. (2005). Exposure to benevolent sexism and complementary stereotypes: Consequences for specific and diffuse forms of system justification. *Journal of Personality and Social Psychology*, 88, 498-509.
- Jost, J. T., Kivetz, Y., Rubini, M., Guermendi, G., & Mosso, C. (2005). System-justifying functions of complementary regional and ethnic stereotypes: Cross-national evidence. *Social Justice Research*, 18, 305-333.
- Katz, I., & Haas, R. G. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology*, 55, 893-905.
- Krajewski, J., & Flaherty, T. (2000). Attitudes of high school students toward individuals with mental retardation. *Mental Retardation*, 38, 154-62.
- Lennon, S. (1986). Additivity of clothing cues in first impressions. *Social Behavior and Personality*, 14, 15-21.
- Lovering, J. S., & Percy, M. (2007). Down syndrome. In I. Brown & M. Percy (Eds.) *A comprehensive guide to intellectual and developmental disabilities* (pp. 149-172). Baltimore, MD: Paul H. Brooks Publishing.
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51, 93-120.
- Malcomson, K. A., & Sinclair, L. (2007). The Ms. stereotype revisited: Implicit and explicit

- stereotypes, *Psychology of Women Quarterly*, 31, 305-310.
- May, D. C., Dobush, K. E., Endres, E. K., Getto, D. A., Patterson, S. K., Zipkin, D. S., & Kundert, D. K. (1992). Housing discrimination: Apartment rentals to people who are blind or mentally retarded. *Journal of Applied Rehabilitation Counseling*, 23, 26-28.
- Mazzocco, M. M. M., & Holden, J. J. A. (2007). Fragile X syndrome. In I. Brown & M. Percy (Eds.) *A comprehensive guide to intellectual and developmental disabilities* (pp. 173-187). Baltimore, MD: Paul H. Brooks Publishing.
- Miller, C. T., & Clarke, R. T. (1991). Expectations and social interactions of children with and without mental retardation. *Journal of Special Education*, 91, 454-474.
- Nulman, I., Ickowicz, A., Koren, G., & Knittle-Keren, D. (2007). Fetal alcohol spectrum disorder. In I. Brown & M. Percy (Eds.) *A comprehensive guide to intellectual and developmental disabilities* (pp. 213-227). Baltimore, MD: Paul H. Brooks Publishing.
- Perry, A., Dunlap, G., & Black, A. (2007). Autism and related disabilities. In I. Brown & M. Percy (Eds.) *A comprehensive guide to intellectual and developmental disabilities* (pp. 189-203). Baltimore, MD: Paul H. Brooks Publishing.
- Photoshop CS4 (2008) [Computer Software]. San Jose, CA: Adobe Systems Incorporated.
- Plant, E. A. (2004). Responses to interracial interactions over time. *Journal of Personality and Social Psychology*, 30, 1458-1371.
- Plant, E. A., & Butz, D. A. (2006). The causes and consequences of an avoidance-focus for interracial interactions. *Journal of Personality and Social Psychology*, 32, 833-846.
- Plant, E. A., Butz, D. A., & Tartakovsky, M. (2008). Interethnic interactions: Expectancies, emotions, and behavioral intentions. *Group Processes & Intergroup Relations*, 11, 555-574.

- Plant, E. A., & Devine, P. G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology, 29*, 790-801.
- Quigley-Fernandez, B., Malkis, F. S., & Tedeschi, J. T. (1985). Effects of first impressions and reliability of promises on trust and cooperation. *British Journal of Social Psychology, 24*, 29-36.
- Richardson, S. A., Koller, H., & Katz, M. (1985). Appearance and mental retardation: Some first steps in the development and application of a measure. *American Journal of Mental Deficiency, 89*, 475-484.
- Rosenberg, S., Nelson, C., & Vivekananathan, P. S. (1968). A multidimensional approach to the structure of personality impressions. *Journal of Personality and Social Psychology, 9*, 283-294.
- Rule, N. O., & Ambady, N. (2008). Brief exposures: Male sexual orientation is accurately perceived at 50ms. *Journal of Experimental Social Psychology, 44*, 1100-1105.
- Rule, N. O., Ambady, N., Adams, R. B., & Macrae, C. N. (2008). Us and them: Memory advantages in perceptually ambiguous groups. *Psychonomic Bulletin & Review, 14*, 687-692.
- Rule, N. O., Ambady, N., Adams, R. B., & Macrae, C. N. (2008). Accuracy and awareness in the perception and categorization of male sexual orientation. *Journal of Personality and Social Psychology, 95*, 1019-1028.
- Saucier, D. A., Miller, C. T., & Doucet N. (2005). Differences in helping Whites and Blacks: A meta-analysis. *Personality and Social Psychological Review, 9*, 2-16.
- Schalock, R. L., Luckasson, R. A., Shogren, K. A. (2007). The renaming of mental retardation:

- Understanding the change to the term intellectual disability. *Intellectual and Developmental Disabilities, 45*, 116-124.
- Schneider, M. E., Major, B., Luhtanen, R., & Crocker, J. (1996). Social stigma and the potential costs of assumptive help. *Personality and Social Psychology Bulletin, 22*, 201-209.
- Siperstein, G. N., & Bak, J. J. (1985). Effects of social behavior on children's attitudes toward their mildly and moderately mentally retarded peers. *American Journal of Mental Deficiency, 90*, 319-327.
- Siperstein, G. N., & Gottlieb, J. (1977). Physical stigma and academic performance as factors affecting children's first impressions of handicapped peers. *American Journal of Mental Deficiency, 81*, 455-462.
- Thomas, A., Palmer, J. K., Coker-Juneau, C. J., & Williams, D. B. (2003). Factor structure and construct validity of the interaction with disabled persons scale. *Educational and Psychological Measurement, 63*, 465-483.
- Willis, J., & Todorov, A. (2006). First impressions: Making up your mind after a 100-ms exposure to a face. *Psychological Science, 17*, 592-598.
- Vazire, S., Maumann, L. P., Renfrow, P. J., & Gosling, S. D. (2008). Portrait of narcissist: Manifestations of narcissism in physical appearance. *Journal of Research in Personality, 42*, 1439-1447.
- Yazbeck, M., McVilly, K., & Parmenter, T. R. (2004). Attitudes toward people with intellectual disabilities. *Journal of Disability Policy Studies, 15*, 97-111.

