KNOWING VERSUS LIKING: SEPARATING NORMATIVE KNOWLEDGE FROM EVALUATION IN IMPRESSIONS

by

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Abstract

Accurately perceiving the personality of the average person corresponds broadly with stereotype accuracy – the generalizability of one's impressions to other individuals. Previous research has demonstrated that the normative personality profile is highly socially desirable (Borkenau & Zaltauskas, 2009; Wood, Gosling & Potter, 2007). Due to the highly evaluative nature of the normative personality profile, individual differences in perceiving others either more or less positively - the halo effect - is often considered an evaluative artifact that is either statistically removed or minimized through item selection. However, what if individual differences in normative judgments reflect not just evaluative tendencies but also individual differences in generalized knowledge? In Study 1, 1027 participants watched video clips and rated the personality of targets using the Big Five Inventory (BFI; John & Srivastava, 1999) and also completed personality self reports. Using the average self-reports and the social desirability of the personality items (Paulhus, 2009) to predict impressions, we find that despite a high correlation between the normative profile and social desirability, the two independently predict ratings of others. Further, in Study 2 using a modified Q-sort, perceivers (Sample 1 N = 77, Sample 2 N = 88, Sample 3 N = 62) sorted an abbreviated 24item version of the BFI (John & Srivastava, 1999) describing the average person's personality. On average, perceivers had accurate knowledge of the average individual's personality. Additionally, perceivers with greater accuracy in describing the average person rated the personality of ten videotaped targets or the personality of other participants in the round-robin more normatively. This strongly suggests that individual differences in normative judgments are not simply evaluative, but also include a component of knowledge

regarding the average personality. Further, consistent with these effects representing separate constructs, well-adjusted individuals achieve greater levels of normative accuracy by having greater normative knowledge, while perceivers who explicitly evaluate others more positively achieve greater normative accuracy by rating others in a more socially desirable manner.

Preface

Portions of the data used in Chapter 2 appear in previously published work, but the primary analyses presented here do not overlap with any of the articles. Specifically, portions of the data used in Study 1 were used in Chan, M., Rogers, K. H., Parisotto, K. L., & Biesanz, J. C. (2011). Forming first impressions: The role of gender and normative accuracy in personality perception. Journal of Research in Personality, 117-120. doi:10.1016/j.jrp.2010.11.001 (Samples 1 & 2), Biesanz, J. C. (2010). The social accuracy model of interpersonal perception: Assessing individual differences in perceptive and expressive accuracy. Multivariate Behavioral Research, 45(5), 853 - 885. doi:10.1080/00273171.2010.519262 (Study 1), and Biesanz, J. C., & Human, L. J. (2010). The cost of forming more accurate impressions: Accuracy-Motivated perceivers see the personality of others more distinctively but less normatively than perceivers without an explicit goal. Psychological Science : A Journal of the American Psychological Society / APS. doi:10.1177/0956797610364121 Data used in Study 2, Sample 3 were used in Biesanz, J. C., Human, L. J., Paquin, A. -C., Chan, M., Parisotto, K. L., Sarracino, J., & Gillis, R. L. (2011). Do we know when our impressions of others are valid? Evidence for realistic accuracy awareness in first impressions of personality. Social Psychological and Personality Science. doi:10.1177/1948550610397211 (Study 1, Sample 2).

The data used in Study 2, Samples 1 and 2 was approved by UBC Behavioural Research Ethics Board, # H08-01840 and Sample 3 was approved by the UBC Behavioural Research Ethics Board, # H06-03996.

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Chapter 1: Introduction

It is exceedingly difficult to separate information from evaluation in personality traits. Terms used to describe personality often include descriptive, as well as, evaluative aspects (Peabody, 1967). Imagine two individuals, Paul and Nick, who meet at a party. Nick later describes to his friends his impression that Paul is very *agreeable* person. Although part of this judgment is likely based on the information Paul provides when they meet, it is unlikely to be completely based on this information. What else could Nick have used to form his impression of Paul? Two other important influences on Nick's judgment are information about how agreeable people generally are and his tendency to evaluate others positively or negatively. That is, a trait adjective such as *agreeable* is useful in describing an individual in that most people are at least somewhat agreeable, but it carries with it at the same time a certain level of social desirability.

The problem of personality items such as trait adjectives simultaneously including evaluative and descriptive aspects is evidenced by the strong correlation between the average self-report personality profile (normative profile) and social desirability (Edwards, 1957; Wood, Gosling, & Potter, 2007; Borkenau & Zaltauskas, 2009). For example, people tend to report higher levels of agreeableness than neuroticism and as the social desirability of the item increases, so does the likelihood that participants will endorse the item. Given the evaluative nature of many personality descriptors, much research has attempted to control these tendencies in personality ratings. However it is possible that important information is also being lost in this attempt. Despite the strong relationship between the normative profile and social desirability, the two constructs may not be equivalent and could, in fact,

independently predict impressions. As such, the present manuscript focuses on people's generalized tendencies to rate others in a manner that appears consistent with an evaluative tendency or positivity bias. Specifically, we focus on disentangling the contributions of evaluative biases from normative information to better understand the process through which perceivers form impressions.

Common practice in measuring the accuracy of first impressions is to have a perceiver rate a single target on several traits or multiple targets on only a single trait. However, given the strong relationship between social desirability and the normative profile, these research designs do not provide the opportunity to disentangle normative information from social desirability. For instance, imagine now Paul and Nick, after becoming close friends, are each interviewing possible new roommates for their house. They end up meeting four other individuals: Joseph, John, Jamie, and Jack. Paul and Nick both rate the individuals on agreeableness, giving them scores of 3, 5, 5, and 7, respectively. In reality, the individuals are a 2, 4, 4, and 5, respectively, on agreeableness. Thus, Paul and Nick both rated all four of the individuals as slightly higher than they are in reality (see Table 1). By measuring accuracy and bias in this manner, Paul and Nick are demonstrating a mean level bias (Fletcher & Kerr, 2010; West & Kenny, 2011). That is, Paul and Nick, on average, rated the other individuals as a 5 on agreeableness, but in reality these four individuals have an average rating of 3.75 on agreeableness. Thus, it would appear that Paul and Nick are both demonstrating a positivity bias because they rated these four individuals higher than reality on agreeableness.

There are a number of ways in which Paul and Nick could have reached their impressions. Given that agreeableness is a very socially desirable trait, it is possible that Paul

viewed the individuals as higher than reality because he has on "rose-colored" glasses and really likes people. Paul then could have rated them high because he tends to view others positively and as more agreeable than reality.

Yet it is possible that Nick's impressions were reached through a different mechanism, such as using other sources of information to fill in any gaps in his impressions. There are a number of possible sources of information that Nick may have used. For example, he may have used information regarding his own personality to determine the agreeableness of the others (i.e., assumed similarity). He could have used social categorical information: Perhaps Joseph is a lawyer, while Jack is a preschool teacher, thus leading Nick to believe Jack is much more agreeable than Joseph (Fiske & Neuberg, 1990). Finally, Nick may have used his understanding of what people are like on average to form his impressions (normative information; Chan, Rogers, Parisotto, & Biesanz, 2011). That is, Nick might know that individuals, on average, are a 5 on agreeableness, even though these four individuals are lower than average. Thus, Nick's mean level shift may be a result of normative knowledge, not a positivity bias. Though other mechanisms could be at play, we will be focusing on the influence of normative knowledge, as it is commonly confused empirically with a positivity bias.

By examining accuracy across many targets using a single, socially desirable trait, it is impossible to tell the difference between an overly positive Paul and a knowledgeable Nick. If Paul and Nick's ratings were compared across a number of traits, with differing levels of social desirability, a much different pattern of results would emerge. Paul would continually demonstrate a positivity bias (higher than reality on socially desirable traits and

lower than reality on socially undesirable traits), but Nick would demonstrate some level of accuracy, as his impressions would vary as a function of normativeness, not just positivity.

For example, imagine how Paul and Nick would perceive the applicability of the following behaviors to the average person: giving 20 dollars to charity, giving 20 dollars to a homeless person begging on the streets, and stealing money from a homeless person begging on the streets. Paul would view the first two actions, giving 20 dollars to a charity or a homeless person, as equally representative of how the average person behaves because he views them as equally positive, while he would not think stealing from the homeless would be how the average person behaves because this is very negative.

