Photocopy and Use Authorization

In presenting this dissertation in partial fulfillment of the requirements for an advanced degree at Idaho State University, I agree that the Library shall make it freely available for inspection. I further state that permission for extensive copying of my dissertation for scholarly purposes may be granted by the Dean of the Graduate School, Dean of my academic division, or by the University Librarian. It is understood that any copying or publication of this dissertation for financial gain shall not be allowed without my written permission.

Signature _____

Date _____

Mindfulness and Judgability of Personality Traits and Personal Values

by

Jennifer S. McDonald

A dissertation

submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy in the Department of Psychology

Idaho State University

Spring 2018

Idaho State
UNIVERSITY
Office for Research - Research Outreach & Compliance
921 S. 8th Avenue, Stop 8046 • Pocatello, Idaho 83209-8046

Feb 2, 2018

Jennifer McDonald-Combe
Psychology
MS 8112

RE: Study number IRB-FY2016-204: Mindfulness and Judgability of Personal Values and Personality Traits

Dear Ms. McDonald-Combe:

You are granted permission to continue your study as described effective immediately. The study is next subject to continuing review on or before Feb 1, 2019, unless closed before that date.

As with the initial approval, changes to the study must be promptly reported and approved. Contact Tom Bailey (208-282-2179, humsubj@isu.edu) if you have any questions or require further information.

Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

Phone: (208) 282-1336 • Fax: (208) 282-4723 • isu.edu/research

To the Graduate Faculty:

The members of the committee appointed to examine the dissertation of Jennifer S. McDonald find it satisfactory and recommend that it be accepted.

_____

Tera D. Letzring, Major Advisor

_____

Xiaomeng (Mona) Xu, Committee Member

_____

Erin B. Rasmussen, Committee Member

_____

Tony Seikel, Committee Member

_____

Roger Schmidt, Graduate Faculty Representative

Dedication

I dedicate this dissertation to Nick and Elaine Scharf. Your support and encouragement live on for generations.

"You'll get yours."

"Nothing stays the same."

Acknowledgments

Thank you to Shana Humphreys for interviewing a large portion of the targets in the stimulus videos and for being available for helpful conversations. To Rachel Turner for editing several of the stimulus videos as well as helping to collect data. To other undergraduate research assistants that helped in data collection: Nate Slagowski, Tyler O'Connell, Rachel Packer, Laurren Bennett, Jennifer Hambleton, Cara Campos, Taeg Barclay, Alex Castro, and Jade Hott. To graduate student colleagues in my lab that helped with data collection and provided suggestions for this research over several lab meetings: Dr. Jared Vineyard, Barbara Wood-Roberts, Dr. Douglas Colman, Sheherezade Kryzyzaniak, Jessica Stoker, Chloe Pedersen, and Jacob Gibson.

To my advisor Dr. Tera Letzring for her invaluable assistance on this project and for the many lessons she taught to me, I thank you. To the other psychology committee members, Dr. Mona Xu and Dr. Erin Rasmussen for their feedback and encouragement. To Dr. Jane Coe Smith for serving as my first GFR and Dr. Roger Schmidt for stepping in as my second GFR. To Dr. Tony Seikel for serving on my committee and providing invaluable instruction regarding mindfulness with his wife Dr. Paula Seikel. To Dr. Jennifer Miesch for recording the mindfulness audio instructions conditions and for leading the Friday mindfulness group.

To The Musketeers for their empathy and encouragement over many lunches. To my family - Tom, Nicki, Nora, Ben, Catherine, Anna, and Clara Young for their never-ending support and understanding – especially of many missed birthdays and holidays. Most of all to my husband Marc McDonald who has been there through it all and taken care of me on a daily basis. Without the contributions of each of you, I could not have accomplished this endeavor.

TABLE OF CONTENTS

List of Tables

Mindfulness and Judgability of Personality Traits and Personal Values

Dissertation Abstract-Idaho State University (2018)

Abstract

The tendency to be accurately perceived by others (judgability) is associated with positive outcomes such as psychological well-being. Individuals high in trait mindfulness and those practicing mindfulness share positive outcomes with highly judgable people (good targets) such as psychological and social well-being. Although these two types of individuals share similar characteristics, it is unclear whether trait mindfulness or practicing mindfulness are associated with being a good target. Judgability may be a malleable trait and it is unknown if practicing mindfulness can increase this tendency. The following study sought to explore these questions. Target trait mindfulness was expected to predict greater judgmental accuracy of the targets' traits and values. Accuracy of personality judgment of the targets' traits and values was also expected to be higher for viewing targets after a brief mindfulness induction than targets after an unfocused attention control. State mindfulness and psychological well-being of the targets were examined as moderating the relation between mindfulness and judgability. Two-hundred-fourteen targets reported their traits, values, and trait mindfulness, and responded to two sets of interview questions about life experiences while being video-recorded. In between the interviews, targets were assigned to listen to 15-minutes of mindfulness instructions or unfocused attention instructions. For Study 1, the first set of 209 videos were viewed and rated online by 539 judges on targets' traits and values to determine judgmental accuracy. Target trait mindfulness positively predicted distinctive accuracy of traits, but did not predict accuracy of values.

Psychological well-being moderated the relationship between trait mindfulness and judg mental accuracy. Well-being and accuracy had a positive relationship for low trait mindfulness, but a negative relationship for high trait mindfulness. For Study 2, the second set of 205 videos were viewed and rated by 357 judges on the same measures. Although the mindfulness condition was successful at increasing state mindfulness, it did not significantly predict accuracy of traits or values. The induced state mindfulness resulting from the mindfulness instructions did not moderate the relationship. Findings reveal target trait mindfulness is associated with greater accuracy of traits, but state mindfulness is not related to accuracy of traits or values.

Key Words: judgment accuracy, trait mindfulness, personality, values

Chapter I

Introduction

"A man cannot be comfortable without his own approval." - Mark Twain

Of all of the people that judge us, we might be our own harshest critics. The quote above suggests that we may be esteemed by others around us, but if we are not esteemed by ourselves, we will most likely not be comfortable in our own skin. We may not feel that who we want to be is in agreement with who we really are. Due to this incongruence, we may have a poor quality of life as indicated by depression, anxiety, poor interpersonal relationships, and low overall well-being (Donohue, Robins, Roberts, & John, 1993; McReynolds, Altrocchi, & House, 2000). An issue often examined by social psychologists who study the self, is why some people accept themselves and others do not (Carson & Langer, 2006; Flett, Besser, Davis, & Hewitt, 2003). Some people may not know themselves very well and may also be unaccepting of what they find in themselves, while others are self-aware and accepting of who they really are.

The characteristics of being self-aware and self-accepting, as often indicated by increased psychological well-being, have been associated with being accurately judged by others (Colvin, 1993b; Human, 2009). Not only are highly judgable individuals more aware of themselves and know what they are really like, other people can better assess who they really are as well, indicating a degree of high *judgability*. There are many positive benefits associated with being judgable or being a *good target*, including high extraversion, low neuroticism, and overall psychological well-being (Human & Biesanz, 2013). Many of the positive characteristics of good targets are also found in individuals high in trait mindfulness (those who are aware and attentive to the present moment

without judgment in their everyday lives) and who practice mindfulness meditation (intentionally practicing to be attentive and aware in the present moment without judgment) (Baer et al., 2008; Brown & Ryan, 2003).

Since the early 1990's, mindfulness meditation has been a topic in psychological research, with its popularity increasing exponentially from the year 2000 to the present (Black, 2014). The benefits associated with mindfulness are wide and varied in both physical and psychological health. One benefit in particular that is repeatedly associated with mindfulness is positive psychological adjustment or well-being (e.g. Baer et al., 2008; Brown & Ryan, 2003; Keng et al., 2011). The psychological well-being associated with mindfulness meditation can possibly help people see who they "really" are by increasing self-awareness and by reducing threats to the self regarding undesirable characteristics (Carlson, 2013).

If mindfulness meditation can help individuals see themselves more clearly, it may also help people to be seen more clearly by others. Those high in dispositional mindfulness or those practicing mindfulness meditation may be more accurately perceived by others than those low in dispositional mindfulness or those who do not practice mindfulness meditation. If there is a relation between mindfulness practice and being perceived accurately, it may be moderated by the increased mindfulness skills and psychological well-being that are often associated with mindfulness. The pertinent questions are whether it is possible to be better understood by others if one is high in dispositional mindfulness or by increasing state mindfulness through mindfulness meditation.

To explore these questions, the current dissertation introduction will describe the Realistic Accuracy Model (RAM) of personality judgment (Funder, 1995, 2012), focusing particularly on the moderator of the good target. Research involving the good target and judgability, including characteristics of good targets, will be reviewed. Background on mindfulness will then be provided, as well as descriptions of the concept as a trait and state, followed by a review of relevant research regarding physical health and psychological health benefits of mindfulness interventions. The possible moderating factors of mindfulness skills and psychological well-being will be introduced.

Chapter II

Literature Review

Accuracy of Personality Judgment

Individuals make interpersonal judgments of others quite frequently and for many different reasons. Decisions often must be made of who to include or not include in our lives in many different contexts, such as choosing a person to be a close friend, choosing a contractor to work on one's house, or choosing a romantic partner.

Normative and distinctive accuracy. Prior to the development of the current conceptualization of accuracy of personality judgment , Cronbach (1955) provided a criticism of interpersonal perception research regarding how the accuracy of judging the average person was being calculated and interpreted. Cronbach suggested that any success that individuals had in perceiving others was in part due to the reality that many people share common characteristics with one another. Thus, he suggested that what was being accurately perceived was not the unique individual, but the average person as

expressed in many individuals (Cronbach, 1955). When examining accuracy, it is now common to measure and account for what Cronbach called *stereotype accuracy*, or the tendency of judging a person (the target) as similar to the average person, which is now referred to as normative accuracy. The normative profile, or the mean of the targets' self-ratings, is typically quite positive, therefore the person making the judgments of the target (judges) who make normative assessments of an individual also view that person positively, or view people positively in general. Because targets who are easily judged (good targets) and well-adjusted people are typically viewed as more normative and as possessing more positive traits, the normative profiles are often controlled for in order to increase confidence that the distinctive profiles (the unique aspects of the individuals that remain after removing the normative profile) of the good targets are being assessed (Biesanz & Human, 2011a). Although in the context of examining good targets and well-adjusted people, normative accuracy is controlled for, it is also an interesting phenomenon to examine in and of itself, especially in situations where little information about the target is known.

What Cronbach called *differential accuracy*, on the other hand, refers to the ability to judge the unique attributes of a target as being different from the average person. This type of accuracy also refers to the ability to distinguish among targets on the same traits, and is now known as distinctive accuracy (Biesanz & Human 2010).

Realistic Accuracy Model. There are several models to describe and explain the process of personality judgment, one being the well-known Brunswik's Lens Model (1952), which stresses that cues available in the environment must pass through a figurative lens in order to be perceived and used to make judgments of the personalities

of others. The cues are often imperfect, therefore the judgments made are also often imperfect (Brunswik, 1952). One of the most utilized models based on the Lens Model is Funder's Realistic Accuracy Model (RAM; Funder, 1995, 2012), which identifies the stages required for, and the moderators that contribute to, achieving accuracy of judging the personality of another individual. While accurate judgments can be achieved, it is not assumed that perfect judgments are possible. However, accuracy can be improved with a greater number of perspectives about the person being judged (Funder, 2012).