Appendix A

PICTURES

Atypical Appearance Conditions



Typical Appearance Conditions



Appendix B

COVER STORY AND WEBSITE

Cover Story for Study 1

A lot of college students use social networking websites like facebook to stay connected with old and new friends. They may also use facebook as a way to meet new people. By looking at facebook profiles, you can get to know people pretty well. If they provide enough information, you can find out about what classes they are taking, where they grew up, when their birthday is, what type of movies and music they like, and what they like to do on the weekends. Sometimes you can even tell if the person is someone you would like to hang out with or not.

However, it's pretty hard to include every little detail about yourself on a profile! So, sometimes important information about a person gets left off of their profile. The study you are about to participate in examines how information left out of a profile might influence how people feel about another person. We are either presenting additional information before or after you view the facebook page. You are in the condition where we present the additional information *before* the facebook page.

You will see a profile for Matt. Matt allowed us to show you part of his profile and share additional information about him. The information Matt does not include on his facebook page includes:

- **He has an older sister and two younger brothers**
- **He lives far away from home and sometimes gets homesick**
- **He is thinking about changing his major**
- **His favorite subject in high school was history**
- **He watches every K-State basketball game on TV**
- **His favorite restaurant in Manhattan is Gumby's**
- **He likes Wii bowling with his friends in the dorms**

When you turn the page, you will Matt's profile. After you view the profile, you will be asked general questions about Matt and Matt's personality.

Cover Story for Study 2 Intellectual Disability Condition

A lot of college students use social networking websites like facebook to stay connected with old and new friends. They may also use facebook as a way to meet new people. By looking at facebook profiles, you can get to know people pretty well. If they provide enough information, you can find out about what classes they are taking, where they grew up, when their birthday is, what type of movies and music they like, and what they like to do on the weekends. Sometimes you can even tell if the person is someone you would like to hang out with or not.

However, it's pretty hard to include every little detail about yourself on a profile! So, sometimes important information about a person gets left off of their profile. The study you are about to participate in examines how information left out of a profile might influence how people feel about another person. We are either presenting additional information before or after you view the facebook page. You are in the condition where we present the additional information *before* the facebook page.

You will see a profile for Matt. Matt allowed us to show you part of his profile and share additional information about him. The information Matt does not include on his facebook page includes:

- **He has an older sister and two younger brothers**
- **He lives far away from home and sometimes gets homesick**
- **He is thinking about changing his major**
- **He has an intellectual disability**
- **His favorite subject in high school was history**
- **He watches every K-State basketball game on TV**
- **His favorite restaurant in Manhattan is Gumby's**
- **He likes Wii bowling with his friends in the dorms**

When you turn the page, you will see Matt's profile. After you view the profile, you will be asked general questions about Matt and Matt's personality.

Cover Story for Study 2
No Intellectual Disability Condition

A lot of college students use social networking websites like facebook to stay connected with old and new friends. They may also use facebook as a way to meet new people. By looking at facebook profiles, you can get to know people pretty well. If they provide enough information, you can find out about what classes they are taking, where they grew up, when their birthday is, what type of movies and music they like, and what they like to do on the weekends. Sometimes you can even tell if the person is someone you would like to hang out with or not.

However, it's pretty hard to include every little detail about yourself on a profile! So, sometimes important information about a person gets left off of their profile. The study you are about to participate in examines how information left out of a profile might influence how people feel about another person. We are either presenting additional information before or after you view the facebook page. You are in the condition where we present the additional information *before* the facebook page.

You will see a profile for Matt. Matt allowed us to show you part of his profile and share additional information about him. The information Matt does not include on his facebook page includes:

- **He has an older sister and two younger brothers**
- **He lives far away from home and sometimes gets homesick**
- **He is thinking about changing his major**
- **He has a brother with an intellectual disability**
- **His favorite subject in high school was history**
- **He watches every K-State basketball game on TV**
- **His favorite restaurant in Manhattan is Gumby's**
- **He likes Wii bowling with his friends in the dorms**

When you turn the page, you will see Matt's profile. After you view the profile, you will be asked general questions about Matt and Matt's personality.



Matt Smith

[Wall](#) [Info](#) [Photos](#) [Boxes](#)

Basic Information

Networks: [Kansas State '11](#)
 Sex: [Male](#)
 Birthday: [April 14, 1989](#)
 Hometown: [Bloomington, IN](#)
 Relationship Status: [Single](#)
 Interested In: [Women](#)
 Looking For: [Friendship](#)

Personal Information

Activities: [School, work, hanging out with friends](#)
 Favorite Music: [I really don't have a favorite. I will listen to anything and everything!](#)
 Favorite Movies: [Casino Royale, Top Gun, Superbad, Snatch, Tommy Boy, Dukes of Hazard](#)
 Favorite Books: [Catch-22, Legends of the Fall](#)
 Favorite Quotations: ["You sold my dead parakeet to a blind kid?!? Lloyd, Peety didn't even have a head!"](#)
["Harry....I took care of it."](#)

["You've got to be very careful if you don't know where you are going, because you might not get there." Yogi Berra](#)

["Insanity is doing the same thing over and over, and expecting different results." Ronnie Coleman](#)

About Me:

[I enjoy going out with friends and I like meeting new people. Come talk to me so that you can find out what I'm all about.](#)

Contact Information

Email: mattsmith@yahoo.com

Education and Work

College: [Kansas State '11](#)
[Business Major](#)

Groups See All (82)

[View Photos of Matt \(147\)](#)

[View Videos of Matt \(3\)](#)

[Send Matt a Message](#)

[Poke Matt](#)

Information

Networks:
[Kansas State '11](#)

Relationship Status:
[Single](#)

Birthday:
[April 14, 1989](#)