On the other hand, Nick would view only giving 20 dollars to charity as representative of the average person, as he would be aware that giving 20 dollars to a homeless person is not something the average person would do, nor would they steal from the homeless person. Thus, if Paul and Nick were only asked about giving money to charity, their impressions would look similar because the action is socially desirable and fairly likely to occur. Their impressions differ drastically when considering giving the same amount of money to a homeless person because, while it is arguably an equally positive action compared to donating to charity, it is much less likely to occur. Thus, when considering only one action at a time, the positivity and likelihood of each action is conflated. There would be no way to tell whether Paul and Nick thought about how *good* an action was or how *likely* it was. Consequently, when considering a single, socially desirable trait, current researchers would and could only classify Paul and Nick as positively biased, but this method may lose important and useful information about perceivers.

In order to understand the importance of the conflation between normative information and evaluative tendencies the introduction is organized as follows. First we discuss the halo effect. We then investigate how a halo effect could appear within personality ratings, the impact of a halo effect on accurate interpersonal perception, methods of controlling or removing halo effects and finally, specific explanations for the halo effect commonly found within the Big Five Factors of personality. We will then define accurate interpersonal perception, discuss in more depth accurate personality judgments, explore how normative information could improve the accuracy of impressions, and discuss the importance of normative accuracy. Finally we summarize research designs that disentangle normative information from evaluative tendencies.

1.1 Halo Effect

Though the dimensions of personality are considered orthogonal (e.g. Costa & McCrae, 1995; Goldberg, 1993), correlations have often been found between the factors (e.g. Digman, 1997). These unexpected correlations, termed a halo effect, have caused a debate within the field as to why and how they appear. The halo effect occurs when there is a failure to discriminate between the specific personality characteristics of an individual, thus creating spurious correlations between different characteristics. While there is a debate as to just how common and problematic the halo effect is (for a review, see Murphy, Jako, & Anhalt, 1993), it has a long history in psychology and is thought to occur in most situations when an individual forms an impression about another (see Cooper, 1981). Most often, the halo effect is discussed in situations of evaluative judgments, such as employee assessment (e.g. Thorndike, 1920). Yet, we also make judgments about the characteristics of other people everyday. While these judgments may not be as high stakes as employee evaluations, our impressions of others are important in deciding whether we want to be friends, lab

partners or romantic partners. Given the ubiquity of social interactions, it becomes important to understand how and why particular personality judgments are formed.

1.1.1 Halo Effect in Personality Impressions

There are a number of methodological¹ and substantive reasons as to why a halo effect could appear in personality data (Cooper, 1981); we focus on the substantive possibilities. One reason a halo effect could appear is that perceivers are relying on a salient feature of the target to make decisions regarding specific characteristics. For example, attractive individuals tend to be viewed more positively. Specifically they are perceived as sociable, intelligent, competent, and well-adjusted (Feingold, 1992; Langlois et al., 2000). Perceivers then believe that certain positive traits are associated with physical attractiveness and instead of rating the specific unique and distinctive characteristics of the person, perceivers are relying on their beliefs that attractive individuals have positive traits. Though it should be noted that a salient feature does not have to be a physical attribute.

Similarly, perceivers may rely on a general feeling towards a person when rating their personality. For example, once a perceiver forms a general impression of a target, whether good or bad, judgments of specific characteristics will fall in line with the initial overall impression (Nisbett & Wilson, 1977). If Paul meets Jack and generally likes him, he may subsequently describe his personality in positive terms, glossing over any less desirable characteristics. In this way, Paul's overall impression of Jack seeps into his impression of Jack's specific characteristics.

The halo effect could operate on three different levels within ratings of personality: the target, the perceiver, and the perceiver-target dyad. Research on the relationship between target physical attractiveness and person perception demonstrates how the halo effect could function on each of these levels. At the *target* level, individuals who are physically attractive

are viewed in a more socially desirable manner and thus more positively (Feingold, 1992; Langlois et al., 2000; Lorenzo, Biesanz, & Human, 2010) on average across different perceivers. On the *perceiver* level, some individuals may view everyone positively as if through rose-tinted glasses, such as a positive Paul, while others may not have such optimistic perspectives (Srivastava, Guglielmo, & Beer, 2010; Wood, Harms, & Vazire, 2010). At the *perceiver-target dyadic* level, a perceiver who views a target as more attractive than the target is generally viewed, adjusting for the perceiver's general level, forms a more socially desirable impression (Lorenzo et al., 2010). For the common personality research design where informant-reports are collected and each informant only provides data on one target, it is not possible to separate these three possibilities and all three effects can potentially result in data consistent with a halo effect.

1.1.2 Halo Effect and Accuracy

The halo effect generally has been assumed to degrade the quality of ratings (e.g. Cooper, 1981) and reduce the utility of evaluative feedback (Saal & Knight, 1988). More recent research has demonstrated that the presence of a halo does not necessarily indicate inaccurate ratings (e.g. Murphy & Balzer, 1989). In fact, though ratings of attractive individuals often demonstrate a positive halo, these ratings are also often *more* accurate than ratings for individuals who are not physically attractive (Lorenzo et al., 2010). Further, while the presence of a halo makes it more difficult to distinguish between an individual's specific abilities, it can make it easier to distinguish between individuals, often an important use of ratings in the workplace (Murphy & Balzer, 1986, 1989).

Social Desirability and Accuracy. The social desirability of a trait can affect how much judges agree on an individual's personality. For example, neutral traits have higher interrater agreement than traits on either end of the socially desirable spectrum (Human &

Biesanz, 2011; John & Robins, 1993). Further, removing evaluative content from personality items can increase the interrater agreement (Konstabel, Aavik, & Allik, 2006). This effect could be due to assumed similarity also being high when social desirability is high (Human & Biesanz, 2011), thus removing the social desirability of an item can increase interrater agreement because assumed similarity is also being removed.

1.1.3 Treatment of Halo Effect

There are three broad strategies used to try to reduce halo effects: changing the rater, changing the scale, or statistical removal after the data is collected. To change the rater, researchers might increase the rater's familiarity with the ratee (e.g. Brown, 1968) or teach the rater's about possible rating errors (e.g. Bernardin & Pence, 1980). Scale alteration could occur by including irrelevant categories (e.g. Rizzo & Frank, 1977) or using items that are specific behavioral terms (e.g. Smith & Kendall, 1963). Finally, there are various methods used to partial out the effect of the halo (e.g. Landy, Vance, Barnes-Farrell, & Steele, 1980; Murphy, 1982). Despite the fact much research has been devoted to finding methods to reduce the halo effect, these methods either do not fully control the halo effect or do not improve the quality of the data (Murphy et al., 1993).

Further, there are specific strategies adapted to control for social desirability biases which can be grouped into three categories: rational, covariate, and factor-analytic (Paulhus, 1981). *Rational* techniques focus on the scale used to assess personality by using a forced choice format or including items that are neutral or subtle. *Covariate* methods focus on each rater's responses and statistically remove any socially desirable responding. *Factor analytic* methods set an evaluative factor and use orthogonal rotation to create further factors that are nonevaluative. Ultimately though, the question remains whether useful information is being lost through the attempts to control halo effect and social desirability biases.

1.1.4 Halo Effect in the Big Five

As noted earlier, correlations have often been found between the dimensions of the Big Five factors (e.g. Digman, 1997) despite the fact that the dimensions are considered orthogonal (e.g. Costa & McCrae, 1995; Goldberg, 1993). One explanation is that the Big Five do not tap the most basic factor(s) of personality (e.g. Rushton, Bons, & Hur, 2008; DeYoung, 2006). On the other hand, as previously noted, given the evaluative nature of personality descriptors (e.g. Peabody, 1967; John & Robins, 1993; Saucier, Ostendorf, & Peabody, 2001), it is possible that a halo effect is the result of evaluative tendencies or a positivity bias. Thus, the question remains as to whether the halo in personality judgments is a reflection of a broader trait or due to evaluation. Currently, opinions are mixed, as recent work on meta-traits as well as biases in personality ratings have been put forth as explanations for the observed halo effect.

Bias. The correlations between the Big Five have been explained as biases (e.g., Biesanz & West, 2004; Paulhus & John, 1998). Paulhus and John (1998) proposed a twofactor model of how biases can influence personality ratings. In line with Wiggins (1964) they labeled the two factors *alpha* and *gamma* and were interpreted as *egoistic* (high extraversion and openness) and *moralistic* (high agreeableness and conscientiousness) biases, respectively. Drawing on the intersection of literature on personality traits and defense mechanisms, they propose a possible sequence that leads to the differences in self-favoring biases. Individuals high on the Alpha factor are likely to place a greater value on agency, thus motivating their need for power, leading to egoistic self-deceptive bias, which can be noted through a self-favoring bias on extraversion and openness. Essentially people who are more concerned with "getting ahead" are likely to report higher levels of extraversion and openness than will knowledgeable informants. On the other hand, individuals high on the Gamma factor are likely to place a greater value on communion, thus motivating their need for approval, leading to a moralistic self-deceptive bias, which can be noted through a selffavoring bias on agreeableness and conscientiousness. These individuals are more concerned with "getting along" and are likely to report higher levels of agreeableness and conscientiousness than will knowledgeable informants. In summary, because individuals are likely to value either agency or communion, they wish to be seen in that manner and report on their personalities according to this desire, causing the Big Five traits to be related in a specific manner.