Previous research using methods other than RAM measured interpersonal perception in several ways. Self-other agreement is the degree to which one's ratings of what the self is like correlates with the ratings of the self by another individual (either a new or old acquaintance). Peer-peer agreement, or consensus, refers to the degree to which the ratings made by two other people of the same target correlate. Finally, peer-behavior agreement indicates the correlation between coded behavior (usually from video) of a target and a peer's rating of that target.

Stages of RAM. The four stages of RAM required to achieve accuracy of personality judgment are relevance, availability, detection, and utilization of behavioral cues. Relevance and availability refer to the cues provided by the target (the person being judged) while detection and utilization refer to the ability of the judge in noticing and processing the behavioral cues (Funder, 1995, 2012). If one was trying to accurately determine whether someone values being healthy, the cues (i.e., verbal or behavioral) made available by the individual would need to be relevant to the value of health. If a person who has this value never says or does anything that is related to valuing health in the presence of a judge, he or she will not be judged accurately in the domain of valuing

health, no matter how much that person actually values health. The cues for valuing health also need to be made available by the target. Therefore the target would need to be seen in a context and for an appropriate amount of time for the cues to be available to the judge. If the value of the target is only available during leisure time and the judge only sees him in an occupational setting, the cues for valuing health will likewise not be available. In addition, internal cues such as thoughts or feelings that are not expressed will not increase accuracy. In order for them to be available, the cues need to be external such as behaviors or expressions of thoughts and feelings. Once the cues are available to the judge, it is up to the judge to detect those cues relevant to valuing health. If the judge is distracted or is not skilled at perception, the cues will not be detected. Once the cues have been detected, the judge needs to utilize the cues correctly. If a target in a work setting mentions that he is going to the gym, that cue must be perceived as being for the value of health and not for another purpose, such as wanting to impress his colleagues, or wanting some time alone. Because the stages of RAM are multiplicative and dependent on one another, if any of the four stages are not completed successfully, accuracy of personality judgment will not be achieved (Funder, 2012).

Moderators of Accuracy. Within the RAM model, four moderators of accuracy are also described: the good judge, good target, good trait, and good information (Funder, 1995, 2012). The moderators and stages of RAM often interact, which influences the degree of accuracy that can be achieved.

The Good Judge. Some individuals are better judges of personality than others, and a good judge is one who detects cues (even subtle cues) of personality and is able to utilize those cues correctly. The ability to judge others accurately is also called

"perceptive accuracy" (Biesanz, 2008). Good judges tend to be agreeable, consistent, satisfied with life, and make more positive judgments of others (Human & Biezanz, 2013; Letzring, 2008). Because of the characteristics they possess, good judges create interpersonal environments where targets feel comfortable and free to be genuine, which facilitates increased self-disclosure that provides the judge with better and more frequent cues, thus increasing levels of accuracy (Funder, 2012; Letzring, 2008).

The good judge of personality is one of the more frequently studied moderators of realistic accuracy (e.g., Christiansen, Wolcott-Burnam, Janovics, Burns, & Quirk, 2005; Letzring, 2008, 2014), and as mentioned, many positive characteristics and benefits are associated with being a good judge. For example, the ability to accurately judge the personalities of strangers and familiar acquaintances has been predicted by the dispositional intelligence (knowledge of how personality is related to behavior) of the judge. Stereotype accuracy of judging traits of others such as extraversion and conscientiousness is related to positive affect and life satisfaction of the judge (Letzring, 2014). In addition, accurate judgments of both strangers and acquaintances are also related to high levels of the personality traits of conscientiousness and agreeableness in the judge (Christiansen et al., 2005).

In zero-acquaintance situations (when the judge and target have not previously met), accurate judgments of strangers are positively related to the social skill, agreeableness, and psychological adjustment of the judge (Letzring, 2008). Furthermore, the more good judges there are in an interaction between people, the more accurate the judgments of people observing those interaction will be, suggesting that the judges themselves can elicit more behavioral cues from the targets (Letzring, 2008).

Overall, the findings show that good judges can make accurate judgments of individuals at zero-acquaintance.

The Good Trait. A good trait is one that is typically visible, available, easy to detect, and correctly utilized (Christiansen et al., 2005; Funder, 1995, 2012; Letzring, 2008). More visible traits are usually judged more accurately. An example of a good trait is extraversion, as it meets the criteria of visibility, availability, and easy detection and utilization (Funder, 2012). Good traits are those that are associated with more relevant and available cues about whether the target possesses high or low levels of the trait. Other characteristics of good traits are non-evaluativeness (traits that are judged neither positively nor negatively) and frequency of cues regarding a specific trait (Funder 1999; Funder & Dobroth, 1987).

Personality traits are often the focus of judgmental accuracy, but other types of constructs are beginning to be studied as well. Certain personal values, such as tradition, can be accurately judged by acquaintances, however they are not as accurately judged as personality traits (Dobewall et al., 2014; McDonald & Letzring, 2016). The accuracy of perceiving personal values was also unrelated to the visibility of the values (McDonald & Letzring, 2016), which is an example of an examination of the interaction between the moderator of good traits (values) and the availability stage (visibility) of RAM.

Good Information. Good information refers to the quantity and quality of personality-relevant information or cues (Letzring, Funder, & Wells, 2006), and is another moderator that has received strong emphasis in research (Blackman & Funder, 1998; Letzring et al., 2006; Watson, Hubbard, & Wiese, 2000). The two aspects of good information; increased information quantity and better information quality, are related to

higher levels of realistic accuracy of personality judgment, consensus between two judges, and self-other agreement of the personality of a new acquaintance (stranger) (Letzring et al., 2006). Relating to the quantity of information is the acquaintanceship effect, in that the longer people have known each other, the more cues there are available to use, and the more accurate they tend to be at judging the others' personalities (Blackman & Funder, 1998; Funder, 1995, 2012).

Research using RAM focuses on targets and judges who are well-acquainted, meaning they have known each other for some length of time and are familiar with one another, or on unacquainted individuals who have never met. Accurate judgments at zero-acquaintance are possible (Blackman & Funder, 1998; Letzring, 2008), but the accuracy is lower than between acquainted individuals for most traits except for extraversion, which tends to have highly visible cues that are more available to the judge (Beer & Watson, 2008).

Some research has shown, however, that it may not only be the length of acquaintanceship that contributes to accuracy (Watson et al., 2000), but it may be the level of acquaintanceship or how well people know each other (Funder, 2012). The higher the number of contexts in which a person is viewed, the greater chance that higher quality cues will be available for a range of traits (Funder, Kolar, & Blackman, 1995), and therefore higher quality of information is theorized to lead to higher accuracy of personality judgment (Funder, 2012; Letzring et al., 2006).

Information quality also refers to the type of cues available. Discussion of thoughts and feelings was predicted by subjects to be more informative of what a person was like than discussions of behaviors (Anderson & Ross, 1984). The prediction was

then confirmed in a study that found that listening to discussions of thoughts and feelings did in fact contribute to more accurate judgments than listening to discussions of behaviors (Anderson, 1984). Furthermore, talking about thoughts and feelings and talking about behaviors contributed more to distinctive accuracy (accurately judging individual characteristics in terms of their distinctiveness from the average person) than engaging in actual behaviors (Letzring & Human, 2013).

The Good Target. An individual who is consistent in expressing relevant and available cues is considered a good target (Funder, 2012). A good target is usually high in "expressive accuracy" (Human, 2009; Human & Biesanz, 2011), meaning that the way the individual expresses himself or herself allows others to perceive the individual more accurately as compared to other people (Colvin, 1993b). Good targets are psychologically adjusted in three ways that leads to their consistency and transparency - their private and public selves are consistent, they behave consistently across different roles, and their behavior is highly predictable (Colvin, 1993a). Good targets describe themselves as being sensitive, emotionally stable, agreeable, and extraverted (Colvin, 1993a). Others describe good targets as being warm, cheerful, dependable, and likeable. In turn, good targets are accurate at judging their own personalities and they are socially skilled perhaps due to their increased levels of self-awareness (Colvin, 1993a). Because of their interpersonal skills, good targets may be better at assessing person-environment fit and are more adept at self-disclosure (Human & Biesanz, 2013). Good targets may be easier to "read" because they share more personal information with others, which may also explain why they are likeable (Human & Biesanz, 2013). Overall, some people are better targets than others and this level of judgability tends to be fairly stable.

Thus, the individual differences in being a good target and the stability of those differences means judgability has dispositional qualities (Colvin, 1993b).

Research and characteristics of the good target. The good target has not received as much attention as the other moderators in research utilizing RAM. One of the first studies of judgability examined self-other agreement, peer-peer agreement, and peer-behavior agreement (Colvin, 1993b). Individuals who were judged after a brief interaction with a stranger and also judged by familiar acquaintances were judged more accurately (either high or low) for the traits of extraversion, agreeableness, emotional stability, and overall psychological adjustment. The correlates supported the general view of judgability, which is that judgable individuals are seen as open and knowable by their close friends and as favorable by strangers viewing brief video-recorded interactions (Colvin, 1993b).

A recent review of the few studies examining the good target in both acquainted and unacquainted samples found similar correlates with judgability. Broad characteristics of a judgable person are psychological adjustment, higher social status, and socialization that allows people to be accurately and freely expressive (Human & Biesanz, 2013). Psychological adjustment refers to both the hedonic and eudemonic parts of well-being and incorporates the contextual characteristics of authenticity, personality coherence, and self-knowledge (Human & Biesanz, 2013). Although psychological adjustment promotes judgability, the mechanisms behind this relation are unknown. Less studied than psychological adjustment, social status may be related to different levels of judgability, such that those with higher social status are viewed more accurately than those with lower social status. The difference in judgability may be due

to the behavior manifested by individuals with differing social status (Human & Biesanz, 2013). Socialization refers to the idea that judgability may be a learned characteristic. The socialization to be more expressive in a positive manner, may come from gender roles, family environment, and learned social skills of an individual (Human & Biesanz, 2013).

Outcomes of being a good target are quite positive and entail better subjective well-being and improved interpersonal relationships via better person-environment fit, social support, self-disclosure, self-and-partner verification, and appropriate emotion suppression (Human & Biesanz, 2013). Overall, being judgable is a positive experience, with greater personal well-being and better social relationships with new and familiar acquaintances, as compared to being less judgable (Human & Biesanz, 2013).

Although the first conceptualization of judgability was relevant mainly to targets familiar to the judge, research has established that characteristics of the target also contribute to judgmental accuracy at zero acquaintance, or in other words, between strangers. In a round robin design using unacquainted participants, it was determined that more social, expressive, and extraverted people were judged more accurately (Ambady, Hallahan, & Rosenthal, 1995). Women with higher self-esteem were more accurately judged by strangers on extraversion than women with lower self-esteem, which may have been due to the differences in expressiveness between the two self-esteem groups.