Friends

[423 friends](#)

Photos

[bums](#)

Quiz about Matt
To Follow Facebook Profile in Study 1

Statement	Response (<i>circle one</i>)	
1. Matt seems a lot like me	Yes	No
2. Matt likes movies that I like	Yes	No
3. Matt likes music that I like	Yes	No
4. Matt grew up in my neighborhood	Yes	No
5. Matt's favorite restaurant is Chili's	Yes	No
6. Matt is a business major	Yes	No
7. Matt likes K-State	Yes	No
8. Matt has brown hair	Yes	No
9. Matt has brown eyes	Yes	No
10. Matt lives in the dorms	Yes	No

Quiz about Matt
To Follow Facebook Profile in Study 2

Statement	Response (<i>circle one</i>)	
1. Matt seems a lot like me	Yes	No
2. Matt likes movies that I like	Yes	No
3. Matt likes music that I like	Yes	No
4. Matt grew up in my neighborhood	Yes	No
5. Matt has an intellectual disability	Yes	No
6. Matt is a business major	Yes	No
7. Matt likes K-State	Yes	No
8. Matt has brown hair	Yes	No
9. Matt has brown eyes	Yes	No
10. Matt lives in the dorms	Yes	No

Appendix C

AGENTIC AND COMMUNAL TRAITS

Agentic Traits

- | | | |
|----------------|-----------------------------|------------------------|
| 1. *Aggressive | 8. Hard-working | 14. Responsible |
| 2. Ambitious | 9. Has leadership abilities | 15. Self-confident |
| 3. Competent | 10. Independent | 16. *Selfish |
| 4. Competitive | 11. Intelligent | 17. Serious |
| 5. Determined | 12. *Naïve | 18. Strong personality |
| 6. Dominant | 13. Productive | 19. Valuing education |
| 7. Educated | | |

Communal Traits

- | | | |
|------------------------------|-----------------|--------------|
| 1. Affectionate | 7. Friendly | 14. Patient |
| 2. Aware of other's feelings | 8. Good natured | 15. Pleasant |
| 3. Cheerful | 9. Happy | 16. Popular |
| 4. Considerate | 10. Helpful | 17. Reliable |
| 5. Emotional | 11. Honest | 18. Sociable |
| 6. Extraverted | 12. Humorous | 19. Warm |
| | 13. Kind | |

* item was reverse coded

Appendix D

ANXIETY

1. I would feel uncomfortable when interacting with Matt in person.
2. I would feel awkward interacting with Matt in person.
3. *When interacting with Matt in person, I would feel relaxed.
4. When interacting with Matt in person, I would feel nervous.

* item was reverse coded

Appendix E

WILLNGNESS TO INTERACT

1. *If I had a choice, I would rather not interact with Matt in person.
2. *If I could avoid interacting with Matt in person, I would.
3. I would look forward to interacting with Matt in person.
4. I like interacting with other individuals in person like Matt.
5. *I would want to avoid interacting with Matt in person.

* item was reverse coded

Appendix F

SELF-EFFICACY EXPECTATIONS

1. I am unsure how to behave toward Matt in person in order to convey a nonprejudice impression.
2. When interacting with Matt in person, I would be unsure how to act in order to show him that I am not prejudice.
3. *I am confident that I can respond without prejudice when interacting with Matt in person.
4. I would be worried that stereotypes would come to my mind when interacting with Matt in person, even if I wish they wouldn't.
5. I believe in some ways, interacting with Matt in person would be more difficult than interacting with other individuals.
6. *I am confident that stereotypes don't affect how I would interact with Matt in person.
7. Even if we hadn't met before, Matt would expect me to be prejudiced.
8. When interacting with Matt in person, he would see me as prejudiced no matter what I did.
9. If I were interacting with Matt in person, regardless of my behavior he would interpret my behavior as prejudiced.
10. *When interacting with Matt in person, I would know what to say in order to come across as nonprejudiced.
11. When interacting with Matt in person, I would imagine that he would be watching my behavior closely for prejudice.
12. *Matt would not look for prejudice in the behavior of other individuals.

13. Sometimes Matt might view normal behavior of other individuals as prejudiced.

* item was reverse coded

Appendix G

PREVIOUS KNOWLEDGE ABOUT INDIVIDUALS WITH INTELLECTUAL DISABILITIES

1. I have read about intellectual disabilities on the internet.
2. I think I know a lot about intellectual disabilities.
3. I learned about intellectual disabilities through a close family member with an intellectual disability.
4. I learned about intellectual disabilities through a student in school who has an intellectual disability.
5. I learned about intellectual disabilities through a friend who has an intellectual disability.
6. I learned about intellectual disabilities through a co-worker who has an intellectual disability.
7. I think I know more about intellectual disabilities than other people.
8. I would consider myself an expert on intellectual disabilities.
9. *I think I know less than the average person does about intellectual disabilities.
10. I have learned a great deal about intellectual disabilities.
11. *I have learned very little about intellectual disabilities.

* item was reverse coded

Appendix H

PREVIOUS EXPERIENCES WITH INDIVIDUALS WITH INTELLECTUAL DISABILITIES

Quantity of Contact

1. In the past, I have interacted with individuals with intellectual disabilities in many areas of my life (e.g., school, friends, work, clubs).
2. *The neighborhood(s) I grew up in had mostly people who do not have intellectual disabilities.
3. The high school I attended had mostly students without intellectual disabilities.
4. *In the past, I have rarely interacted with individuals with intellectual disabilities.
5. In elementary school, I had frequent interactions with people with intellectual disabilities.
6. In high school, I had frequent interactions with people with intellectual disabilities.
7. In college I have frequent interactions with people with intellectual disabilities.
8. I have a close family member with an intellectual disability.
9. I have a close friend with an intellectual disability.

Quality of Contact

1. In the past, my experiences with individuals with intellectual disabilities have been pleasant.
2. I have had many positive experiences with individuals with intellectual disabilities.
3. Over the course of my life, I have had many friends who have intellectual disabilities.
4. Overall I have had positive experiences with people with intellectual disabilities.
5. I have enjoyed the experiences I have had with people with intellectual disabilities.
6. The experiences I have had with people with intellectual disabilities have been fun.