Further support for the bias explanation of the Big Five correlations can be seen in the evaluative history of personality judgments. As mentioned previously, each of the Big Five dimensions has one pole that is more socially desirable than the other, such that ratings, which are meant to be objective, are instead subjectively positive (John & Robins, 1993; Saucier et al., 2001). Additionally, as the social desirability of an item increases, the likelihood that participants will endorse the item also increases (Edwards, 1957).

Substantive Interpretations. If the Big Five are not the most basic factors of personality, then the unexpected correlations between personality factors appear because individuals who are higher are trait A are actually more likely to be higher on trait B; there is reliable variance. Proponents suggest there exist one or two meta-traits encompassing these five dimensions (e.g., Rushton et al., 2008; DeYoung, 2006; Musek, 2007; Digman, 1997). Digman (1997) was the first to systematically and thoroughly examine correlations between the traits; concluding that two higher order factors exist, which he named *alpha* and *beta*. *Alpha* encompasses conscientiousness, agreeableness, and neuroticism (reverse coded) and *beta* encompasses extraversion, and openness to experience. The "Big Two" has further been

supported by (DeYoung, Peterson, & Higgins, 2002) who relabeled *alpha* as *stability* and *beta* as *plasticity*. The correlations among the Big Five have also been explained using the "Big One" – a single general personality factor that is responsible for observed associations among lower order facets of personality (e.g., Rushton et al., 2008; Musek, 2007). Regardless of the number of meta-traits, the argument is that the halo effect commonly found in the Big Five is because the dimensions are, in reality, related in a substantively meaningful way.

On the other hand, the evaluative component, once separated from the basic personality judgments, functions similarly to a personality trait (Anusic, Schimmack, Pinkus, & Lockwood, 2009) and may be a separate facet of personality (Saucier, 1994). That is, the halo effect is due to real individual differences on evaluation, which are reliable and stable, and can be separate from traditional facets of personality. Using various methods outlined earlier to control for social desirability bias, Saucier (1994) reports five dimensions of personality, specifically a general evaluation dimension orthogonal to each of the other four dimensions. This dimension encompasses traits related to likability, competence, and maturity. Thus, by controlling for the social desirability of trait items, Saucier (1994) has shown a different configuration of personality facets, which includes general evaluation as a trait dimension as opposed to method variance or bias.

Despite the amount of research devoted to understanding the halo effect over its long history, results remain mixed. Further, given the efforts to control or remove halo effects in data, it is critical to understand what exactly is being altered by these techniques and more importantly, what information may be getting lost.

1.2 Accurate Personality Impressions

1.2.1 Accuracy Defined

We define personality in terms of act frequency of behaviors (Buss & Craik, 1983; Fleeson, 2001; Mehl, Pennebaker, Crow, Dabbs, & Price, 2001). An individual's personality trait is determined by the sum total of their actions in any situation and over an infinite length of time. For example, suppose Jill generally performs 10 agreeable behaviors during a week, whereas Jim performs 2 agreeable behaviors in that same time frame. Jill is more agreeable than Jim. Explicitly defining personality traits in this manner allows for the usage of a true mean for personality traits. For example, suppose that on average people perform 6 agreeable behaviors in a week. Jill would thus have a higher agreeable behavior base rate than the average person, while Jim would have a lower base rate.

Following Funder's Realistic Accuracy Model (RAM; Funder, 1995, 1999), a judgment of personality is accurate to the extent that it relates to *realistic* criteria for the individual's personality. A variety of sources of information can be used to validate a perceiver's impression such as the target's self-report, close informant reports or behavioral measures. Using the previous example, Jim's impressions of Jill as agreeable would be *realistically* accurate to the extent that Jill describes herself as agreeable, Jill's friends describe her as agreeable or a behavioral measure indicates that Jill is agreeable.

Further, RAM (Funder, 1995, 1999) uses four steps to model the process of forming accurate impressions: relevance, availability, detection and utilization. The target must emit *relevant* cues about their personality and these cues must be *available* to the perceiver. The perceiver then must *detect* these cues and *utilize* the information appropriately to form an accurate impression. While each step can have an effect on the accuracy of the impression formed, we are specifically concerned with the utilization step because at this step, two

perceivers who witness the exact same target behaviors could still draw very different conclusions about the target's personality.

Kenny (1991, 1994) proposes another way to examine accuracy and consensus in person perception through his weighted average model (WAM). According to WAM, perceivers form impressions after observing acts and assigning a scale value to these acts. Weighted stereotype and unique impression components are then added to the weighted average of the scale values to create the overall impression. Thus, WAM explicitly models the *utilization* process defined in RAM, specifically noting perceivers may use idiosyncratic information not related to the specific target when forming an impression. The question then becomes how much weight should a perceiver give to this outside information in forming their impressions.

1.2.2 Increasing Accuracy

Imagine you have just sat down for lunch with a friend when he bets you that you cannot accurately guess the time on the watch in his pocket. You take this bet and then use a variety of information to inform your decision regarding the time. You consider the time you were supposed to meet for lunch (noon), you then take into account the fact your friend is often a few minutes late and finally you factor in a bit of time to cover ordering food and finding a seat. After considering these factors, you tell your friend you think it is 12:13. Your friend pulls out his watch and shows you that his watch actually shows the time is 8:17 in the morning. Your friend goes on to explain that his watch is broken and it stopped working at 8:17 this morning. Unfortunately, this means you lost the bet, you did not accurately predict the time on his watch, but that does not mean your methods and reasoning

were incorrect. In fact, when you find a clock in the restaurant that is working, you see that it reads 12:16, not far off of your prediction.

This parallels the process in which personality impressions are formed of new acquaintances. When meeting someone for the first time, you are likely to use other information to help in the impression you form, which may or may not be directly related to actual personality of this individual. Further, this could often lead to a somewhat accurate impression on average across many impressions of others, but there will be times when the impression is completely wrong for some individuals, as with the broken watch. However, on average, an individual who uses their knowledge of what people are like in general when forming specific impressions is going to be more accurate than an individual who attempts to form impressions using no outside knowledge.

Applying a test theory approach to person perception, we can think of impressions as equal to an individual's true personality and error $(X = T + \varepsilon)$. Given that Jill's personality is the total of all of her actions and Jim witnessed perhaps only 5 minutes of actions, Jim's impression is based on a small sample of Jill's possible behaviors. Thus, while Jim's impression of Jill will be reasonably accurate, a sizeable amount of error is also associated with his impression. After Jill and Jim have been friends for a while, Jim's impression of Jill's behaviors. Thus, Jim's impression will become more accurate because Jim will have witnessed a greater sample of Jill's behaviors. Thus, Jim's impression will become more similar to Jill's true personality and, in turn, the amount of error associated with Jim's impression will decrease. While increased exposure to Jill would allow Jim to have a more accurate impression, is there a way for Jim to be more accurate in his first impression of Jill? More broadly, what would be the best method for a person to generally form accurate first impressions of others?

There are two methods a person could use when meeting someone new, which specifically affect the *utilization* process noted by RAM (Funder, 1995, 1999), the blank slate approach or the preconceived notion approach. The blank slate approach would mean that when Jim met Jill he based his impression solely on Jill's behavior during that short time; Jim entered the interaction without knowing whether Jill was more likely to be hostile or kind. If Jim were asked to describe the average person, he would say that he has no idea what the person could be like; he has no expectations. On the other hand, Jake uses his ideas about how people generally are, base rate information, to influence his impression of Jill. In terms of WAM (Kenny, 1991, 1994), Jake's impression of Jill would not just include his understanding of Jill's actions, but also stereotype and unique information. When navigating their social worlds, who is going to form more accurate impressions on average, Jim or Jake?