It is established that targets can be accurately judged by both familiar acquaintances and strangers, which may be explained by the amount and kind of information or cues they make available. The psychological adjustment that is

associated with being a good target may help an individual to provide information about his or her less visible traits to both old and new acquaintances (Human & Biesanz, 2011a). In a round robin design, Human and Biesanz (2011a) examined judgability of well-adjusted individuals by both new acquaintances and familiar acquaintances. It was determined that higher distinctive self-other agreement (of unique characteristics) was largely due to increased judgability of the target, not from accurate self-knowledge of the target.

The motivation of the target is related to judgability as well. When targets were asked to "self-present" or put their best self forward during video-recorded interviews, the distinctive self-other agreement between strangers viewing the videos and the targets self-ratings was higher than with those not self-presenting. The targets who presented their best self were also better liked than those who did not self-present. The relationship between self-presentation and accuracy was mediated by the level of engagement (attention holding) of the target as coded from the videos (Human, Biesanz, Parisotto, & Dunn, 2012).

Psychological adjustment appears to be related to different types of accuracy depending on the moderator of accuracy. Judges who were psychologically adjusted tended to judge others with greater normative accuracy (or as more similar to the average person), but when the same individuals became the targets, they were judged by others with greater distinctive accuracy. Normative accuracy is typically associated with more positive views of others, therefore good targets may not only be well-adjusted but also have positive views of other people in general (Human & Biesanz, 2009).

Interventions to Increase Judgability. Although the characteristics associated with being a good target are plentiful and generally positive, there are as yet no known interventions to increase judgability. It is also unknown as to what direction the relation is between psychological well-being and judgability, in other words if psychological well-being causes judgability or the other way around. Are individuals good targets because of their well-adjusted characteristics, or are they well-adjusted because they are more accurately perceived by others, thus having better interpersonal relationships and better outcomes? Although the current research will not address this question specifically, the findings will begin to shed light on this query.

Several of the characteristics of people who are good targets are similar to those who are high in trait mindfulness and who practice mindfulness meditation . Both groups are overall psychologically well-adjusted, have good interpersonal relationships, and possess high levels of self-regulation (Baer et al., 2008, Brown & Ryan, 2003; Keng et al., 2011). In terms of personality traits, both mindfulness and judgability are associated with increased agreeableness and extraversion, and with reduced neuroticism (Baer et al., 2008, Brown & Ryan, 2003; Keng et al., 2011). The similarities of characteristics for judgability and trait mindfulness indicate that mindfulness meditation may be an intervention to increase judgability, therefore leading to better personal and interpersonal outcomes. First, a relation between judgability and mindfulness practice needs to be established.

Mindfulness

Defining mindfulness. Although operational definitions of mindfulness vary, a generally accepted operational definition of mindfulness is: “the awareness that arises by

paying attention in a particular way; on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 1994, p. 4). As the definition suggests, there are three parts to mindfulness: intention ("on purpose"), attention, and attitude ("in a particular way") (Shapiro, Carlson, Astin, & Freedman, 2005) which constitute the three-part model of mindfulness. Intention refers to the "why" of practicing mindfulness. Often overlooked in research about mindfulness, intention is crucial to the positive outcomes that often result from practicing mindfulness. Intention refers to the context of what motivates a person to initially practice mindfulness. In order for positive outcomes to occur, one must have a personal vision for practicing mindfulness, whether it be for self-regulation, self-exploration, self-congruence, or some other motivation. Research has found that intentions change with increasing mindfulness practice and they are also predictive of outcomes. The intentions move from self-regulation at the beginning of mindfulness practice to that of self-transcendence, due to the increasing levels of awareness and insight that come with greater experience in mindfulness. In addition, if one who begins to practice mindfulness has the intention to increase self-regulation, for example, the outcome of mindfulness will most likely be increased self-regulation (Shapiro et al., 2005).

Attention refers to phenomenologically attending to one's experience without evaluation or explanation in the present moment. One attends to both internal and external experiences from one moment to the next, without attachment to, and without creating a "story" about those experiences. In other words, one's thoughts and feelings in the present moment are noticed and "let go" so the next moment can be attended to.

Attitude refers to accepting the present moment as it is, without interpretation or judgment which includes acceptance of the tendency of the mind to become attached to thoughts and feelings that arise in the present moment. Attitude is different than attention, in that it is more than phenomenologically attending to the experiences in the present moment, but accepting the quality of the experiences. Thus, attitude involves self-compassion for, acceptance of, and openness to (Shapiro et al., 2005) all positive and negative experiences, thoughts, and feelings that are present (Giluk, 2009). Self-compassion refers to recognizing, feeling, and caring for one's own suffering in the context of human suffering, without attachment (Neff, 2003). The attitude of self-compassion, acceptance, and openness allows a person to see the reality of the present moment as it really is, including the reality of who he or she is (Kabat-Zinn, 1990).

The concept of mindfulness is derived from traditional Asian thought, namely Buddhism, but has been operationalized for Western research purposes (Keng et al., 2011; Shapiro et al., 2008). There are two schools of thought within the Western use of mindfulness. One is in line with the Eastern conceptualization of mindfulness, which incorporates all three aspects (intention, attention, and acceptance), while the other is based on a Western conceptualization of mindfulness that is mainly focused on the awareness and attention aspects and does not incorporate the acceptance (non-judgment) aspect (Siegling & Petrides 2014). Most research examining mindfulness utilizes the Eastern conceptualization of mindfulness, therefore it will be the one described and used in the current research.

Mindfulness and similar constructs. Similar to awareness and attention, mindfulness is considered a state of consciousness. Although awareness and attention

are both considered part of mindfulness, in the context of mindfulness they differ from theories of attention and awareness in the following ways. First, the two parts of consciousness: monitoring (observing) and control (goal-directed maintenance and change) are manifested differently by attention and mindfulness. Attention primarily involves the control aspect of consciousness with less emphasis on the monitoring aspect, while mindfulness entails the monitoring aspect without the control aspect of consciousness (Brown, Ryan, & Creswell, 2007). The pursuit of goals in attention is what differentiates it from mindfulness, which has no goal in mind except to attend to and accept the present moment. The kind of attention that is implemented in mindfulness involves a "mental gap" or separation between the attention and the object being attended to, which is referred to as *decentering* or *re-perceiving* (Shapiro et al., 2005). The difference between other types of attention and decentering is especially apparent when the object of attention is the self. The control implemented in attention entails the goal of maintaining one's identity and the sense of self. Mindfulness, on the other hand entails basic awareness of the present moment without evaluation or a goal in mind. The self is being monitored during mindfulness, but there is a distance between the attention and the sense of self (Brown et al., 2007).

Mindfulness and integrated self-awareness are conceptually quite similar. Integrated self-awareness entails an open attention and awareness for the purpose of gaining information and achieving insight of the self. The main departure from mindfulness is that self-awareness can still have an evaluative component to the awareness and a goal for being aware, particularly when used in certain kinds of Cognitive Behavioral Therapies (Brown et al., 2007). Awareness often leads to

attention, usually leading to some sort of categorization of what is being attended to (good, bad, neutral), which generally occurs automatically without one's awareness (Brown et al., 2007). Mindfulness slows the process down and sustains the sensory awareness and the attention to the phenomena without the automatic tendency to categorize one's experience in any particular way. Thoughts and feelings are meant to be experienced as events more than reality, in order to experience the moment that one is in (Brown et al., 2007).

Possible Mechanisms of Mindfulness. Many theories exist that attempt to explain the phenomenon of mindfulness. One theory suggests that in connection with the three-part model of mindfulness (intention, attention, and attitude) the re-perceiving process that occurs when one is mindful is what contributes to many of the positive outcomes associated with mindfulness (Shapiro et al., 2005). Re-perceiving (similar to decentering) is a shift in perspective to attending to items in consciousness without them being tied to one's identity. The thoughts that a person has are recognized as thoughts, separate and distinct from who he or she is. The process of re-perceiving may be responsible for self-regulation, adapting to the environment in a flexible manner, the ability to benefit from exposure type therapies, and values clarification (Shapiro et al., 2005). Values clarification refers to a process of re-connecting with what is truly meaningful in an individual's life, including values and interests. Values can be seen in the context of a person's socialization and culture from a distant psychological perspective, in that they can be observed or re-perceived as simply being a part of their cultural conditioning and perhaps not as who they "really are." Individuals gain a sense of congruence in determining what their true values are, separate from the values learned

from one's culture through a more objective perspective regarding where their values came from (Shapiro et al, 2005).

The values clarification model proposed by Shapiro et al. (2005) was tested by Carmody, Baer, Lykins, and Olendski (2009), and re-perceiving by itself did not mediate the relationships between mindfulness and self-regulation or between mindfulness and values clarification. However, when mindfulness and re-perceiving were combined, the relationship between the integrated score and psychological distress was mediated by self-regulation and values clarification in two separate mediation models (Carmody et al., 2009). The authors determined that more research is needed to support the model (Carmody et al., 2009).

The mechanisms of mindfulness may be a synergistic combination of attention regulation, body awareness, emotion regulation, and change in perspective on oneself (Hölzel, Lazar, Gard, Schuman-Olivier, Vago, & Ott, 2011). The synergy between the variables results in increased self-regulation. Components of mindfulness and mindfulness practice are associated with increased activity and physical changes in certain brain structures such as the anterior cingulate cortex (attention regulation), insula (body awareness, change in perspective on the self), temporo-parietal junction (body awareness, change in perspective on the self), fronto-limbic network, and default mode network structures (Hölzel et al., 2011). The default network is theorized to be responsible for an individual's thoughts about relationships with others and for thoughts about the self, and is found to be active when the brain is "at rest" (Lieberman, 2013). Specifically regarding the change in perspective of the self, those who meditate have more regulation over their default networks than non-meditators. The finding may mean

that meditators can better control and inhibit their self-referential tendencies at rest. Meditators may be more objective and detached from their experiences than non-meditators (Hölzel et al., (2011). There also tends to be less of a narrative approach and more of a phenomenological approach to one's experiences for meditators. Increased gray matter has been found in meditators in the posterior cingulate cortex, the temporo-parietal junction, and the hippocampus, which are all associated with experiencing the self (Hölzel et al., 2011).

Trait mindfulness. Whether examining meditators or non-meditators, mindfulness can be conceptualized as a trait, as some people have stable characteristics or dispositions associated with mindfulness (Baer et al., 2008; Brown et al., 2007; Kabat-Zinn, 1990; Thompson & Waltz, 2007). The characteristics associated with trait mindfulness are incorporated in a five facet model which includes: observing, describing, non-judging, non-reactivity, and acting in awareness (Baer et al., 2008). These facets have been measured successfully in meditators by the Five Facet Mindfulness Questionnaire (FFMQ, Baer et al., 2008). There appears to be both inter-individual and intra-individual differences in the levels of mindfulness facets, which provides more support for mindfulness as a trait (Baer et al., 2003). Different samples comprised of students, community members, highly educated individuals, and meditators exhibited significant differences from one another in reporting levels of the five facets (Baer et al., 2003).

Furthermore, meditators and non-meditators have responded differently to a measure of to the FFMQ. Meditators responded the same way to both mindful present (positively worded) and mindful absent (negatively worded) questions on the measure,

while non-meditators would respond one way to mindful present questions and respond differently to the mindful absent questions that reflected the same facets (Van Dam, Earleywine, & Danoff-Burg, 2009).