* item was reverse coded

Appendix I

ATTITUDES TOWARD INDIVIDUALS WITH INTELLECTUAL DISABILITIES

1. *School officials should not place children who have intellectual disabilities and children who do not have intellectual disabilities in the same classes.
2. We should integrate people who have intellectual disabilities and who do not have intellectual disabilities into the same neighborhoods.
3. *It is a good idea to have separate after-school programs for children who have intellectual disabilities and children who do not have intellectual disabilities.
4. *Integrating children who have intellectual disabilities and who do not have intellectual disabilities into the same preschool classes should not be attempted because of the turmoil it would cause.
5. Having people who have intellectual disabilities and do not have intellectual disabilities work at the same jobsites will be beneficial to both.
6. *Assigning high school students who have intellectual disabilities and who do not have intellectual disabilities to the same classes is more trouble than it is worth.
7. The child who has an intellectual disability should be integrated into regular classes in school.
8. I would allow my child to accept an invitation to a birthday party given for a child with an intellectual disability.
9. I am willing for my child to have children who have intellectual disabilities as close personal friends.
10. I have no objection to attending the movies or a play in the company of people who have intellectual disabilities.

11. *I would rather not have people with intellectual disabilities as dinner guests with my friends who do not have intellectual disabilities.
12. *I would rather not have a person who has an intellectual disability swim in the same pool that I swim in.
13. I would be willing to introduce a person who has an intellectual disability to friends and neighbors in my home town.
14. I would be willing to go to a competent barber or hairdresser who has an intellectual disability.
15. *I would rather not have people who have intellectual disabilities live in the same apartment building I live in.
16. *If I were a landlord, I would want to pick my tenants even if this meant only renting to people who do not have intellectual disabilities.
17. Regardless of his or her own views, a private nursery school director should be required to admit children with intellectual disabilities.
18. *Laws requiring employers not to discriminate against people with intellectual disabilities violate the rights of the individual who does not want to associate with people who have intellectual disabilities.
19. Real estate agents should be required to show homes to families with children who have intellectual disabilities regardless of the desires of the homeowners.
20. *Campground and amusement park owners have the right to refuse to serve anyone who they please, even if it means refusing people who have intellectual disabilities.
21. If I were a barber or beauty shop owner I would not resent it if I were told that I had to serve people with intellectual disabilities.

22. A person should not be permitted to run a day care center if he or she will not serve children who have intellectual disabilities.
23. *People who have intellectual disabilities are not yet ready to practice the self-control that goes with social equality with people who do not have intellectual disabilities.
24. *Even though children with intellectual disabilities are in public school, it is doubtful whether they will gain much from it.
25. *Although social mixing of people who have intellectual disabilities and people who do not have intellectual disabilities may be right, it is impractical until people with intellectual disabilities learn to accept limits in their relations with the opposite sex.
26. *Children who have intellectual disabilities waste time playing in class instead of trying to do better.
27. *The problem of prejudice toward people with intellectual disabilities has been exaggerated.
28. *Even with equality of social opportunity, people who have intellectual disabilities could not show themselves equal in social situations to people who do not have intellectual disabilities.
29. *Even though people with intellectual disabilities have some cause for complaint, they would get what they want if they were more patient.

* item was reverse coded

Table 1

Means and Standard Deviations for Predictor and Dependent Measures in Study 1

Measure	<i>M</i>	<i>SD</i>	<i>alpha</i>
Attitudes	6.52	1.02	.88
Quantity of Contact	4.13	1.49	.75
Quality of Contact	6.07	1.80	.90
Knowledge	3.87	1.87	.80
Communal Traits	6.48	1.02	.92
Agentic Traits	6.21	1.04	.91
Self-Efficacy	6.49	1.32	.86
Willingness to Interact	6.25	2.02	.94
Anxiety	3.75	1.81	.83

Table 2

Correlations between Predictor and Dependent Measures in Study 1

	1	2	3	4	5	6	7	8	9	10	11
1. Sex	----										
2. Appearance	-.03	----									
3. Attitudes	.20*	-.09	----								
4. Quantity of Contact	-.17	-.20*	.33***	----							
5. Quality of Contact	-.06	-.09	.61***	.53***	----						
6. Knowledge	-.06	.03	.33***	.59***	.56***	----					
7. Communal Traits	-.06	-.03	.05	.04	.28**	.05	----				
8. Agentic Traits	.06	.09	.21*	.06	.34***	-.02	.81***	----			
9. Self-Efficacy	.01	.07	.30**	.01	.19*	-.08	.24**	.34***	----		
10. Willingness to Interact	-.10	-.05	-.40***	-.16	-.47***	-.13	-.41***	-.48***	.65***	----	
11. Anxiety	-.14	-.08	-.11	-.02	-.27**	.03	-.35***	-.41***	-.51***	.61***	----

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3

Hierarchical Multiple Regression Analysis Predicting Self-Efficacy Expectations

Step	Predictor variable	R^2	ΔR^2	β	p
Step 1		.000	.000		.957
	Sex			-.005	.957
Step 2		.146	.146		.002
	Attitudes			.314	.011
	Quantity of contact			-.028	.815
	Quality of contact			.163	.236
	Knowledge			-.256	.036
Step 3		.161	.015		.172
	Appearance			-.128	.172
Step 4		.197	.036		.499
	Sex x Appearance			.078	.830
	Attitudes x Appearance			.343	.677
	Quantity of contact x Appearance			.458	.272
	Quality of contact x Appearance			-.169	.756
	Knowledge x Appearance			.190	.528

Note. Appearance was coded 0 for typical appearance and 1 for atypical appearance. Sex was coded 1 for male and 2 for female.