Assuming the Jake's knowledge of what people are generally like is reasonably accurate, he is going to have more accurate first impressions than Jim by adjusting his impressions to include information about the average person. While it may seem counter intuitive to use information completely unrelated to the person at hand in forming impressions, Cronbach (1955) noted that perceivers can attain a reasonable degree of accuracy simply by judging each target as average on the trait. If a perceiver is trying to make an accurate personality judgment and has little to no information about this particular target, the best guess of the target's personality will be what people are like on average because by definition, most people are similar to the average person. Thus, if Jim and Jake formed impressions of 100 targets after meeting them for less than 5 minutes each, Jake is going to have more accurate impressions on average across targets. If perceivers adjust their

impressions of targets to incorporate the average individual's personality they will, on average, across many targets be more accurate than perceivers who make no adjustment.

This method of impression formation will function in a similar manner to regressing to the mean (Campbell & Kenny, 1999). That is, since there is not a perfect correlation between how a perceiver views targets' personalities and their actual personalities, if a perceiver adjusts their impressions to be more inline with the average personality, they will have, on average, less inaccurate perceptions. Recall the equation from earlier $(X = T + \varepsilon)$ where *X* is the raw impression formed by the perceiver, *T* is the true personality for each of the targets, and ε is the amount of error associated with the impressions. The perceiver's impressions, when optimally adjusted to include information about the average person follows the equation $(X' = r_x (T - M_x) + M_x)$ where *X*' is the adjusted personality impression, r_x is the reliability of personality impressions, *T* is the true personality of each target and M_x is the true personality of the average person. Revisiting the previous example on agreeable behaviors, if the average person has 6 agreeable behaviors a week, then $M_x = 6$. Impressions are indeed "regressed" to the average person's agreeable behavioral level.

If we were to correlate a perceiver's raw impression (X) across a large number targets with the targets' real personalities (T) the correlation will be smaller than if we correlated the perceiver's adjusted impression (X') across 100 targets with the targets' real personalities (T). Further, mean squared error will be smaller for the adjusted impression (X') than the raw impression (X). That is, Jake who has reasonably accurate knowledge about the average person and uses this knowledge when forming first impressions will have less error for each impression he forms. For instance, Jake will sometimes see individuals as more kind than they are in reality because of his knowledge of the average person, but he will see some

individuals as less kind than they are for the same reason. Thus, across many interactions Jake's impressions will have a smaller mean squared error, since on average people are average and Jake is using knowledge about the average person in forming impressions of others.

1.2.3 Normative Accuracy

Cronbach (1955) referred to the accuracy obtained by rating targets as average on each trait as stereotype accuracy. In line with Furr (2008), we refer to it instead as normative accuracy. Normative accuracy is how similar to the average person a perceiver tends to view targets. Operationally, normative accuracy is the relationship between the average self-report and the impression a perceiver forms across many targets. If Jason tends to base his impression of specific individuals on what the average person is like, he would have high normative accuracy.

Importance of Normative Accuracy. The utility of normative accuracy can best be understood from a pragmatic accuracy approach. Swann (1984) stated that accuracy is determined by the utility of the impressions formed by perceivers. Understanding what people are generally like or having higher levels of normative accuracy can lead to more successful interactions. For example, if Jake generally felt that everyone was likely to rob him, he would not act appropriately in most social context and would find it difficult to connect with individuals. In this case, Jake would *not* be accurate in the pragmatic sense because how he tends to view people does not help him in social situations, nor would he tend to form accurate impressions of others. On the other hand, if Jake generally felt everyone was kind, he would often act in socially appropriate ways and would tend to have accurate impressions of people, as most people are fairly kind. Thus, understanding what the

average person is like and using this knowledge in everyday interactions should have practical utility.

1.3 Normative Information

Given that using knowledge about the personality of the average individual should, on average, increase the accuracy of impressions, the question becomes whether individuals actually have this knowledge. It is difficult to imagine that people have no knowledge of what people are generally like. Instead individuals most likely have some expectations for the other individuals they meet (Olson, Roese, & Zanna, 1996). Indeed, if an individual had no idea about what people are generally like, he could have thought it equally likely that others are equally likely to give 20 dollars to charity, give 20 dollars to a homeless person or steal 20 dollars from a homeless person. Given that individuals are constantly interacting with others and meeting new people, it makes sense for individuals to have an idea about the personality of the average individual. Further, people would have a difficult time functioning in society without any knowledge of what individuals are like – people would need to constantly be vigilant if others are always as likely to rob someone as give them money.

Previous work indicates that, at least in certain situations, people do have an understanding of the average individual's personality. For instance, Americans can accurately describe how the average personality of individual's varies in different geographical regions within the United States (Rogers & Wood, 2010). Further, individuals seem to understand how personality tends to vary based on music preference (Rentfrow & Gosling, 2007) and based on an individual's facial features (e.g. Berry, 1990). These findings are consistent with explicit knowledge about the average individual's personality. If individuals do have explicit normative knowledge, it is possible that this knowledge also impacts the specific impressions they form of others. Further, there is indirect evidence suggesting that individuals do indeed use normative information when forming first impressions. Previous work done by Biesanz and colleagues (Biesanz, West, & Millevoi, 2007; Biesanz & Human, 2010) decomposed Kenny's (1991, 1994) WAM model into the Cronbach components (1955) shows that normative accuracy initially increases during impressions, but with more information about the specific target, normative accuracy decreases. A perceiver who enters a social interaction as a blank slate and uses no outside information would be equivalent to stereotypic information in the WAM model being given a weight of 0. In this instance, we would expect to see normative accuracy increase indefinitely throughout an interaction and never decrease. This is inconsistent with previous research and, instead, congruent with individuals' using normative information when forming impressions.

1.4 Disentangling Evaluation and Normative Information

As noted earlier, much accuracy research has focused on a single trait at a time (e.g. Fletcher & Kerr, 2010; Kenny, 1994; West & Kenny, 2011). By measuring accuracy using only one trait at a time across many targets, bias can only be defined as a mean level shift. This allows researchers to examine whether evaluation impacts ratings, as evaluation would cause a shift in mean levels. However, from a personality perspective, observing individual differences in mean ratings on a single trait does not provide the ability to infer that these must be strictly related to evaluation. That is, by defining bias in this way, it is impossible to understand the process by which impressions are being formed since there is no difference in the social desirability of the single trait. It is impossible to tell if the impressions were formed using information about the average individual's personality or were formed based on a positivity bias. It is only by examining mean level effects across multiple traits simultaneously that we gain the inferential leverage to begin to understand what underlying

processes might be accounting for these previously observed effects. Thus, with research designs that examine multiple targets along with many different personality dimensions, we are able to investigate whether the impressions formed by a perceiver across many traits reflect a pattern of positive evaluation or a pattern of normative information.

1.5 Overview

The purpose of the present manuscript is to examine the process behind what has generally been considered bias when forming impressions of others. Do individual differences in ratings that researchers have often previously dismissed as bias actually reflect reliable, useful information about the perceivers? The present manuscript has four broad goals. First, to what extent are evaluation and normative information independently associated with perceiver impressions? Second, we assess the extent to which individuals have explicit knowledge of the average individual's personality and use this knowledge when forming impressions of specific others. Third, to what extent is there reliable evaluative variance associated with targets? Finally, we assess the paths through which normative knowledge and evaluation differentially impact impressions for perceivers based on differences in adjustment and positivity.

Chapter 2: Present Research

2.1 Study 1

Participants first completed personality self-assessments. They then watched short video clips of 7 different individuals answering "getting-to-know-you" questions. Participants provided their impression of the individual's personality after each clip.

2.1.1 Methods

Participants. A total of 1027 undergraduates at the University of Wisconsin – Madison watched video clips in several large groups (N = 130) or in individual cubicles (N = 897). Participants included 703 females and 324 males with a mean age of 18.81 years (SD = 2.71) who participated in exchange for course credits.

Measures and Procedures.

Personality Assessment. Self-ratings and other-ratings were completed using the 44item Big Five Inventory (BFI; John & Srivastava, 1999) on scale from 1 (*disagree strongly*) to 5 (*neither agree nor disagree*) to 9 (*agree strongly*).

Target Videos. All participants watched a series of 7 videos of target individuals and subsequently rated the personality of each target. The clips were collected in a previous study and included only female University of Wisconsin undergraduates. In the clips, targets answered basic "getting-to-know-you" questions posed by the same female interviewer for approximately 5 minutes. Though all of the video clips came from the same collection, participants watched different sets of clips which each included 7 of a possible 14 different targets. Further, for a subset of participants videos were counterbalanced with no impact on the results, the majority of participants watched the videos in the same order.