Another study using the five facet model of mindfulness found that the observing, describing, acting with awareness, nonjudging of inner experience, and non-reactivity to inner experience facets were related to positive outcomes and general mindfulness in different ways. Particularly, the observing facet is different between meditators and non-meditators, such that in meditators, observing was related to positive outcomes, but in non-meditators the facet was not related to positive outcomes. The non-judging facet found in experienced meditators in particular is necessary for positive outcomes to occur, perhaps due to reduced selective attention (Baer, et al. 2008). Additionally, meditation experience was related to four of the facets, but not related to acting in awareness. Overall the authors found that meditation experience cultivates mindfulness for most of the facets and the mindfulness factors mediate the relationship between meditation practice and psychological well-being (Van Dam et al., 2009). Thus, increasing mindfulness facets may contribute to greater psychological well-being.

Other studies examining trait mindfulness conceptualize four instead of five facets of mindfulness. Using a Dutch translation of the Kentucky Inventory of Mindfulness Skills (KIMS, Baer, Smith, & Allen, 2004), one study replicated four facets, or skills, of mindfulness (observe, describe, act with awareness, and accept without judgment) from the original model in both a student sample and a parent sample (Dekeyser, Raes, Leijssen, Leysen, & Dewulf, 2008). All facets of mindfulness were related to expressiveness in social settings. Body satisfaction (or self-esteem) was

related to all facets of mindfulness in the parent sample, and all but the observe facet in the student sample. Empathy was related to the observe facet, while increased recognition and expression of emotions, less social anxiety, and less distress contagion were related to the other three facets (Dekeyser et al., 2008). It is interesting that many of the psychological outcomes were not related to the observe facet or skill, which suggests that simply being able to observe what is occurring within and outside of a person will not lead to psychological benefits.

Mindfulness as a single characteristic. Mindfulness is also conceptualized as a single factor with the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003). Research using the MAAS suggests inter- and intra-individual differences in mindfulness as a single construct as well. Individuals experienced with practicing Zen meditation had significantly higher scores on the measure of trait mindfulness than those with no meditation history. Length of time spent in meditation practice was not related, but the number of years practicing regular meditation was related to trait mindfulness (Brown & Ryan, 2003). The results indicate that individual differences in mindfulness can be measured. Between-person variability in trait mindfulness also suggests there are individual differences in the ability and desire to be mindfully attentive and aware. A study using experience sampling showed that individuals also vary in their level of state mindfulness throughout the day and week. The variations in state mindfulness were strongly related to variations in autonomy and affect in that higher state mindfulness was associated with higher autonomy, higher pleasant affect, and lower unpleasant affect (Brown & Ryan, 2003).

Brown and Ryan (2003) further examined the relationship between trait mindfulness, as measured by the MAAS (trait version), and many psychological outcomes that encompassed positive and negative well-being. Trait mindfulness was strongly positively correlated with self-esteem, optimism, positive affect, life satisfaction, and self-actualization. Negative correlations with trait mindfulness included all facets of neuroticism, as well as depression, anxiety, negative affect, and patient-reported physical symptoms (Brown & Ryan, 2003). Self-determination theory also appears to be related to trait mindfulness as all three aspects of the Self-Determination Theory (autonomy, competence, and relatedness) (Deci & Ryan, 2011) have strong positive correlations with trait mindfulness. In conjunction with these correlations, Brown and Ryan (2003) indicated that individuals scoring higher on trait mindfulness also had more concordance between implicit and explicit measures of affect. It is possible that trait mindfulness is related to personality congruence and motivation overall.

Other measures of trait mindfulness have been related to positive outcomes. A meta-analysis of 29 studies using six different measures of trait mindfulness with an Eastern perspective looked at the relationships of mindfulness with the Big Five personality traits and affect (Giluk, 2009). Mindfulness had a strong positive association with conscientiousness and strong negative associations with neuroticism and negative affect. Positive moderate relationships for mindfulness were also found with positive affect and agreeableness.

Trait mindfulness is also associated with interpersonal behavior (Lakey, Kernis, Heppner, & Lance, 2008). People high in trait mindfulness were less defensive verbally,

meaning they were more open and honest in their communication about themselves with others. Mindfulness also mediated the relationship between authenticity and lowered verbal defensiveness.

Negative associations have also been found between mindfulness and different types of anxiety, namely trait anxiety and attachment anxiety (Walsh, Balint, Smolira, Frederickson, & Madsen, 2009). Attentional control was positively associated with mindfulness and it partially mediated the relationship between mindfulness and trait anxiety. The aspects of mindfulness relating to acceptance and attention to the present moment are negatively related to aspects of attachment anxiety, such as rumination and hypersensitivity, and negative attentional biases (Walsh et al., 2009).

Mindfulness is also linked to positive well-being in those with no history of meditation. In a sample of only non-meditators, trait mindfulness was measured and was positively related to psychological well-being, self-compassion, agreeableness, conscientiousness, openness, and extraversion, and was negatively related to neuroticism (Hollis-Walker & Colosimo, 2011). The findings are unique in that all of the Big Five Traits were associated with mindfulness. In studies of meditators, only three or four of the traits typically yield relationships with mindfulness, which illustrates some of the differences in trait mindfulness between meditators and non-meditators.

State mindfulness. Mindfulness as a state refers to being intentionally aware of the present moment with acceptance (in that particular moment) and has been measured successfully in both meditators and non-meditators by the state version of the MAAS (Brown & Ryan, 2003). Mindfulness as a trait does not typically significantly correlate with mindfulness as a state, which indicates that they are unique constructs (Barnes,

Brown, Krusemark, Campbell, & Rogge, 2007; Brown & Ryan, 2003; Thompson & Waltz, 2007). State mindfulness and trait mindfulness also correlate with different personality traits, which further supports their distinctiveness (Thompson & Waltz, 2007).

Studies measuring state mindfulness typically involve a mindfulness intervention. The condition of being mindful is often experienced after a systematic mindfulness induction, which is typically measured using the Toronto Mindfulness Scale (TMS; Bishop et al., 2005). Other studies simply measure the mindfulness state without an induction using the state version of the MAAS (Brown & Ryan, 2002).

Positive outcomes are associated with a mindfulness state. In one study, undergraduate and graduate students in a 15-minute focused breathing induction condition experienced lower emotional reactivity and reduced negativity to exposure to photos of high emotional valence than those in the unfocused thinking and worry conditions (Arch & Craske, 2006). The breathing induction was adapted from the sitting mindfulness instructions in the Mindfulness Based Stress Reduction course (MBSR; Kabat-Zinn, 1990), which is an 8-week mindfulness intervention. All three conditions lasted 15 minutes and participants were repeatedly reminded to focus on the induction (mindfulness, worry, or free-thought) (Arch & Craske, 2006).

A brief mindfulness intervention also reduced dysphoric mood in a sample of non-meditating students. The 8-minute audio mindfulness intervention based on instructions from MBSR (Kabat-Zinn, 1990) was more effective at reducing negative affect following a negative mood induction than was the same amount of time in

rumination (thinking about the self) and distraction (not thinking about the self) conditions (Broderick, 2005).

Brief mindfulness interventions seem to yield different results, depending on the previous meditation experience of participants. Meditators and non-meditators were given a 15-minute mindfulness intervention by being instructed to focus on the breath (Lau et al., 2006). It was predicted that the intervention would invoke a state of mindfulness in the meditators, but not in in the non-meditators. After the intervention, all participants completed a measure of state mindfulness (Toronto Mindfulness Scale, TMS, Lau et al., 2006). Scores for both the curiosity and decentering subscales of the TMS were higher for experienced meditators than less experienced meditators, but levels significantly increased for both groups of meditators.

Trait and State Mindfulness as Unique Constructs

Many studies examine both trait and state mindfulness regarding specific outcomes. These studies can compare and contrast the different types of mindfulness in examining their differential influence on these outcomes. One study in particular examined the differences in relationships to Big Five traits between state and trait mindfulness (Thompson & Waltz, 2007).

Groups of students with no history of meditation engaged in a 15-minute meditation intervention where they were instructed to follow their breathing and to direct attention back to the breathing if they were distracted. State mindfulness was assessed with the TMS after the intervention. Measures of positive and negative affect and trait mindfulness (FFMQ) were counterbalanced with the mindfulness intervention. Half of the participants completed the trait measures before the intervention and the

other half completed the measures after the intervention. State mindfulness was not significantly correlated with trait mindfulness in this sample, but was positively correlated with the trait of openness to experience. In addition, trait mindfulness was positively correlated with agreeableness and conscientiousness and was negatively correlated with neuroticism. Both positive and negative affect were lower for the group that completed the measures after the mindfulness intervention than the group that completed the measures before the intervention. State mindfulness in non-meditators was positively correlated with the observe facet of the FFMQ, but none of the facets were related to state mindfulness in the sample of experienced meditators (Thompson & Waltz, 2007). The findings confirm that state and trait mindfulness are separate constructs and are especially distinct between mediators and non-mediators.

In a study of romantic couples, both types of mindfulness were related to relationship quality, but in different ways. Trait mindfulness measured by the MAAS predicted relationship satisfaction and lower emotional stress response in partners. Without a mindfulness induction, state mindfulness as measured with the state MAAS, was related to better communication quality while discussing conflict topics specific to the relationship (Barnes et al., 2007). However, the MAAS is not the most comprehensive measure of mindfulness as it mainly focuses on the attention component. Although a mindfulness induction was not used, measured state mindfulness of the partners was related to different aspects of relationship quality than was trait mindfulness (Barnes et al., 2007).

Using the experience sampling method, Brown and Ryan (2003) demonstrated that both trait and state mindfulness predicted self-regulated behavior and positive affect

on a daily basis, but the effects of both kinds of mindfulness were independent of one another. Trait mindfulness was assessed using the MAAS before the experience sampling was administered and state mindfulness was measured on the experience sampling form itself three times a day for 14-21 consecutive days (depending on the sample) using five re-worded questions from the MAAS. Trait mindfulness predicted more autonomous behavior in everyday life and less negative affect. State mindfulness was associated with greater autonomy, increased positive affect, and less negative affect. Although similar, the effects of both kinds of mindfulness were not dependent upon the other (Brown & Ryan, 2003). The outcomes experienced in association with state mindfulness were independent of trait mindfulness. For example, state mindfulness, but not trait mindfulness, had a strong positive association with positive affect, while trait mindfulness, but not state mindfulness, had a strong negative association with negative affect.