Table 4

Summary of Hierarchical Multiple Regression Analysis Predicting Anxiety

Step	Predictor variable	R^2	ΔR^2	β	p
Step 1		.026	.026		.090
	Sex			-.162	.090
Step 2		.139	.113		.011
	Attitudes			.152	.215
	Quantity of contact			-.020	.867
	Quality of contact			-.476	.001
	Knowledge			.245	.045
Step 3		.152	.013		.203
	Appearance			.120	.203
Step 4		.212	.060		.196
	Sex x Appearance			-.160	.655
	Attitudes x Appearance			-.540	.508
	Quantity of contact x Appearance			-.359	.384
	Quality of contact x Appearance			-.604	.263
	Knowledge x Appearance			.160	.592

Note. Appearance was coded 0 for typical appearance and 1 for atypical appearance. Sex was coded 1 for male and 2 for female.

Table 5

Summary of Hierarchical Multiple Regression Analysis Predicting Willingness to Interact

Step	Predictor variable	R^2	ΔR^2	β	p
Step 1		.010	.010		.307
	Sex			.098	.307
Step 2		.288	.278		<.001
	Attitudes			.133	.232
	Quantity of contact			.000	1.000
	Quality of contact			.519	<.001
	Knowledge			-.197	.076
Step 3		.299	.011		.213
	Appearance			-.107	.213
Step 4		.352	.054		.154
	Sex x Appearance			.258	.428
	Attitudes x Appearance			.008	.991
	Quantity of contact x Appearance			-.200	.592
	Quality of contact x Appearance			.679	.166
	Knowledge x Appearance			.281	.299

Note. Appearance was coded 0 for typical appearance and 1 for atypical appearance. Sex was coded 1 for male and 2 for female.

Table 6

Means and Standard Deviations for Predictor and Dependent Measures in Study 2

Measure	<i>M</i>	<i>SD</i>	<i>alpha</i>
Attitudes	6.80	.93	.86
Quantity of contact	4.73	1.40	.70
Quality of contact	6.42	2.15	.71
Knowledge	3.77	1.68	.87
Communal traits	6.75	.95	.91
Agentic traits	6.38	.86	.86
Self-Efficacy	6.36	1.33	.83
Willingness to Interact	6.64	1.75	.92
Anxiety	3.81	1.88	.91

Table 7

Correlations between Predictor and Dependent Measures in Study 2

	1	2	3	4	5	6	7	8	9	10	11	12
1. Sex	----											
2. Appearance	.04	----										
3. Identification	.11	.03	---									
4. Attitudes	.20**	-.03	.09	---								
5. Quantity of Contact	-.04	-.02	.002	.50***	---							
6. Quality of Contact	.02	.08	-.003	.54***	.57***	---						
7. Knowledge	.03	-.04	-.10	.43***	.67***	.41***	---					
8. Communal Traits	.01	.13	.01	.06	.05	.11	.05	---				
9. Agentic Traits	-.004	-.03	.04	.11	.08	.13	.12	.68***	---			
10. Self-Efficacy	.01	-.27***	.14	.41***	.25**	.28***	.19**	.13	.18**	---		
11. Willingness to Interact	.09	-.08	.07	.39***	.21**	.27***	.19**	.22**	.24**	.62***	---	
12. Anxiety	-.02	.15*	-.14*	-.39***	-.23**	-.29***	-.18**	-.08	-.13	-.63***	.74***	---

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8

Summary of Hierarchical Multiple Regression Analysis Predicting Self-Efficacy Expectations

Step	Predictor variable	R^2	ΔR^2	β	p
Step 1		.003	.003		.493
	Sex			.051	.493
Step 2		.167	.164		<.001
	Attitudes			.383	<.001
	Quantity of contact			.005	.959
	Quality of contact			.051	.568
	Knowledge			-.007	.937
Step 3		.264	.097		<.001
	Appearance			-.292	<.001
	Identification			.123	.065
Step 4		.264	.000		.911
	Appearance x Identification			-.013	.911
Step 5		.380	.116		.002
	Sex x Appearance			-.626	.029
	Attitudes x Appearance			-.666	.275
	Quantity of contact x Appearance			.384	.306
	Quality of contact x Appearance			.718	.028
	Knowledge x Appearance			.061	.793
	Sex x Identification			.225	.401
	Attitudes x Identification			.837	.167
	Quantity of contact x Identification			.536	.143
	Quality of contact x Identification			-.300	.365
	Knowledge x Identification			-.206	.391

Note. Appearance was coded 0 for typical appearance and 1 for atypical appearance. Identification was coded 0 for no ID and 1 for ID. Sex was coded 1 for male and 2 for female.

Table 9

Summary of Hierarchical Multiple Regression Analysis Predicting Anxiety

Step	Predictor variable	R^2	ΔR^2	β	p
Step 1		.001	.001		.718
	Sex			-.027	.718
Step 2		.165	.164		<.001
	Attitudes			-.325	<.001
	Quantity of contact			-.017	.867
	Quality of contact			-.114	.198
	Knowledge			-.005	.955
Step 3		.215	.051		.004
	Appearance			.196	.004
	Identification			.117	.088
Step 4		.219	.003		.409
	Appearance x Identification			.098	.409
Step 5		.312	.094		.018
	Sex x Appearance			-.274	.354
	Attitudes x Appearance			-.057	.928
	Quantity of contact x Appearance			-.557	.153
	Quality of contact x Appearance			-.771	.022
	Knowledge x Appearance			.366	.135
	Sex x Identification			-.196	.482
	Attitudes x Identification			-.689	.276
	Quantity of contact x Identification			.022	.954
	Quality of contact x Identification			.405	.241
	Knowledge x Identification			.228	.365

Note. Appearance was coded 0 for typical appearance and 1 for atypical appearance. Identification was coded 0 for no ID and 1 for ID. Sex was coded 1 for male and 2 for female.