Data Analytic Procedure. To disentangle social desirability and normative information, the current research focuses on only one type of self-other agreement – normative (e.g., Biesanz, 2010; Cronbach, 1955; Furr, 2008) – and examines the *social accuracy model* of interpersonal perception (Biesanz, 2010). As noted previously, normative accuracy is the extent to which a perceiver views targets, on average, as similar to the average person. We are not investigating distinctive accuracy because it is orthogonal to normative accuracy (e.g. Biesanz, 2010) and the current research is not focused on the ability of perceivers to differentiate between the unique characteristics of targets.

In brief, using the logic from the social accuracy model we are analyzing the following *unstandardized* regression equation:

$$Y_{ijk} = \beta_{0ij} + \beta_{1ij}Mean_k + \beta_{2ij}Desire_k + \varepsilon_{ijk}, \tag{1}$$

where Y_{ijk} is perceiver *i*'s rating of target *j* on item *k*, *Mean_k* is the mean self-report on item *k* and *Desire_k* is the level of social desirability for item *k*. More specifically, *Mean_k* is found by averaging the 1027 self-reports collected in this study, that is *Mean_k* is always based on just the participants in that particular study. Similarly, *Desire_k* is found by averaging the 486 judgments of item social desirability completed by a separate group of participants whose data is analyzed in this study (Paulhus, 2009)². For the perceiver *i*-target *j* dyad, the estimated regression coefficient β_{0ij} is the intercept (predicted rating when *Mean_k* = 0 and *Desire_k* = 0). The unstandardized coefficient β_{1ij} is the estimated level of normative accuracy for perceiver *i* with target *j*-the correspondence between the perceiver's ratings and the average person's self-reported personality profile after partialling item *k*'s level of social desirability. Finally, β_{2ij} represents the social desirability of perceiver *i*'s ratings of target *j*, holding *Mean_k* constant. That is, β_{2ij} is the level of social desirability for the perceiver *i*-

target *j* dyad across the 44 assessed personality items holding constant and controlling for the average person's self-reported personality profile.

In the social accuracy model, this basic two-predictor regression equation is estimated for each perceiver-target dyad. Following the general logic of Kenny's (1994) social relations model, main effects for perceivers (averaged across targets) and targets (averaged across perceivers) are estimated, as well as, the residual or interaction term utilizing a crossrandom effects multilevel model. For this example, we are not focusing on the main effects of targets but rather on the perceiver main effects. These main effects and interaction terms represent unstandardized regression slopes. For example, the normative accuracy slope for perceiver *i* with target *j* can be decomposed into the following: $\beta_{1ij} = \beta_{10} + u_{1i} + u_{1j} + u_{1(ij)}$, where β_{10} is the grand mean which represents the normative accuracy effect on average, across all perceivers and targets and u_{1i} is perceiver *i*'s normative accuracy effect on average across targets. It should also be noted that all of the random effects have a mean of 0. We are using multilevel modeling to account for the dependencies in the data and by estimating the random effects we are able to obtain the correct standard errors for the fixed effects and estimate individual differences on effects associated with perceivers.

2.1.2 Results

Social Desirability and the Normative Profile. As expected, there is a strong, significant relationship on the 44 BFI items between the mean self-reported response profile on the BFI and the mean social desirability response profile based on a separate sample (N = 486; Paulhus, 2009), r(42) = .86, p < .001 (see Figure 1). Thus, higher levels of normative accuracy are associated with greater social desirability and more positive impressions (Wood, Gosling, & Potter, 2007).

A further examination of Figure 1 indicates it is possible to find items that have the same level of social desirability, but have drastically different levels of normativeness. For example, *"Is sophisticated in art, music, or literature"* and *"Can be moody"* have a similar level of normativeness, with an average score of 5.76 and 5.77, respectively. Yet, *"Is sophisticated in art, music, or literature"* is significantly more socially desirable with an average score of 6.60, compared to *"Can be moody"* which has only an average score of 2.87 on social desirability. Thus, despite the fact that people tend to endorse these items to a similar extent, they have very different levels of social desirability.

Similarly, "*Is easily distracted*" and "*Tends to be disorganized*" are equally socially desirable with an average score of 3.40. However, "*Tends to be disorganized*" has a significantly lower level of normativeness, with an average score of 4.15 compared to "*Is easily distracted*" with an average normative level of 5.63. Though these two items are equally socially desirable, participants do not equally endorse them. Further, it should be noted that the scale differences between each pair correspond to large effect sizes given the small standard deviations on the scales. Therefore, despite the scales being highly correlated, they are not fully equivalent and there exists the possibility of social desirability and normative knowledge to uniquely predict impressions.

Relationship with Impressions. Next, examining a reduced version of Equation 1, which does not include social desirability as a predictor, we find that on average perceiver impressions are normatively accurate, b = .60, z = 60.72, p < 0.0001. There are also significant individual differences associated with this, $\tau = .30$, $\chi^2(2) = 11,321$, $p < .0000001^3$. Thus, on average, people viewed others quite normatively and positively, but perceivers significantly varied in this tendency. Moving to the complete version of Equation 1, social

desirability (b = .09, z = 13.23, p < 0.0001) and the normative profile (b = .46, z = 59.15, p < 0.0001) independently predicted impressions. Further, there were significant individual differences associated with both predictors, social desirability $\tau = .20$, $\chi^2(3) = 3718$, p < .00001 and normative profile $\tau = .20$, $\chi^2(3) = 646$, p < .00001. The individual differences associated with social desirability and the normative profile are strongly correlated, r = .80, $\chi^2(2) = 4,718$, p < .00001. Therefore, perceivers significantly varied in the tendency to view others as socially desirable or normatively and these individual differences were strongly related to each other. In sum, despite the strong correlation between the normative profile and social desirability, the two independently predict the impressions people form of others.

2.1.3 Discussion

Social desirability and the normative profile are highly correlated, but there is enough variance left over from this relationship for there to be important differences between the two. For example, items that are equivalent on one scale are not necessarily equivalent on the other scale. Importantly, despite the strong correlation between social desirability and the normative profile, the two independently predict impressions. Thus, social desirability and the normative profile are conceptually distinct constructs and the conflation of the two in previous research has resulted in a loss of information. Further, it is important to investigate how this difference impacts impression formation.

2.2 Study 2

Study 2 builds upon Study 1 in a number of ways. First, we include impressions formed in face-to-face interactions, which makes impression formation more realistic than when using video clips. Second, we are able to measure perceiver's explicit knowledge of the average person and further model this relationship with specific impressions formed of

others. Finally, we include measures of perceiver evaluation and adjustment so that we may further investigate how perceiver individual differences impact normative accuracy.

Participants first completed a sorting task rating the personality of the average individual. As in Study 1, participants completed personality self-assessments before providing specific impressions of others. Paralleling Study 1, in Samples 1 and 2 participants watched short clips of 10 different individuals and provided their impression of the individual's personality after each clip. Participants in Sample 3 engaged in a round-robin, interacting with every other participant in the group for 3 minutes. After each interaction, participants provided their impressions of the other participant's personality. This process was completed until all participants had met and provided impressions of every other participant.

2.2.1 Methods Participants.

Sample 1. A total of 77 undergraduates at the University of British Columbia watched the video clips in groups of 8 to 17. The groups included 56 females and 19 males (2 participants did not indicate gender), with a mean age of 20.39 years (SD = 4.62) who participated in exchange for 2 extra course credits.

Sample 2. A total of 88 undergraduates at the University of British Columbia watched the video clips in groups of 9 to 20. The groups were comprised of 69 females and 18 males (1 participant did not indicate gender), with a mean age of 21.28 years (SD = 5.53) who participated in exchange for \$20 or 2 extra course credits.

Sample 3. A total of 62 undergraduates at the University of British Columbia engaged in a round-robin in a total of 10 groups ranging in size from 5 to 9 (Median = 6).
The groups contained 48 females and 14 males, with a mean age of 19.77 years (SD = 1.85) who participated in exchange for \$20 or 2 extra course credits.

Measures and Procedures.

Personality Measures. Participants completed ratings of the average person, selfratings and other-ratings using an abbreviated 21-item version of the BFI used in Study 1 (John & Srivastava, 1999)⁴. Additionally, three more items were included to assess intelligence, "*Is intelligent*", "*Is bright*", and "*Receives good grades*." All 24 items were rated on a 7-point scale ranging from 1 (*disagree strongly*) to 4 (*neither agree nor disagree*) to 7 (*agree strongly*).