Mindfulness interventions

Several mindfulness interventions have been created, two of which are Mindfulness Based Cognitive Therapy (Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000) and the Eight Point Program (Easwaran, 1991). The most well-known mindfulness intervention is the Mindfulness Based Stress Reduction (MBSR) program that was created in 1990 by Jon Kabat-Zinn. The MBSR program was first developed for work with patients in hospitals that had no other recourse in their health care, particularly with pain management (Kabat-Zinn, 1990). The program involves eight weekly group sessions with an instructor that are 2 ½ hours long, individual daily meditation practice for 45 minutes at home, and a 1-day mindfulness meditation retreat

lead by an instructor. Different forms of meditation are implemented into the program, such as sitting meditation (mindfulness of the breath), bodyscan, mindful movement (yoga), and walking meditation. The technique of mindfulness meditation is to use the breath or some other sensation (such as the process of walking) as an anchor for one's thoughts. The instructions are to focus on the sensation of breathing and as thoughts arise, to notice them as just thoughts or events, and gently, but firmly bring the focus of the mind back to breathing. It is not about ridding oneself of all thoughts, but to practice noticing thoughts as events and bringing attention back to an anchor such as the breath. The emphasis of mindfulness meditation is placed on the idea of practice. Mindfulness meditation is practice for being mindful out in the real world, so that when thoughts or feelings arise, one can notice them and more mindfully chose how to respond instead of automatically reacting (Kabat-Zinn, 1990).

Physical Health Benefits. Mindfulness interventions were initially implemented to relieve suffering from chronic health conditions such as chronic pain, irritable bowel syndrome, and cancer. The first study to examine the use of MBSR on chronic conditions examined individuals who were suffering from chronic pain (Kabat-Zinn, 1985). Compared to treatment as usual, MBSR successfully helped individuals with chronic pain perceive their pain as less intense in the present moment, reduced depression and anxiety as a result of chronic pain, and increased the patients' levels of activity and self-esteem (Kabat-Zinn, 1985). Most of the effects of the mindfulness intervention lasted 15 months after the intervention ended, except for the reduction of present-moment chronic pain (Kabat-Zinn, 1985).

In a wait-list controlled study of women with different varieties of cancer, eight weeks of MBSR significantly reduced self-reported rumination in the MBSR group as compared to the wait-list control group (Campbell, Labelle, Bacon & Carlson, 2011). Pre-and post-intervention blood pressure was also examined in the same study. The intervention did not significantly reduce blood pressure compared to the wait-list controls, but for those with higher levels of blood pressure at baseline, MBSR did reduce systolic blood pressure in the experimental group. The results may be indicative of the stress-reducing nature of the intervention and not as directly causal to the reduction on blood pressure (Campbell et al., 2011).

A meta-analysis of studies examining cortisol and MBSR found that participation in MBSR significantly reduced cortisol levels or changed the patterns of cortisol from maladaptive to adaptive for participants in about half of the studies. The authors suggested that cortisol has the potential to be a good indicator of improvement, possibly attributed to MBSR, in lowering stress and increasing health (Matousek, Dobkin, & Pruessner, 2010). A tentative link between MBSR and lowered cortisol was later found in a study examining self-reported mindfulness following a three-month meditation retreat. In the group experiencing large increases of mindfulness, there was an average decrease in evening cortisol levels (Jacobs et al., 2013).

Although MBSR has not been shown to prevent illness, it has been tied to increased immunity, and in particular to decreasing the level of the cytokine IL-10 which is associated with inflammation. The increases in immunity following MBSR were similar to levels shown when an individual moves from a depressive state to normal psychological functioning (Carlson, Speca, Patel & Goodey, 2003). In another

study, aging patients showed improvements in immunity after a mindfulness-type meditation that was presented to the patients as relaxation and social contact interventions (Kiecolt-Glaser et al., 1985).

Psoriasis patients about to receive ultraviolet phototherapy or photochemotherapy were randomly assigned to listen to audio guided mindfulness meditation during the light treatments or to undergo treatments only (without guided mindfulness meditation). Patients received on average 40 treatments lasting anywhere from 30 seconds to 13.5 minutes. The rate of skin clearing of individuals receiving mindfulness instructions during treatment was significantly faster than those in the control group (Kabat-Zinn et al., 1998). Psychological benefits were present as well, as those in the mindfulness group experienced reduced distress and increased well-being in comparison to the control group. The reduced distress associated with the mindfulness intervention may have been related to an influence in inflammation processes in healing (Kabat-Zinn et al., 1998).

Previous research has clearly shown that mindfulness meditation can help relieve the suffering for many individuals with physical health ailments. Mindfulness has also helped those with physical ailments better manage the psychological distress that accompanies many physical health problems.

Psychological health benefits. In the last decade, mindfulness interventions have been applied to psychological problems and the results have been as positive as those found with physical health problems. Mindfulness has been used with depressed individuals to alleviate their symptoms by increasing mood and overall well-being (Teasdale et al., 2000). It has also been found to reduce stress and anxiety (Carlson,

Speca, Patel, & Goodey, 2003; Evans, Ferrando, Findler, Stowell, Smart, & Haglin, 2007; Nyklíček, van Beugen, & Denollet, 2013). In a review of empirical studies that used the Eastern conceptualization of mindfulness, it was found that mindfulness as measured by several different scales increased subjective well-being and behavioral regulation, as well as reduced emotional reactivity and psychological problems (Keng, et al., 2011). The review also revealed general correlates with mindfulness such as agreeableness, conscientiousness, empathy, competence, self-esteem, positive affect, and reduced neuroticism and rumination. These benefits and characteristics will be discussed further in a review of specific studies.

One study examined initially distressed individuals after an 8-week MBSR program who experienced reduced stress, more positive affect, and greater quality of life than those in the wait-list control group. The mindfulness program increased trait mindfulness and trait mindfulness mediated the relationship between participation in the program and the positive outcomes (Nyklicek & Kuipers, 2008).

A longitudinal study found increases in trait mindfulness, and reductions in stress and rumination after participation in the MBSR and the Eight Point (EPP) programs, as compared to wait-list controls (Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). The EPP differs from MBSR in its focus on concentration as opposed to mindfulness, with the use of techniques such as passage meditation (meditating on a passage of text) and mantrams (mantras). Trait mindfulness was measured by the MAAS pre-test, post-test, and 8-weeks after completion of the programs. Trait mindfulness mediated the relationship between program participation and reductions in stress and rumination (Shapiro et al., 2008), such that trait mindfulness significantly predicted reductions in

both stress and rumination above that of program participation. These studies indicate that trait mindfulness or mindfulness skills can be developed through participation in a mindfulness based program (Baer et al., 2008).

From the research reviewed here, the psychological benefits and characteristics associated with mindfulness are many and appear to be quite positive. There seems to be few negative aspects to practicing mindfulness, such as disorientation, increased negativity, and psychosis (Shapiro, 1992) which are very rare and typically only occur after very long periods of meditation. The positive benefits and characteristics are related to trait mindfulness, state mindfulness, and mindfulness skills cultivated through mindfulness programs. Interestingly, many of the positive characteristics of people who practice mindfulness (positive well-being) also are found in people who are perceived more accurately by others.

Moderators of Mindfulness and Judgability

Mindfulness skills. If an association between mindfulness practice and judgability exists, it may be moderated by several factors. In previous studies, mindfulness meditation and its relation with other outcomes and characteristics was often mediated by self-reported trait mindfulness (Shapiro et al., 2008; van den Hurk et al., 2011). Thus, the outcome of judgability may be moderated by the self-reported mindfulness resulting from the mindfulness induction as measured by the TMS. The decentering factor of the TMS in particular may lead to greater levels of judgability, as it is related to creating psychological distance from the negative aspects of one's thoughts, feelings, and identity (Lau et al., 2006; Shapiro, 2005) which may lead to more available and relevant cues about what the person is really like.

Psychological well-being. Psychological well-being (PWB) is another characteristic that is common to both mindful people and good targets, and the level of PWB may be responsible for the possible degree of association between trait mindfulness and judgability. Psychological well-being or adjustment refers to both the hedonic and eudemonic parts of well-being. Hedonia incorporates constructs such as happiness and satisfaction with life, while eudemonia incorporates constructs such as purpose in life and positive interpersonal relationships (Ryff, 1989). Six dimensions make-up one model of psychological well-being that is based on the eudemonic aspect. Self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth dimensions are all derived from several theories of positive well-being (Ryff, 1989). Although there are relations between PWB and judgability and PWB and mindfulness, the directions of those relations are currently unclear (Human & Biesanz, 2013). Individuals who are psychologically well-adjusted tend to be more authentic and coherent in their personalities, and to have greater self-knowledge and interpersonal appeal (Human & Biesanz, 2013). Therefore it is expected that PWB will moderate the relation between trait mindfulness and judgability. Examining PWB as a moderator between mindfulness and judgability may increase understanding of the nature of positive well-being.

Purpose and Rationale

There appear to be many similarities in the positive characteristics and outcomes between mindful people and good targets, including positive interpersonal relationships, increased expressiveness, and psychological adjustment. To our knowledge, the relationships between mindfulness meditation practice and the moderators of the

Realistic Accuracy Model have not been examined. In addition, the relationship between trait mindfulness of targets and realistic accuracy of judgments of those targets is unknown. The relations to state and trait mindfulness could be examined with any of the moderators of accuracy and any of the stages of accuracy outlined in RAM. However, given that there are similarities between those high in trait mindfulness and good targets, it may be that people who practice mindfulness and those who are dispositionally mindful are also good targets.

Judgability appears to be a malleable disposition and previous studies have implicated that one can be taught to be a good target through socialization (Human & Biesanz, 2013). In particular, the socialization aspect of being a good target may be related to mindfulness as it may increase expressiveness, likeability, and social skills. It is possible that practicing mindfulness meditation and increasing mindfulness skills (observing, describing, acting in awareness, accepting, non-reactivity) could increase judgability. In the context of RAM, mindfulness meditation on the part of the target may contribute to the detection and utilization stages for the judges by increasing the targets' interpersonal appeal and social skills. Mindfulness meditation could help individuals become better targets and eventually lead to better psychological and interpersonal outcomes. If a relation exists between trait mindfulness and judgability, it is possibly moderated by the psychological well-being of the targets. Likewise, if a relation exists between practicing mindfulness and being a good target, it is possibly moderated by the resulting state mindfulness of the target.

Thus the following predictions were tested:

H1. Trait mindfulness of the target will predict higher levels of normative and distinctive accuracy of personality judgments made by judges viewing videos of targets.

H1a. Normative and distinctive accuracy of personality judgment will be higher of targets high in trait mindfulness than of targets low in trait mindfulness.

H2. The positive relations between trait mindfulness and normative and distinctive accuracy will be moderated by psychological adjustment of the target.

H3. Normative and distinctive accuracy of personality judgment will be higher of individuals (targets) who have completed a brief mindfulness induction than of individuals who have completed a relaxation condition, while statistically controlling for trait mindfulness of the targets.

H4. The relation between a brief mindfulness induction and normative and distinctive accuracy will be moderated by the self-reported state mindfulness skills of the target.

Chapter III

Stimulus Materials

Stimulus Videos

Stimulus materials, in the form of video recordings of participants responding to interview questions, were created and used in two studies (see Figure 1).