Table 10

Summary of Hierarchical Multiple Regression Analysis Predicting Willingness to Interact

Step	Predictor variable	R^2	ΔR^2	β	p
Step 1		.008	.008		.217
	Sex			.092	.217
Step 2		.165	.156		<.001
	Attitudes			.356	<.001
	Quantity of contact			-.009	.933
	Quality of contact			.085	.336
	Knowledge			-.002	.981
Step 3		.177	.012		.289
	Appearance			-.102	.144
	Identification			-.042	.552
Step 4		.183	.006		.255
	Appearance x Identification			.138	.255
Step 5		.321	.139		.001
	Sex x Appearance			-.223	.446
	Attitudes x Appearance			.147	.816
	Quantity of contact x Appearance			.183	.635
	Quality of contact x Appearance			.686	.041
	Knowledge x Appearance			-.211	.383
	Sex x Identification			.928	.001
	Attitudes x Identification			.302	.630
	Quantity of contact x Identification			.507	.182
	Quality of contact x Identification			-.593	.085
	Knowledge x Identification			-.515	.040

Note. Appearance was coded 0 for typical appearance and 1 for atypical appearance. Identification was coded 0 for no ID and 1 for ID. Sex was coded 1 for male and 2 for female.

Figure 1.

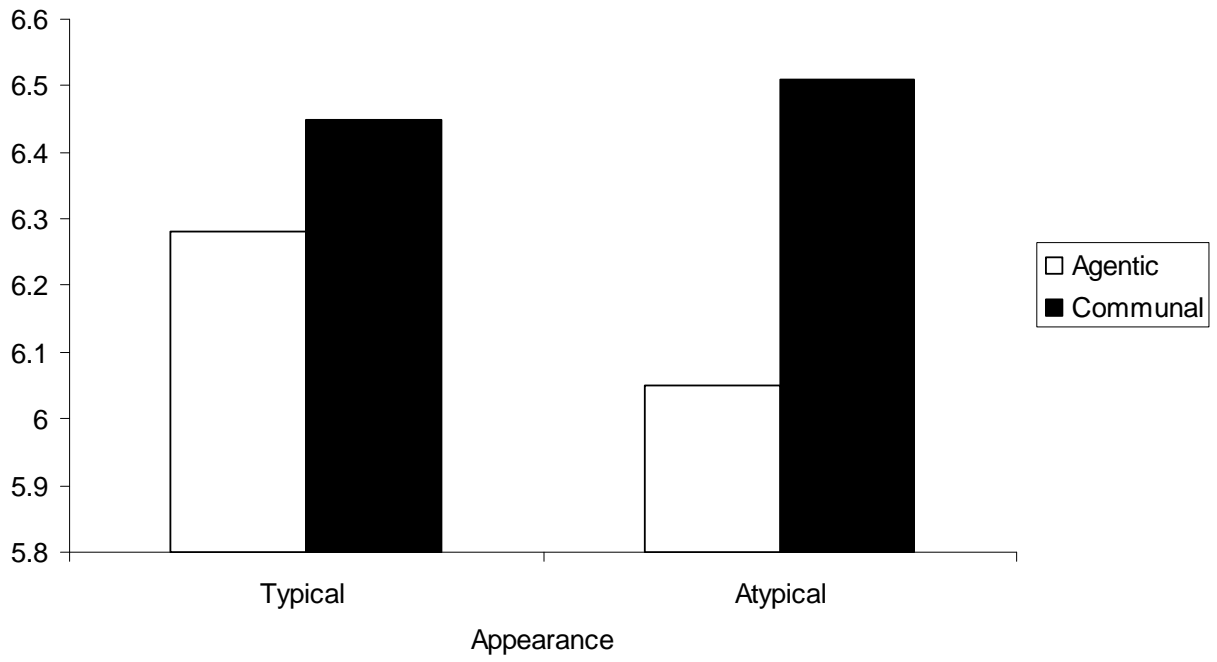


Figure 2.

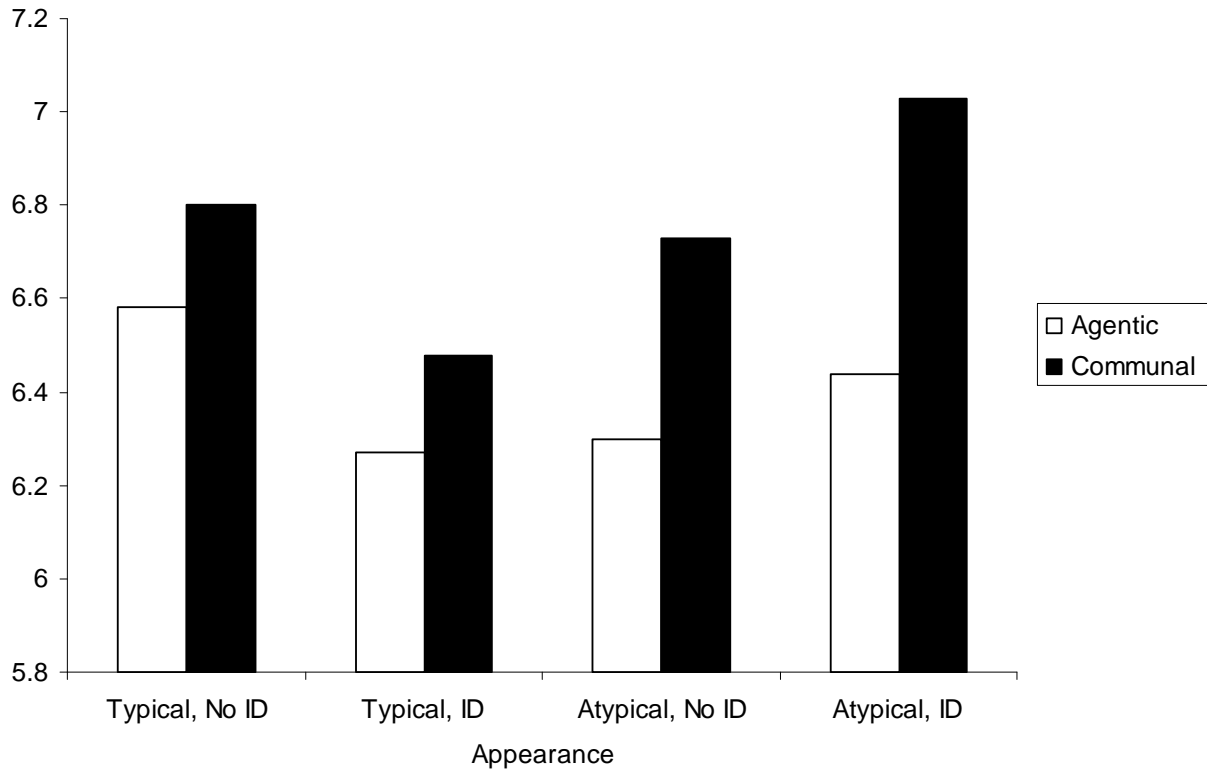


Figure 3.