Evaluation Measures. In addition to the 24 items, when rating the personality of specific others, participants in Samples 2 and 3 completed an extra 6 personality items to assess evaluation in another manner. These 6 items are shown to assess evaluation more than they describe personality (Saucier, 1994) and used the same 7-point scale as the BFI items. The new items included 3 positive statements: "*Is mature*," "*Is reasonable*," and "*Is self-controlled*" and 3 negative statements: "*Is hypocritical*," "*Is inconsiderate*," and "*Is short-sighted*." We created a composite among the highest intercorrelated evaluative items: "*Is mature*," "*Is reasonable*," "*Is reasonable*," "*Is hypocritical*," and "*Is short-sighted*". Averaging across targets, perceivers with higher scores on evaluation viewed others more positively.

Sorting Task. Participants were presented with a sheet of paper that had 24 boxes arranged in a modified Q-sort (Stephenson, 1952) along the same 7-point scale previously mentioned (see Appendix A). In addition, participants were given cards with each of the 24 BFI items (John & Srivastava, 1999) written on the front and a corresponding item number written on the back. Participants were asked to complete the statement "*I see the average*

person as someone who..." by sorting the cards into the diagram on the piece of paper. Once participants had sorted the cards according to their beliefs of the average person, they filled in the boxes on the sheet of paper with the number associated with each item. Specifically, the boxes on the paper were arranged in a manner to approximate a normal curve, forcing participants to differentiate between items. Cards were sorted in such a manner that *two* items could be placed in the endpoints, "*disagree strongly*" and "*agree strongly*," respectively; *three* items could be placed in the "*disagree*" and "*agree*" categories, respectively; *six* items could be place in the "*neither agree nor disagree*" category.

Adjustment Measures. Participants completed a number of measures of adjustment, aimed to capture both personal and interpersonal adjustment. Rosenberg's (1965) Self-Esteem scale (M = 5.20, SD = 1.06, $\alpha = .91$), the Satisfaction with Life Scale (M = 4.55, SD = 1.26, $\alpha = .86$; Diener, Emmons, Larsen, & Griffin, 1985) and the Positive Relations with Others subscale of the Psychological Well-Being scale (M = 5.25, SD = .89, $\alpha = .88$; Ryff, 1989) were all measured on the same 7-point rating scale as above, where higher scores indicate greater adjustment. Participants in Sample 3 also completed the Center for Epidemiologic Studies Depression Scale (M = 35.09, SD = 8.72, $\alpha = .85$; Radloff, 1977) on a scale ranging from 1 (*none*) to 4 (*all of the time*), with scores summed such that higher scores indicate higher levels of depression.

Target Videos. Participants in Samples 1 and 2 watched a series of 10 videos of target individuals and subsequently rated the personality of each target using the personality items previously described. The clips were collected in a previous study and included 5 female and 5 male University of British Columbia undergraduates. In the clips, targets first

read newspaper headlines and then discussed personal topics, such as a major decision or conflict with which they have dealt. While the videos presented to the two samples were very similar, only six targets were included in both samples (i.e., across the two samples there were 14 different targets).

Sample 1. In Sample 1, the videos ranged from 2 minutes 25 seconds to 3 minutes 56 seconds, median length = 3 minutes 1 second, SD = 31 seconds.

Sample 2. In Sample 2, these data were part of a larger study concerned with other questions that we are not focused on here. In line with the those questions, there were two video conditions: the *short clip* condition where videos were approximately 20 seconds (range: 17 to 27 seconds, median length = 21 seconds, SD = 3 seconds) and the *long clip* condition where videos were approximately 2 minutes (range: 1 minute 21 seconds to 2 minutes 8 seconds, median length = 2 minutes, SD = 17 seconds). Thus, each target had a long version and short version. Participants watched *either* the long or short version of each target video clip and these versions were counterbalanced across participants.

Data Analytic Procedure. The current study builds upon the procedure noted in Study 1 by including new variables in the equation as well as adding moderators. This allows us to examine the accuracy of an individual's understanding of the average individual's personality and the impact this has on the specific impressions perceiver's form of others. Further, we are able to investigate how social desirability and normative information operate differently in impressions.

Similar to Study 1, we begin with a two-predictor regression equation, but using different variables and including a path for statistical mediation:

$$Y_{ijk} = \beta_{0ij} + \beta_{1ij}Mean_k + \beta_{2ij}Sort_{ik} + \varepsilon_{ik},$$
⁽²⁾

$$Mean_k = \beta_{mi}Sort_{ik} + \varepsilon_{ik} + constant$$
(3)

as in Equation 1, Y_{ijk} again is perceiver i's rating of target j on item k, Mean_k is the mean selfreport on item k and Sort_{ik} is perceiver i's rating of the average person on item k (see Figure 2 and Table 2). For the perceiver *i*-target *j* dyad, the estimated regression coefficient β_{0ij} is the intercept (predicted rating when $Mean_k = 0$, $Sort_{ik} = 0$). The unstandardized coefficient β_{1ij} is the estimated level of *normative accuracy* for perceiver *i* with target *j*-the correspondence between the perceiver's ratings and the average person's self-reported personality profile after partialling perceiver i's rating of the average person's score on item k. β_{2ii} represents *idiosyncratic declarative knowledge* and is the extent to which perceiver *i* views target *j*, as similar to their perception of the average person, holding Mean_k constant. That is, β_{2ii} indexes the level of agreement between the sorted profile and the ratings for the perceiver *i*target *j* dyad across the 24 assessed personality items holding constant and controlling for the average person's self-reported personality profile. Further, β_{mi} is the level of sorting task accuracy and represents the extent to which perceiver i's impressions of the average person correspond to the average person's self-reported personality profile. Thus, β_{mi} indexes the similarity between the normative profile and the perceiver's sorted profile of the average person. Note that the intercept for Equation 3 is a constant and is the same for all perceivers. Further, the constant is equal to 0 when *Mean_k* and *Sort_{ik}* are centered.

Next, we move to a three-predictor regression equation to investigate the effects of adjustment and positivity, respectively, on the use and accuracy of explicit knowledge about the personality of the average person.

$$Y_{ijk} = \beta_{0ij} + \beta_{1ij}Mean_k + \beta_{2ij}Sort_{ik} + \beta_{3ij}Desire_k + \varepsilon_{ik}, \tag{4}$$

$$Mean_k = \beta_{mi}Sort_{ik} + \varepsilon_{ik} + constant, \tag{5}$$

 Y_{ijk} remains as perceiver i's rating of target j on item k, Mean_k is the mean self-report on item k, Sort_{ik} is perceiver i's rating of the average person on item k and Desire_k is item k's level of social desirability (see Figure 3). For the perceiver *i*-target *j* dyad, the estimated regression coefficient β_{0ij} is the intercept (predicted rating when $Mean_k = 0$, $Sort_{ik} = 0$ and $Desire_k = 0$). The unstandardized coefficient β_{1ij} is the estimated level of *normative accuracy* for perceiver *i* with target *j*, which is the correspondence between the perceiver's ratings and the average person's self-reported personality profile after partialling perceiver *i*'s rating of the average person's score on item k and item k's level of social desirability. β_{2ii} represents *idiosyncratic* declarative knowledge and is the extent to which perceiver i views target j as similar to their perception of the average person, holding *Mean_k* and *Desire_k* constant. That is, β_{2ii} indexes the level of agreement between the sorted profile and the ratings for the perceiver *i*-target *j* dyad across the 24 assessed personality items holding constant and controlling for the average person's self-reported personality profile and the social desirability of each item. Further, β_{mi} is the level of *sorting task accuracy* and represents the extent to which perceiver i's impressions of the average person correspond to the average person's self-reported personality profile. Thus, β_{mi} indexes the similarity between the normative profile and the perceiver's sorted profile of the average person.

Further we can examine moderators using the same normative accuracy decomposition as in Study 1: $\beta_{1ij} = \beta_{10} + \beta_{11}Adj_i + u_{1i} + u_{1j} + u_{1(ij)}$ where Adj_i is perceiver *i*'s level of adjustment. In the following analyses, we include perceiver adjustment and level of evaluation as a moderator of normative accuracy (partialled), sorting task accuracy, idiosyncratic declarative knowledge and the social desirability of ratings to explore the paths through which individuals achieve greater normative accuracy.

2.2.2 Results

On average, individuals demonstrate significant levels of sorting task accuracy and have an accurate understanding of the average individual's personality, b = .12, z = 14.15, p < .00001. Further, there were significant individual differences associated with this, $\tau = .10$, $\chi^2(1) = 105$, p < .00001. Therefore, perceivers, on average, do have explicit knowledge regarding what the average person is like, but this knowledge significantly varies across perceivers. This relationship is also captured by the significant average sorting task accuracy correlation, $\bar{r}(22) = .29$ (see Figure 4). Further, few individuals actually had inaccurate explicit normative knowledge.