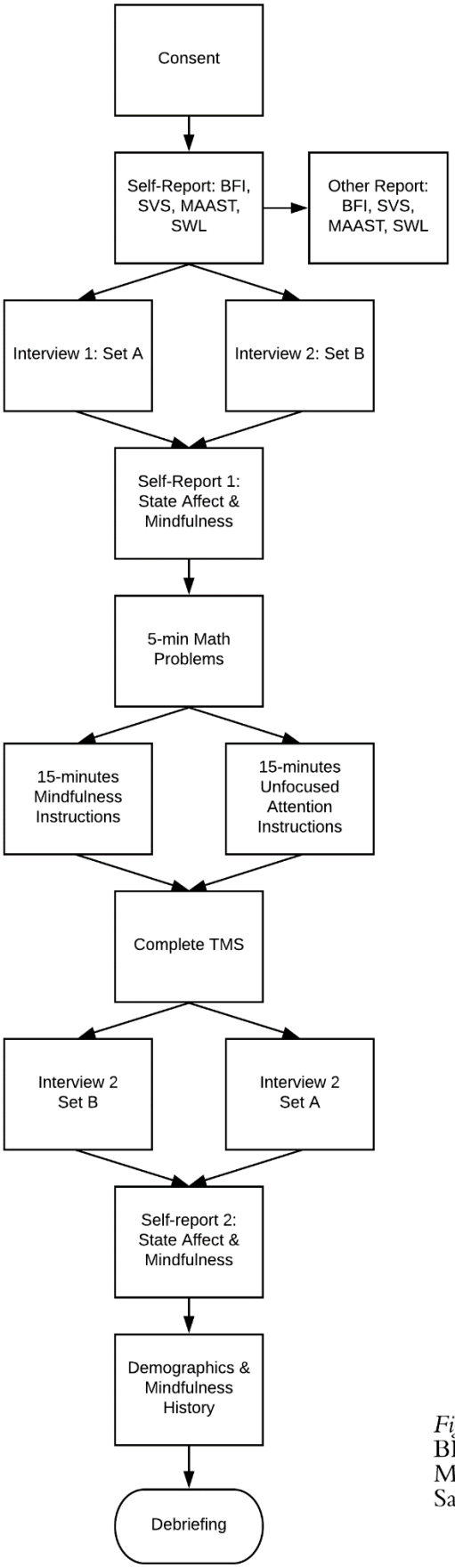

Figure 1. Stimulus Creation Flow Chart.
BFI = Big Five Inventory, SVS = Schwartz Value Survey, MAAST = Mindful Attention and Awareness Scale, SWL = Satisfaction with Life, TMS = Toronto Mindfulness Scale

Participants *(Targets)*. The targets in the stimulus videos included 222 undergraduate students recruited through the SONA psychology research system. The focus of the studies was on the characteristics of the targets, therefore the critical sample size for this study was the number of targets (J. Biesanz, personal communication, December 31, 2015). A power analysis was conducted based on the number of targets required, not on the number of judges required as is typically done in accuracy research. Power was determined for two groups of targets using an independent samples *t*-test through G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) because it is approximately equivalent to the analyses conducted in the Social Accuracy Model (SAM)[1], which is a multi-level model that was used in the current studies (J. Biesanz, personal communication, December 31, 2015). For two conditions, 210 targets was expected to provide sufficient power for an 80% chance of detecting an effect size of d =.50, at a significance level of p = .05. An attempt to create stimulus materials for even numbers of males and females was made through recruitment of only males alternating with recruitment of only females every week until 70 male targets had participated. When 70 males had participated in the study, recruitment was open to all genders for the remainder of the time.

Two-hundred twenty-two participants began the study. Eleven participants did not complete the study for various reasons (e.g., technical problems with the survey website, participants withdrawing from the study, termination of the session due to participant inability to follow protocol). Of the 211 remaining target participants, the mean age was 22.41(SD = 6.62), with 36% males, 59% females (5 % did not answer).

[1] See Analytic Approach subsection for a description of SAM.

The ethnicities of the target sample was made up of 70.1% white/Caucasian, 14.2% Hispanic/Latino, 2.8% African American, 3.8% Asian/Pacific Islander, 0.5% Native American, 4.8% mixed ethnicities, and 2.3% did not provide information on ethnicity. In terms of religious affiliation, the sample consisted of 22.3% Christian, 14.2% Catholic, 25.6% LDS, 14.2% other, 20.9% no religion, and 2.8% did not answer. Regarding mindfulness history, 15.2% of the sample was not familiar with Jon Kabat-Zinn's definition of mindfulness as specified in the current dissertation, 60.2% of the sample was somewhat familiar with mindfulness, and 23.2% were very familiar with mindfulness. Regarding meditation practice, 14.2% of the sample shared that they were currently practicing mindfulness, while 5.6% of the sample had been practicing mindfulness for less than 6 months and 8.1% had been practicing for over 6 months up to 3 years.

The number of videos used in Study 1 was 209 although 213 targets completed the first part of the stimulus collection. Videos for two participants were missing because of a theft of the video camera early in the stimulus collection, and two other videos wer missing due to technical difficulties with the replacement camera.

For Study 2, there are videos missing for three additional targets who only participated for the first half of the study (which means there are videos for those targets only for Study1, but no demographic information). The number of videos used in the study was 205, although 209 videos were recorded for the second part of stimulus creation. Three videos could not be used due to technical difficulties and one target requested that the video not be used in the study.

Each of the targets was asked to recruit at least two acquaintances they had known for at least six months to come to the lab or complete online surveys to report on characteristics of the targets.

Participants (*Acquaintances*)

Four-hundred seven acquaintances of the targets provided other reports of the targets on measures of personality traits, personal values, dispositional mindfulness, and life satisfaction. The average age was 28.45 years (SD=13.56), 33% were male, 66% female, and 1% did not report gender. In terms of ethnicities, 76.4% were white/Caucasian, 12.5% Hispanic/Latino, 3.7% Asian/Pacific Islander, 1.7% African American, and 5.6% Other/prefer not to answer. Acquaintances knew the target an average length of 6 years (*SD*=8.74) and reported that they were quite familiar with the targets, *M*=7.85, *SD*=1.32, on a scale of 1 (*not at all*) to 9 (*very well*). Relationship types included significant others, close/best friends, parents, roommates, son/daughter, relatives, friends, co-workers, teammates, classmates, siblings, distant friends, other, and none listed. One target had five peer raters, 17 targets had four raters, 30 targets had three raters, 97 targets had two raters, 40 targets had one rater, and 37 targets did not have any peer raters, but were still included in the study. The thirty-seven targets without peer ratings were included in the analyses with the use of the self-reports as the accuracy criteria. It was expected using the self reports for 37 out of 214 participants would not make much of a difference in the overall levels of accuracy. However accuracy of these 37 participants could be examined separately in a future study.

Measures[2]. For a summary of all of the measures and the respective studies, see Table 1.

Meditation history. Questions regarding meditation history were derived from the participant characteristics described in Bishop and Ryan (2003) and Van Dam et al. (2008). Participants self-reported on familiarity with the concept of mindfulness, type of previous or current meditation experience, and length and frequency of previous or current meditation experience.

Trait mindfulness. The trait version of the Mindfulness Attention Awareness Scale (MAAS-trait; Brown & Ryan, 2003) measures mindfulness as a single characteristic. The 15 items are rated on a 6-point Likert scale ranging from 1 (*almost always*) to 6 (*almost never*), with higher scores indicating greater mindfulness. The MAAS has good convergent validity with emotional intelligence, r=.42, the openness to experience domain from the NEO-PI-R, r =.18, and the Mindfulness/Mindlessness Scale (MMS; Bodner & Langer, 2001), r =.32. It has good divergent validity with the self-reflectiveness, public self-consciousness, and social anxiety facets of the Self-Consciousness Scale (SCS; Fenigstein et al., 1975), r's = -.13, -.14, -.36 (respectively), and rumination on the Rumination-Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999), r = -.39. Alphas are typically high, ranging from .83 to .87 (Brown & Ryan, 2003). Cronbach's alpha for the current study based on self-ratings is .85. In the

[2] The following measures were included in the data collection but not used in the analyses for the current studies: The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2008) measures five facets of trait mindfulness: observing, describing, acting with awareness, non-judging, and non-reactivity. The 39 items are rated on a 5-point Likert scale. The Ego-Resiliency Scale (ER; Block & Kremen, 1996; see also Letzring, Block, & Funder, 2005) measures the degree to which one's default level of ego-control can be adapted to fit the demands of the situation. It has 14 items that are rated on a 4-point Likert scale) scale. Ego-resiliency has been previously linked to psychological adjustment (Block & Kremen, 1996).

Table 1

Measures for Study 1 and Study 2

	Measure	Items			Targets	Acquaintance	Judges
FFMQ	Five Facet Mindfulness Questionnaire	39	Study 1	Study 2	Self-ratings		
MAAS	Mindfulness Attn Awareness Scale	15	Study 1	Study 2	Self-ratings	Other-ratings	Self & other
MAAS-state	Mindfulness Attn Awareness Scale - state	5	Study 1	Study 2	Self-ratings		Self
BFI2	Big Five Inventory	60	Study 1	Study 2	Self-ratings	Other-ratings	Self & other
TIPI	Ten-Item Personality Inventory	10	Study 1	Study 2			Self
SVS	Schwartz Value Survey	56	Study 1	Study 2	Self-ratings	Other-ratings	Self & other
SVSS	Short Schwartz Value Survey	10	Study 1	Study 2			Self
SWL	Satisfaction with Life	5	Study 1	Study 2	Self-ratings	Other-ratings	Self & other
PWB	Psychological Well-being	42	Study 1	Study 2	Self-ratings		
ER	Ego-resiliency	14	Study 1	Study 2	Self-ratings		
PANAS-trait	Positive Negative Affect Scales - global	20	Study 1	Study 2	Self-ratings		
PANAS-state	Positive Negative Affect Scales - state	20	Study 1	Study 2	Self-ratings		Self
TMS	Toronto Mindfulness Scale	13	--	Study 2	Self-ratings		

current study the distribution on this measure was approximately normally distributed: skewness = .08, kurtosis = .42.

State mindfulness. The state version of the Mindfulness Attention Awareness Scale (MAAS-state; Brown & Ryan, 2003) has five items that are drawn from the MAAS-trait to measure state mindfulness, which are slightly rephrased to reflect the current moment. Questions are rated on a 7-point scale from 0 (*not at all*) to 6 (*very much*) and are general enough to be utilized in a wide variety of situations. A higher score means a more mindful state. The measure has high internal consistency, a = .92, and good convergent validity with the trait version of the MAAS, r = .44 (Brown & Ryan, 2003). Cronbach's alphas for the current study based on self-report are .86 for ratings at Time 1 and .88 for ratings Time 2.

Affect. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) measures mood using separate scales for positive affect (PA) and negative affect (NA). Ten positive and ten negative adjectives are listed and participants indicate the degree to which each of the adjectives were experienced at that moment, in the last week, or in general, on a 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). The scales can be used to measure state affect with the instructions, "Indicate to what extent you feel this way right now, that is, at the present moment" and to measure overall affect with the instructions, "Indicate to what extent you generally feel this way, that is, how you feel on the average." Alpha coefficients range from .86 to .90 for PA and .84 to .87 for NA. The PANAS has good external validity with the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), r = .56 (NA), r = -.35 (PA), and the Hopkins Symptoms Checklist

(HSCL; Derogatis et al., 1974), *r* = .74 (NA), *r* = -.19 (PA) (Watson, Clark, & Tellegen, 1988). Cronbach's alphas for the current study based on self-reports are .81 for general PA, .84 for general NA, .89 for state PA (Time 1), .85 for state NA (Time 1), .91 for state PA (Time 2) and .90 for state NA (Time 2).