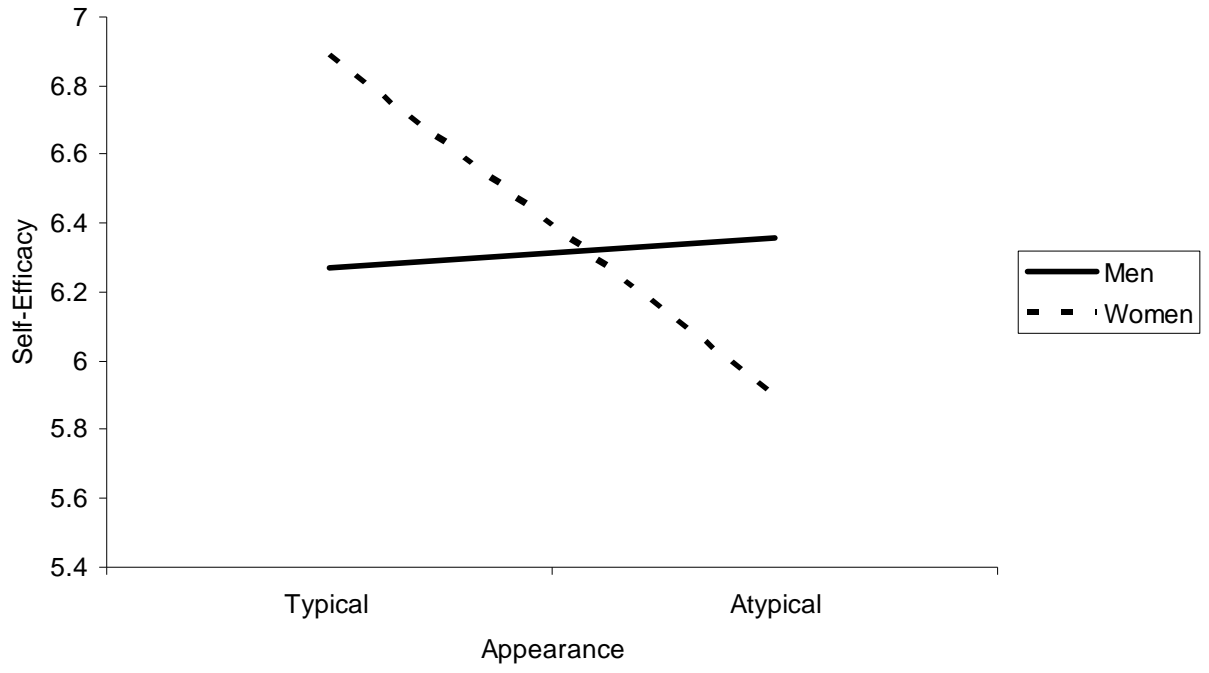


Figure 4.

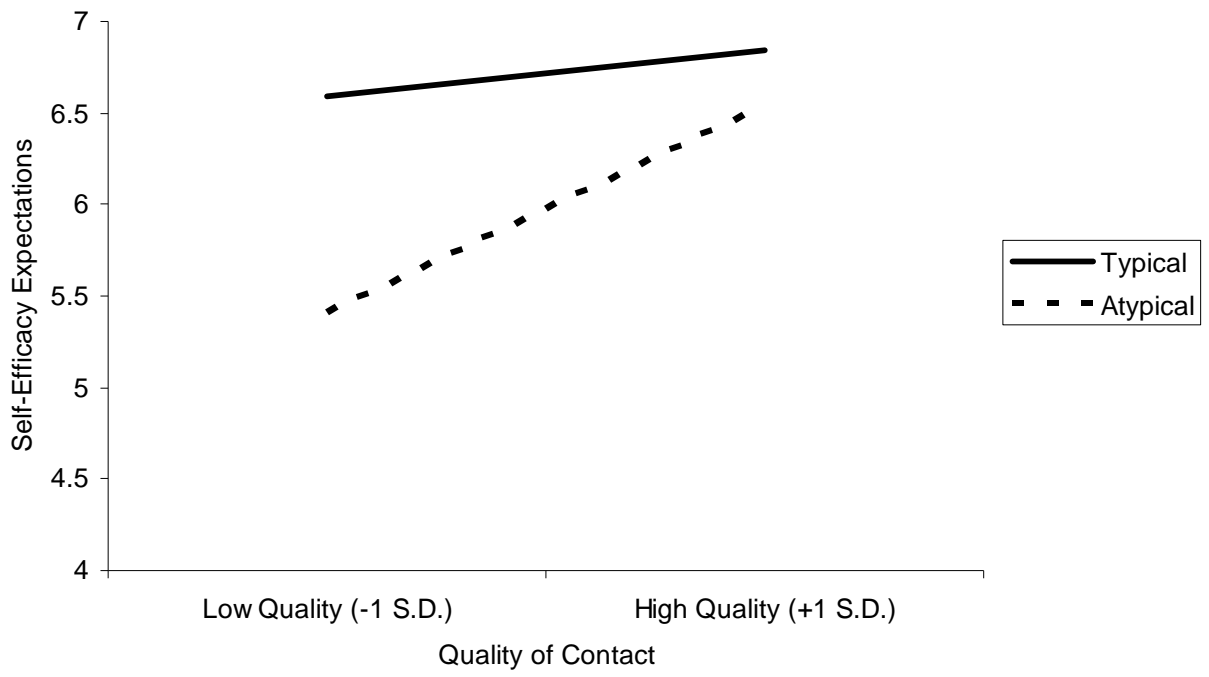


Figure 5.