Next, on average, perceivers also demonstrate significant levels of normative accuracy (partialled), b = .87, z = 15.02, p < .00001. Further, there are significant individual differences associated with this, $\tau = .25$, $\chi^2(1) = 5475$, p < .00001. Finally, on average, perceiver's also demonstrate significant levels of idiosyncratic declarative knowledge when forming impressions of specific others, b = .04, z = 3.93, p < .0001 and there are also significant individual differences associated with this, $\tau = .10$, $\chi^2(1) = 2023$, p < .00001. Thus, even if perceivers did not have a completely accurate understanding of the average individual's personality, how they view the average person influenced the specific impressions they formed of others, but this tendency varies across perceivers.

Further, using Equation 1 and only Sample 3, we are able to investigate target effects in the tendency to be seen by perceivers normatively and socially desirably. There were not significant individual differences in the tendency for targets, on average, to be viewed more or less normatively when controlling for social desirability, $\tau = .07$, $\chi^2(3, n = 57) = 1$, p =.80. On the other hand, there were significant individual differences in the tendency for targets on average to be viewed more or less socially desirably when controlling for the normative profile, $\tau = .19$, $\chi^2(3, n = 57) = 23808$, p < .0000001. Thus, there is reliable target variance in the tendency to be viewed positively, but not in the tendency to be viewed normatively.

Normative Accuracy and Evaluation. Previous studies (e.g. Human & Biesanz, 2011) have found perceivers who tend to view others positively, also tend to view others more normatively, but what is the process behind this? Using only Samples 2 and 3, perceivers who tend to view others more positively have a more accurate understanding of the average individual's personality, interaction b = .35, z = 3.15, p < .01. In a slightly different metric, Figure 5 demonstrates that although the relationship between sorting task accuracy and evaluation is significant, the relationship is not strong, as evidenced by the relatively flat line and the wide variability of the points.

Generally viewing others positively is not significantly related to higher levels of normative accuracy, when controlling for the sorting task and item social desirability, interaction b = .01, z = .24, p = .81. Nor is it significantly associated with higher levels of idiosyncratic declarative knowledge, interaction b = .02, z = 1.16, p = .31. However, as expected, generally viewing others positively is significantly associated with viewing others more socially desirably, even when controlling for the normative profile and the sorting task, interaction b = .23, z = 6.87, p < .000001. In sum, perceivers who tend to view others more positively generally view others as having more socially desirable traits. Further, they indirectly view others more normatively because they generally have a more accurate understanding of the average individual's personality likely due to the positivity associated with the normative profile.

Normative Accuracy and Adjustment. Previous studies (e.g. Human & Biesanz, 2011) have also shown that well-adjusted individuals tend to form impressions that are more normatively accurate. Do well-adjusted individuals have greater explicit knowledge of the average personality? In this study, adjustment was defined using a composite of the adjustment measures previously described. Adjustment is marginally, non-linearly related to greater explicit knowledge of the average person's personality, interaction b = .11, z = 1.95, p = .05, such that perceivers below the mean of adjustment have no relationship with sorting task accuracy, but perceivers above the mean of adjustment have a strong, positive relationship with sorting task accuracy (see Figure 6). Specifically, at one half a standard deviation above the mean level of adjustment, perceivers who are more well-adjusted are associated with greater explicit knowledge of the average individual's personality, interaction b = .21, z = 2.33, p < .05. Thus, more well-adjusted individuals tend to have more accurate understanding of the average individual's personality.

Further, adjustment is significantly related to idiosyncratic declarative knowledge, interaction b = .016, z = 1.96, p < .05. That is, well-adjusted individuals tend to view others more similarly to their understanding of the average individual. However, adjustment is not significantly related to normative accuracy, when controlling for the sorting task and the social desirability of the items, interaction b = .00047, z = 0.00, p = 1.00. Finally, adjustment is not significantly associated with viewing others more socially desirably, when controlling for the normative profile and the sorting task, interaction b = .026, z = 1.42, p = .16. In sum, well-adjusted individuals on average have a more accurate understanding of the average individual's personality and also tend to view others more inline with their perceptions of the average individual, but well-adjusted individuals do not simply view others more socially desirably.

2.2.3 Discussion

By investigating the relationship between the sorting task and the average selfreported personality profile, we demonstrate that individuals, on average, have explicit knowledge about the personality of the average person. Individuals also demonstrate normative accuracy when controlling for the sorting task. Further, how an individual views the average person impacts the specific impressions they form of others on average. For example, if an individual thinks the average person is more likely to be careless than sociable, this tendency will be reflected in the impressions they form of specific others on average, and they will generally see others as higher on carelessness than sociability.

Individuals who tend to evaluate others positively, generally have higher levels of explicit knowledge about the average individual's personality. Further, they tend to ascribe more socially desirable traits to others, indicating that individuals who tend to positively evaluate others achieve greater normative accuracy by demonstrating a positivity bias.

Well-adjusted individuals also generally have higher levels of explicit knowledge about the average individual's personality. Further, well-adjusted individuals tend to use their understanding of the average individual's personality more than less adjusted individuals when forming specific impressions of others. Thus, they generally tend to see others as more similar to the average person and consequently, see others as more similar to each other. Importantly, well-adjusted individuals do not view others in a socially desirable manner, indicating they are not demonstrating a simple positivity bias. Therefore, welladjusted individuals achieve greater normative accuracy by using normative knowledge and do not simply rate others more socially desirably.

By investigating these two instances, evaluation and adjustment, in which we generally find higher levels of normative accuracy, we find that social desirability and normative information operate differently when forming impressions. Individuals who tend to evaluate others positively achieve greater normative accuracy by viewing others in a socially desirable manner, while well-adjusted individuals use normative information. Thus, there are important differences between individuals who simply see others in a positive manner and individuals who have accurate knowledge about the average individual's personality.

Chapter 3: General Discussion and Conclusion

Through these two studies we have responded to the four broad goals of this manuscript. First, in Study 1 we showed that despite a strong correlation, evaluation and normative information do indeed independently predict first impressions. Next in Study 2 we demonstrated that individuals in fact do have explicit knowledge about the average individual's personality and further, individuals use this knowledge when forming specific impressions of others. Third, we find that there is reliable evaluative variance associated with targets. Finally, perceivers who are well-adjusted do not simply rate others more socially desirably, but instead use normative knowledge when forming first impressions, unlike perceivers who tend to evaluate others more positively and form socially desirable impressions of others.

Across two studies it is clear that, despite being strongly correlated in the BFI items, evaluation is indeed conceptually and empirically distinct from normative information in that each construct independently predicts impressions of others. The target effects we found, in which there are no individual differences in the tendency for targets to be seen normatively, but significant individual differences in the tendency for targets to be seen in an evaluative manner, demonstrate further discriminate validity between the two scales. Thus, if our measures of social desirability and the normative profile were simply imperfect measures of the same underlying construct, they would operate similarly, but we find instead, numerous instances in which they do not. In fact, the constructs separate and behave in a predictable, logical manner. Common definitions of bias as a mean level shift (e.g. Fletcher & Kerr, 2010; West & Kenny, 2011) conflate evaluation and differential use of normative information. The present results demonstrate that it is not possible to cleanly infer bias from a mean level shift on a trait. Only by examining accuracy across many traits (e.g. Biesanz, 2010) is it possible to separate a positivity bias from normative knowledge and consequently, it is possible to differentiate positively biased Pauls from normatively knowledgeable Nicks.

As suggested by previous research (e.g. Rogers & Wood, 2010), people have explicit accurate knowledge about the personality of the average individual. In general people enter new social interactions with some degree of expectation regarding the personality of the individual with whom they are meeting and are not encountering a blank slate. Not only do people have knowledge about the average individual, a person's understanding of the average individual's personality impacts the specific impressions they form of others. Thus, as expected (Biesanz et al., 2007; Biesanz & Human, 2010) individuals *are* using their understanding of how people tend to be in general to fill in gaps in their understanding of the other individual's personality when forming a first impression.

Finally, we investigated two instances in which individuals tend to have higher levels of normative accuracy: individuals who tend to evaluate others positively and well-adjusted individuals (Human & Biesanz, 2011). By decomposing the mechanisms behind normative accuracy, we were able to separate individuals who are simply positively biased from well-adjusted individuals who achieve greater normative accuracy by having a more accurate understanding of the average person.