Personality traits. The Big Five Inventory-2 (BFI-2; Soto & John, 2015) measures five broad domains of personality: open-mindedness, conscientiousness, extraversion, agreeableness, and negative emotionality, with three facets per domain. The BFI-2 has 60 items rated on a Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). The measure has demonstrated good reliability with alphas for the factors ranging from .83 to .87, and good convergent validity over all 60 of the items with the original BFI (John & Srivastava, 1999), *r*=.92 and with the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992), *r*=.75. Cronbach's alphas for the current study based on self-reports are high for all traits (extraversion=.83, agreeableness=.76, conscientiousness=.85, neuroticism=.89, and openness=.79). The distribution of the domains in the current study were all in the normal range.

Ten-Item Personality Inventory. The Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) measures the Big Five personality domains with 10 items (2 per domain) on a 7-point scale ranging from 1 (*Disagree strongly*) to 7 (*Agree strongly*). The TIPI has adequate reliability with alphas for the Big Five domains ranging from .45 to .73, which are lower than alphas for the full BFI measure because the TIPI is based on a few selected items for each trait in order to capture the breadth of the traits. The measure also has good convergent validity with the original BFI (John & Srivastava, 1999) overall, *r*=.77. Cronbach's alphas for the current studies are .70

overall for Study 1 and .59 overall for Study 2. The distribution of the domains were in the normal range.

Personal values. The Schwartz Value Survey (SVS; Schwartz, 1992) measures personal values as "guiding principles" in one's life. The 10 value types are self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism. The values complete a circular structure of opposing motivations. The SVS has 56 items rated on an asymmetrical scale ranging from -1 (*against my values*) to 7 (*of supreme importance*). The SVS has adequate reliability with alphas for the scale scores that range from .60 to .72 (Roccas, 2002). Cronbach's alphas for the current study based on self-reports are low to adequate: self-direction = .65, stimulation= .75, hedonism = .56, achievement = .72, power = .75, security = .68, conformity = .73, tradition = .57, benevolence = .81, and universalism = .80. The distribution of the value types were mostly in the normal range.

The Short Schwartz Value Survey. The Short Schwartz Value Survey (SSVS; Lindeman & Verkasalo, 2005) measures the 10 Schwartz personal values with 10 items (1 per value) rated as "a life-guiding principle" on a 9-point scale ranging from 0 (*against my values*) to 8 (*of supreme importance*). With the use of the general reliability coefficient (GRC), the SVSS has shown adequate reliability with alphas ranging from .34 to .77 for the ten value types, and adequate convergent validity with the SVS (*r*s = .45 to .70) and the Portrait Value Survey (PVC) (*r*s =.45 to .72) for each of the ten value types. The Cronbach's alphas are .77 overall for the current Study 1 and .79 overall for Study 2. The distribution of most of the value types is within the normal range.

Psychological well-being. The Psychological Well-Being scale (PWB; Ryff & Singer, 2008) measures positive functioning with 48 items rated on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Dimensions of psychological well-being are: self-acceptance, personal growth, autonomy, positive relationships, environmental mastery, and purpose in life, α = .86 to .93. The self-acceptance and positive relations with others subscales demonstrated good convergent validity with a single-item measuring happiness, *r'*s = .36 and .26, respectively, and a single-item assessing satisfaction, *r'*s = .42 and .35, respectively. All subscales had good divergent validity with the Zung Depression Scale (Zung, 1965), *r'*s = -.05 to -.50 (Ryff & Keyes, 1995). Psychological well-being was totaled for one composite score of PWB for the current study and the Cronbach's alpha is .92. The distribution of PWB in the current study was within the normal range: skewness = -.611, kurtosis = .27.

The Satisfaction with Life Scale. The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is a five-item measure of an individual's subjective well-being. Items are rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The SWLS has been shown to have good reliability (α =. 87) and convergent validity with other measures of subjective well-being, such the Self-Anchoring Ladder (Cantril, 1965), *r* = .62, (Diener et al., 1985). Cronbach's alpha for the current sample is .85.

***The Toronto Mindfulness Scale*.** The Toronto Mindfulness Scale (TMS; Lau et al., 2006) measures mindfulness after meditation using 13 items describing one's experience during meditation, rated on a 5-point Likert scale from 0 (*not at all*) to 4 (*very much*). Two factors have emerged from the scale through factor analysis: Decentering (composite reliability index = .87) and Curiosity (composite reliability

index = .86). The Decentering and Curiosity subscales have good divergent validity with the Dissociative Experience Scale (DES; Bernstein & Putnam, 1986), *r'*s = .06 and -.04, respectively, and the rumination subscale of the RRQ, *r'*s = .06 and -.19, respectively (Lau et al., 2006). Cronbach's alphas for the current sample are adequate: Decentering α = .72 and Curiosity α = .87. The distribution of the current sample was within the normal range: skewness = -.16, kurtosis = -.18.

Demographic Information. A brief questionnaire assessing demographic information included questions on age, gender, ethnicity, and religious affiliation. The questions on age and religious affiliation were an open response type and the questions for gender and ethnicity were a closed response type that also included the open-response for "other".

Procedure – Targets. Targets either came to the lab with two acquaintances (whom had known the target for at least 6 months) to provide other reports on the MAAS, BFI-2, SVS and SWL for the target, or they emailed the acquaintance-survey link with an explanation of how to complete the survey to four acquaintances upon arriving at the lab. Targets completed self-report measures of the FFMQ, MAAS, PANAS-global, BFI-2, SVS, SWL, PWB, ER, and meditation history. After completing the measures, any acquaintances present left the lab, and the main participants (targets) were given a separate consent form for the use of the videos and a script of the first interview questions to review while the trained research assistant (RA) set up the video camera. Participants were reminded to not share anything that they did not wish others to hear while on video, and that the RA would have to report any current abuse shared in the interviews to the authorities. The RA timed and recorded the number of minutes it

took the targets to review the interview questions before they expressed readiness to start the interview. Targets were interviewed by an RA for approximately 3-5 minutes using two counterbalanced sets of questions (see Appendix A), before and after listening to instructions of a mindfulness intervention or an unfocused attention control. The sets of three questions were intentionally balanced for valance (positive/negative) and adult vs. childhood focus. Participants were also prompted to choose mildly negative events to report in the interviews. After pressing record, the RA asked the target a few warm-up questions, such as "What are you majoring in?" and "What got you interested in your major?" Targets were also told to aim for about one-minute answers to each question on the interview and if they did not fill the time, that the RA would ask them follow-up questions. RAs were trained to ask follow-up questions from the interview sheet such as, "what does this say about your life", or "why do you think that moment stands out?" Following the interview, the RA turned off the camera and instructed the participant to complete the MAAS-state and PANAS-state. After completing these state measures, the participants were given basic arithmetic questions to complete for five minutes and were told to do their best and not worry about how many problems they finished or got correct. This was done to disperse any residual emotions that could have resulted from thinking about the events reported in the interviews.

After completion of the arithmetic questions, targets were randomly assigned to listen and follow audio instructions of mindfulness meditation or unfocused attention for 15-minutes. The instructions for the mindfulness induction were derived from MBSR sitting meditation instructions (see Appendix B). The instructions for the unfocused attention control were similar to those used by Arch and Craske (2006), except they

were only stated once at the beginning of the recording instead of being repeated at one-minute intervals so as not to mimic the mindfulness instructions by bringing participants back to the present moment through reminders (see Appendix C). If participants had a question about the silence, the research assistants told them to "continue to follow the instructions." Both sets of instructions were recorded by a trained mindfulness meditation instructor. Following the intervention, targets immediately completed the TMS that served as both a manipulation check of induced state mindfulness and as a moderator of the accuracy of judges' ratings of the targets traits and values.

Before the second interview, targets were given the second list of questions from the life story interview to review and the RA timed and recorded the number of minutes before the target indicated readiness to continue. The targets were again video-recorded while being interviewed by the RA in the same manner as the first interview. Following the second interview, participants again completed the MAAS-state and PANAS-state measures, and also provided demographic information and completed the mindfulness meditation history questions.

Research assistants conducting the interviews were trained on how to manage any distress that may have been shown by the participants. RAs were instructed to ask the participants if they wanted to continue with the study if they were crying or seemed upset. In addition, they were to do the same if the participant shared traumatic experiences or prefaced their answers by saying that their negative experience was rather severe, although they knew they were asked to only share mildly negative experiences. At the end of the study, the RA again asked if the participant was "alright" after sharing the event and if he/she needed anyone to talk to about it. Lists of various mental health

facilities were offered to the participants if needed. These lists were offered to about 15 of the participants who shared traumatic experiences or seemed visibly upset. None of the participants took the sheet if it was offered and only replied with the response: "okay".

At the end of the session, the RA presented the paper consent form to the participants to sign in order to use the videos for research, now that they knew what they had said in the videos. There were two lines on the consent form, one for use of the videos in the current study, and another for use of the videos in future studies that are not yet planned. All participants signed the first line for the videos to be used in this current study, and all but three participants signed the second line for future use of the videos.

Twelve different research assistants conducted the video interviews and were each trained on the task by the student PI. The interviewers were asked to remain as neutral as possible while conducting the interviews, to read the interview questions word for word, and to only follow-up with questions from the question set to keep the interviews consistent. The interviewers were also instructed to keep their responses to the targets' answers neutral by simply nodding acknowledgment of what was being said and not to respond with favorable or unfavorable verbal or non-verbal responses. The full unedited videos reveal that there is some variability in how the interviews were conducted. Some RAs were more talkative and friendly than others, essentially acting like a "good judge" which may have made the targets' more or less comfortable thus leading them to reveal different types and amounts of cues during the videos (Letzring,

2008). In these studies the influence of the RA on accuracy was not examined, but it could be used as a moderator of accuracy in future research.

Editing Videos. Although participants were instructed to answer each question in approximately one minute, there was considerable variation in the lengths of individual answers. For the two current studies, videos were edited by the student PI and one trained RA to contain portions of each of the answers to the three questions, beginning when the participant first began speaking and ending after 50-80 seconds, which allowed for the completion of the participants' sentences. Total video lengths were between 2.5 and 4 minutes. At the beginning of each segment, labels were placed in the upper right hand corner of the screen to indicate what kind of event the participant was asked to discuss (Positive Childhood Memory, Mild Low Point, or Turning Point). If the participant shared a very traumatic event, the actual event was not included in the video, rather, only the participant talking vaguely about the event was included. In Study 1 there were 19 videos that contained descriptions of very traumatic incidents, and in Study 2 there were 11 videos that contained descriptions of very traumatic incidents (not including the target who asked that the video be removed) all of which were edited out.

The two editors of the videos were also interviewers of some of the videos. The editors/interviewers may have been biased in how the videos were edited. However, both editors followed a very stringent method of editing the videos which was intended to reduce any potential bias.