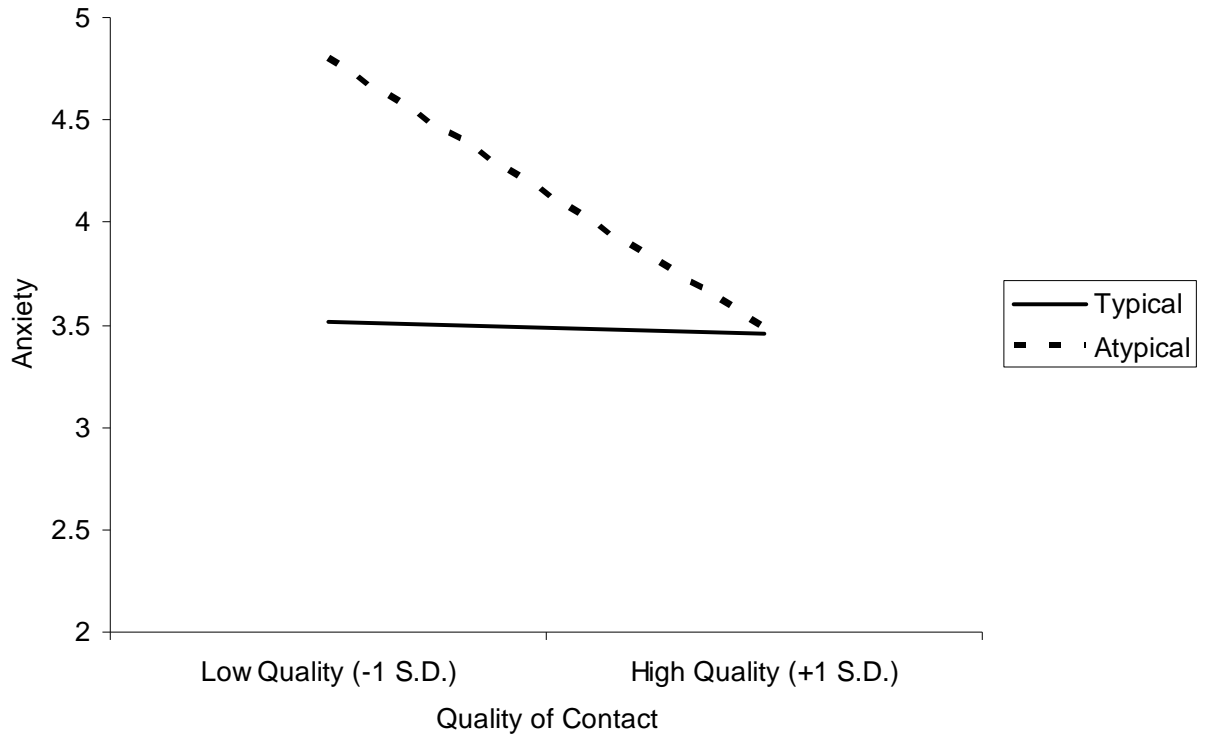


Figure 6.



Figure 7.

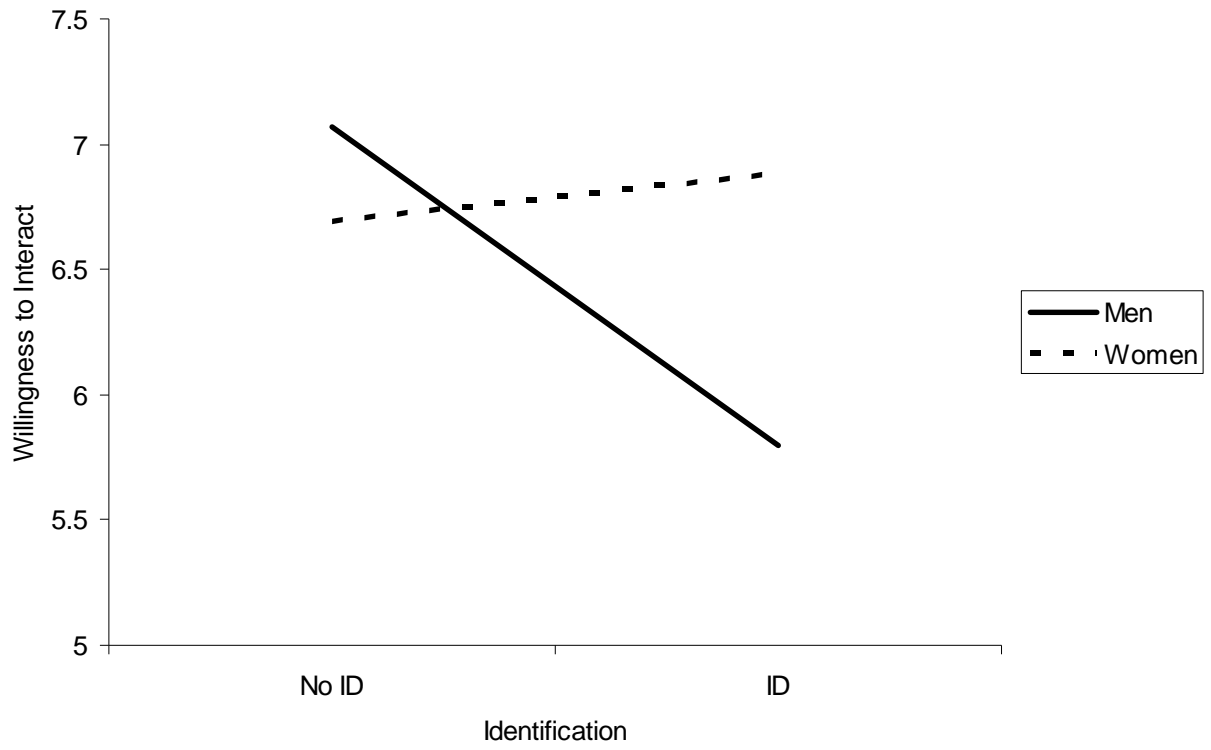


Figure 8.