3.1 Consequences of Normative Knowledge and Normative Accuracy

As noted previously, normative accuracy will lead to more accurate impressions on average across all the individuals a person meets. Further, having an accurate understanding of what people are generally like will allow individuals to have more accurate expectations for how others will behave in an interaction and facilitate a more effective and smooth interaction (e.g., Kilpatrick et al., 2002). The social desirability of the normative profile (Borkenau & Zaltauskas, 2009; Edwards, 1957; Wood et al., 2007) indicates that normative accuracy is still a more positive view of others and since positive perceptions of the world are considered to foster greater well-being (Taylor & Brown, 1988), viewing others as more normative could enhance an individual's well-being. Future research is needed to investigate the interpersonal consequences of having accurate normative knowledge, its developmental sequence, and the causal ordering of adjustment and accurate normative knowledge. Further, research should address any differences between individuals who appear to have higher levels of normative accuracy due to an overly positive perception of others compared to those who have accurate knowledge about the average individuals personality.

3.2 Halo Effect

Research focused on controlling or remove the halo bias has done so without fully understanding what the halo is. That is, it has generally been assumed to be error, occurring because the perceiver either will not or cannot distinguish between a target's various characteristics. These techniques have lead to a loss of information on both the target and the perceiver side, as they have ignored the possibility of legitimate individual differences on the target side and the use of normative knowledge on the perceiver side. This difficulty is unsurprising, given that common methods for the assessment of accuracy do not allow for the separation between target effects and perceiver effects.

Our target effects are also consistent with research which has suggested that on the target side, what seems to be positive bias or evaluation, is in fact a stable tendency and functions as a personality trait (Saucier, 1994). This adds to previous research that has also found individual differences in the tendency to be viewed normatively or positively, for instance physically attractive individuals are seen as more similar to the average person than individuals who are not physically attractive (Lorenzo et al., 2010). Thus, removing the halo from data is also removing reliable target variance.

Further, as the present research demonstrates, the "halo error" found on the perceiver side is not only evaluation and bias. That is, part of what has been considered bias previously, is in fact normative knowledge. This is not to say that evaluation does not contribute to the halo, but it is not simply bias. Thus, previous research has ignored and removed valuable information by attempting to control for halo effects before completely understanding the cause – it has tossed aside reliable target variance, differential use in normative knowledge, as well as, finally, bias.

In sum, future research needs to be clear about the manner in which they are measuring the accuracy of first impressions, as this has a direct impact on how bias is defined. As we have seen, defining bias as a mean level shift and then attempting to remove or control the halo effect results in a loss of meaningful information. It is impossible to separate perceiver, target and dyadic effects if a number of different perceivers are not meeting a variety of targets and rating them on a wide range of personality traits. This information could be especially important in applied settings, such as hiring or promotion

decisions. Future research examining bias must move beyond research designs with single perceiver-target dyads or perceivers evaluating multiple targets on a single dimension and consider simultaneously multiple targets across multiple dimensions that vary in social desirability and normativeness to separate out these reliable effects.

3.3 Adjustment and Normative Accuracy

Why do well-adjusted individuals have greater normative knowledge? One possible explanation is that well-adjusted individuals use their own personality information when filling in the gaps in first impressions. This possibility is consistent with previous research which has found that well-adjusted individuals have a more normative personality and they also demonstrate higher levels of assumed similarity (Human & Biesanz, 2011). However, our data does not support this theory, thus it does not seem that well-adjusted individuals achieve a greater understanding of the average person by using their own self-knowledge⁵.

On the other hand, well-adjusted individuals may have been socialized in a particular manner that has worked to enhance their understanding of the average person. Well-adjusted individuals should be relatively comfortable in social interactions, which would free cognitive resources to be used in forming first impressions. Further, higher levels of interpersonal adjustment are associated with behaviors that indicate they are paying more attention in social interactions and have a greater motivation to understand others (Letzring, 2008). Over time, if well-adjusted individuals do in fact attend more to others and are generally more motivated to understand others, this should create a better understanding of what people are generally like and thus, create higher levels of normative knowledge. Adequately detecting this effect, if true, may require larger sample sizes than those present in Study 2 – particularly if these effects are nonlinear as evident in Figure 2.7.

3.4 Accuracy Awareness and Normative Accuracy

Research has shown that individuals generally know the accuracy of their impressions of others (Biesanz et al., 2011), but does this translate into confidence regarding the accuracy of their explicit knowledge about people in general? If so, this confidence could lead to greater use of normative knowledge in forming first impressions. Further, well-adjusted individuals could be more confident in their knowledge, which could explain why they tend to view others more similarly to their idiosyncratic understanding of the average individual's personality.

3.5 Conclusion

First impressions do have an evaluative component, but bias does not account for all of the variance in impressions, differential use of normative information is also an important component. Further, individuals have explicit knowledge of this normative information and an individual's understanding of the average individual's personality is reflected in their impressions of specific others. There is also reliable evaluative variance associated with targets. Finally, well-adjusted perceivers achieve normative accuracy by having a greater understanding of the average individual's personality, while perceivers who generally evaluate others positively simply rate individuals in a socially desirable manner. Thus, this manuscript addresses, for the first time, the process behind what has generally been considered bias when forming impressions of others. We demonstrated that previous researchers who have dismissed individual differences in ratings as bias have dismissed reliable, useful information about perceivers.

Though it is difficult to separate a positivity bias from normative knowledge in first impressions, it is possible to do so using appropriate methods such as the social accuracy

model (e.g. Biesanz, 2010). Further, simply controlling for a positivity bias is ignoring important individual differences on both the perceiver and target side of impressions. Thus, it is important to understand whether the so-called bias is a perceiver, target or dyadic effect. Without this understanding, researchers cannot fully comprehend the ways in which their data has been altered.

	Paul	Nick	Reality
Joseph	3	3	2
John	5	5	4
Jamie	5	5	4
Jack	7	7	5
Mean	5	5	3.75

Table 1: Target Agreeableness in Reality and as Judged by Perceivers

Equations 2 & 3 Term Definition Pathway Degree of similarity between the normative profile and the perceiver's β_{mi} Sorting Task Accuracy a_i sorted profile of the average person. Idiosyncratic Extent to which the perceiver views the targets, on average, as being b_{ij} β_{2ij} Declarative Knowledge similar to their idiosyncratic perception of the average person. Normative Accuracy Extent to which the perceiver views the targets, on average, as being β_{1ij} C_{ij} similar to the normative profile, after adjusting for the perceiver's (partialled) sorted profile of the average person. **Declarative** Normative Extent to which the perceiver accurately views targets, on average, as $a_i * c_{ij}$ Knowledge being similar to their perception of the average person.

Table 2: Normative Accuracy Pathway Definitions for Figure 2



Figure 1. Correlation between normative profile and social desirability using 44-item version of the Big Five Inventory.



Figure 2. Decomposition of normative accuracy.

Note: Pathways: $a_i = \beta_{mi}$ = sorting task accuracy; $b_{ij} = \beta_{2ij}$ = idiosyncratic declarative knowledge; $c_{ij} = \beta_{1ij}$ = normative accuracy (partialled); $a_i * c_{ij}$ = declarative normative knowledge.



Figure 3. Normative accuracy decomposition extended to include social desirability.



Figure 4. Density plot indexing the average sorting task accuracy. Note: $\bar{r} = .29$. The significant individual differences in explicit normative knowledge can be seen in the width of the curve. Also, perceivers to the left of the line at 0.0 had inaccurate knowledge.



Figure 5. Relationship between each perceiver's sorting task accuracy correlation and perceiver evaluation of others.



Figure 6. Correlation between sorting task accuracy and perceiver self-esteem. Note: Self-Esteem is just one of scales used to measure perceiver adjustment.

Endnotes

¹An important methodological argument is given by Ashton, Lee, Goldberg, and de Vries (2009) stating that the correlations between personality factors which have led to the investigation of higher order factors can be explained as well or better by item-cross loadings.

²Participants were asked to rate the socially desirability or positivity of each trait.

³We used the likelihood ratio test (LR) recommended by (West, Ryu, Kwok, & Cham, 2011) which allows us to compare nested models based on a measure of deviance.

⁴The 21 items correspond to Items 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 21, 26, 31, 34, 36, and 38 of the original 44-item Big Five Inventory presented in John and Srivastava (1999).

⁵Covarying perceiver's self-reported profiles in Study 1 did not significantly alter the independent predictive power of social desirability or the normative profile on ratings.

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Appendix A The modified Q-sort presented to participants in Study 2 to sort the 24 BFI items in line with their perception of the average individual's personality

[NCST] Please arrange your cards using the following pictorial representation to demonstrate the extent to which you agree or disagree with each statement on the cards. Once you have arranged it, please fill in the numbers on the back of each card into the blank boxes below.

I see the average person as someone who...