Manipulation Check

The Toronto Mindfulness Scale (TMS) was completed by target-participants directly after the mindfulness manipulation to measure the effectiveness of the

mindfulness instructions on bringing about a state of mindfulness. The 13 questions on the TMS were totaled for one aggregate score of induced mindfulness (IM). Higher scores indicate greater levels of induced state mindfulness (see Table 2). The average TMS score was at a moderate level (*M*=2.08, *SD*=.70, 95% CI [1.95, 2.21]) for all targets in the sample. The TMS scores of targets in the mindfulness instructions group (*M*=2.19, *SD*=.68, 95% CI [2.06, 2.32]) were significantly higher than the scores of those in the unfocused group (*M*=1.98, *SD*=.71, 95% CI [1.85, 2.11]), *t*(212)=2.20, *p*=.03, *d*=.30. Although the TMS scores were significantly higher in the mindfulness group than the unfocused attention control group, the scores for both groups were on the low end of the scale. However, the levels of the curiosity scale are higher than those found in previous research regarding experienced meditators (Lau et al., 2006). The effect size is also somewhat small, meaning that the mindfulness induction in this study may have been only moderately effective at bringing about a greater state of mindfulness.

Curiosity and Decentering. When the TMS scores were divided into Curiosity and Decentering subscales, the Curiosity scores were significantly higher for the mindfulness condition group than the unfocused attention group (*Mdiff*=.31, *SDdiff*=.03, 95% CI [.14, .48]), *t*(212)=-2.54, *p*=.01, *d*=.35, while the Decentering subscale did not yield a significant difference between the mindfulness group and the unfocused attention group (*Mdiff*=.12, *SDdiff*=.05, 95% CI [-.01, .25]), *t*(212)=-1.33, *p*=.185, *d*=.18. Thus, it appears that Curiosity was driving the difference in state mindfulness between the conditions (see Table 2).

Comparing the results to those of previous research (Lau et al., 2006) the scores on the Curiosity subscale of the full current sample were significantly higher than the average scores of less experienced meditators (M = 1.26, SD = .72), $t(214) = 14.23$, $p <$ .0001 (Lau et al., 2006). Curiosity scores of the full current sample were significantly higher than the average scores of experienced meditators (M = 1.79, SD = .66), $t(214) =$ 5.60, $p < .0001$.

The scores on the Decentering subscale of the full current sample were significantly higher than the average scores of less experienced meditators in previous research (M = 1.78, SD = .60), $t(214) = 5.60$, $p < .0001$. However, the Decentering scores of the full sample were significantly lower than the average scores of experienced meditators (M = 2.21, SD = .60), $t(214) = 3.62$, $p<.0001$ (Lau et al., 2006).

Trait Mindfulness and Psychological Well-Being of Targets

To further understand the relationship between overall trait mindfulness and psychological well-being (PWB) in this sample of targets, a correlation was conducted between the two variables which revealed a significant association, $r=.38$, $p<.001$. A

Table 2

Target Manipulation Check

		Induced Mindfulness (TMS Scores)		**Curiosity Subscale**		**Decentering Subscale**	
	N	M	SD	M	SD	M	SD
Full Sample	214	2.08	0.70	2.13	0.90	2.04	0.68
Mindfulness Instructions	107	2.19	0.68	2.29	0.87	2.1	0.66
Unfocused Attention Instructions	107	1.98	0.71	1.98	0.9	1.98	0.71
		t (212)=2.20, p =.03, d =.30		t (212)=-2.54, p =.01, d =.35		t (212)=-1.33, p =.185, d =.18	

Note. TMS=Toronto Mindfulness Scale

one-way analyses of variance further revealed that PWB differed between the three groups of trait mindfulness, $F(2, 218)=11.72$, $p<.001$, $\eta^2=.25$. Tukey post-hoc analyses indicated that the high trait mindfulness group significantly differed from the low ($M_{diff}=.47$, $SD_{diff}=.10$, 95% CI [.44, .49]), $t(145)=4.47$, $p<.0001$, and medium ($M_{diff}=.32$, $SD_{diff}=.09$, 95% CI [.30, .34]), $t(143)=3.63$, $p<.0001$, trait mindfulness groups in PWB, however the low and medium trait mindfulness groups did not differ from one another ($M_{diff}=.15$, $SD_{diff}=.10$, 95% CI [.13, .17]), $t(148)=1.46$, $p=.15$. Psychological well-being is highest at the highest levels of trait mindfulness (see Table 3).

Table 3

Study 1 Target Trait Mindfulness and Psychological Well-being

	M	***SD***	***N***
Overall Trait Mindfulness	3.67	0.74	222
High Trait Mindfulness	4.68	0.34	49
Moderate Trait Mindfulness	3.69	0.31	113
Low Trait Mindfulness	2.80	0.38	60
Psychological Well-Being	4.35	0.62	222

The current findings are consistent with previous research showing that trait mindfulness and PWB are closely linked (Baer et al., 2008; Brown & Ryan, 2003; Keng et al., 2011; Van Dam et al., 2009), as well as research regarding judgability and PWB (Colvin, 1993b; Human, 2009). In this sample, targets with the highest levels of trait mindfulness also had significantly higher levels of PWB than targets with medium and low levels of trait mindfulness.

Chapter IV

Study 1

The aim of this study was to examine the relationship between trait mindfulness in non-meditators and expressive accuracy or judgability. It was expected that trait mindfulness of the target would predict higher levels of both normative and distinctive accuracy of the judges' ratings of the targets. Judgments were based on video observations of the targets. Approximately 14% of the targets reported they were currently practicing meditation, so meditation practice was examined as a moderator of normative and distinctive accuracy.

Current Mindfulness Practice as a Moderator of Accuracy.

Thirty of the targets indicated that they were currently meditating between 1 to 5 days a week for 10 to 30 minutes each day. Mindfulness practice of the target was introduced into the model as a possible moderator of accuracy. Mindfulness practice was dummy coded as "0" for individuals not currently practicing, and "1" for individuals currently practicing mindfulness mediation. For judgments of personality traits, mindfulness practice did not moderate normative accuracy, b=-.003, p=.95, nor distinctive accuracy, b=.003, p=.90, indicating that the mindfulness experience of the targets did not influence the results regarding judgments of traits.

For judgments of personal values, mindfulness practice also did not moderate normative accuracy, b=.003, p=.94. However, there was significance for mindfulness practice as a moderator of distinctive accuracy, b=.05, p=.03, indicating that the unique values of those practicing mindfulness were judged more accurately than those not practicing mindfulness, but the finding should be interpreted with caution as there were

only 30 targets who reported current mindfulness practice. Because current mindfulness practice did not significantly moderate either type of accuracy for traits or for values, all of the eligible targets were included in the rest of the analyses.

Study 1 Method

Accuracy Ratings

Participants (Judges). Five-hundred thirty-nine workers were recruited through Amazon's Mechanical Turk to rate their own personality characteristics, watch videos, and rate characteristics of targets in the videos. The judges were paid as MTurk workers at the rate of 50 cents for completing at least 80% of the task and correctly answering 80% of the attention checks. To yield reliable accuracy scores, it was required that each of the 210 targets be rated by at least 10 judges, for a total of 2100 unique judge-target pairs. Comparing the variance of distinctive accuracy across approximately 500 judges per target (for 6 targets) with the average variance of distinctive accuracy across 5 random subsamples of either 10 or 20 judges per target (across 6 targets) indicated that the difference in the average sample variances was negligible (.004), therefore it was decided that 10 judges per target would be sufficient to obtain reliable accuracy scores for each target. Each judge rated four targets, thus a minimum of 526 judges were necessary to rate all targets 10 times.

The MTurk sample consisted of 1632 participants that initially began the survey, with 539 that completed the entire survey to receive payment (see Table 4). Hence only 33% of those who started the survey completed it. The high rate of attrition introduced some concerns about possible selection bias in that only certain types of people may have completed the survey. All of the 1632 participants provided self-reports of

personality traits, personal values, state mindfulness, and state positive affect (PA) and state negative affect (NA), and these characteristics were compared between the attrition group and judges group (those that finished the survey). Most of those who withdrew from the study did so after viewing the first video. The two groups differed significantly on the trait Openness to Experience, $t(1117)=-3.42$, $p=.001$, $d=.18$, with the judges group scoring higher than the attrition group ($M_{diff}=.26$, $SD_{diff}=.20$, 95% CI [.11, .41]). The groups did not differ on any of the other personality traits. Regarding personal values, the judges group scored significantly higher than the attrition group for Self-direction, ($M_{diff}=.29$, $SD_{diff}=.24$, 95% CI [.10, .48]), $t(1115)= 2.94$, $p=.003$, $d=.16$, and Benevolence ($M_{diff}=.25$, $SD_{diff}=.18$, 95% CI [.05, .45]), $t(1086)=2.31$, $p=.021$, $d= .13$. For Universalism, the judges group was also marginally higher than the attrition group ($M_{diff}=.24$, $SD_{diff}=.05$, 95% CI [.01, .47]), $t(1020)=-1.95$, $p=.051$, $d=.11$. For Hedonism, the attrition group was marginally higher than the judges group ($M_{diff}=.23$, $SD_{diff}=1.31$, 95% CI [0.00, .46]), $t(989)=1.83$, $p=.067$, $d=.10$.

The two groups[3] also differed on baseline state mindfulness, with the judges group reporting greater state mindfulness than the attrition group ($M_{diff}=.32$, $SD_{diff}=.07$, 95% CI [.18, .46]), $t(1272)=4.62$, $p<.0001$, $d=.24$. The two groups did not differ significantly on baseline state positive affect ($M_{diff}=.19$, $SD_{diff}=.02$, 95% CI [-1.13, .75]), $t(1100)=.40$, $p=.69$, $d=.02$, but they did differ on state negative affect with the attrition group reporting higher state NA than the judges group ($M_{diff}=2.04$, $SD_{diff}=1.90$, 95% CI [1.2, 2.88]), $t(1339)=5.09$, $p<.0001$, $d=.26$ (see Table 4).

[3] Demographic information of individuals in the attrition group cannot be compared to those in the judges group because participants in the attrition group dropped out of the study before answering demographic questions at the end of the study.

Of the sample of 539 judges that were included in the analyses, the mean age was 37.76 years (*SD*=12.35, Range=18-80). The sample consisted of 36.7% males, 62.5% females, and 7% did not answer the gender question. In terms of ethnicity, 74% of the sample was Caucasian, 6.3% Hispanic/Latino, 6.5% African American, 8.5% Asian/Pacific Islander, 1.1% Native American, 2.4% other/mixed, and 1.1% did not to answer.

Measures. Many of the same measures used in the stimulus creation were also used in Study 1, including other-report versions of the BFI, SVS, SWL, MAAS, and self-report versions of the PANAS-state, MAAS-state, TIPI and SVSS.

Procedure. Participants (judges) interested in the study were directed through MTurk to a link to the survey on SurveyGizmo. The study was described on MTurk as a Human Intelligence Task with the title: "How Well Can You Judge Others?" and the following description:

> This study looks at different techniques used while making impressions of others. You will be asked to watch four short video clips and provide ratings of these individuals. You will also be asked to complete a variety of questionnaires. This entire process is expected to take approximately 1 hour; however, actual time may vary to some extent. If you would like to participate, simply accept this Human Intelligence Task and follow the web link. You will need to indicate your Worker Identification Number to receive payment. Additionally, to receive payment you will have to complete at least 80% of the task AND have a pass rate of at least 80% on

attention checks embedded in this task. Thank you for considering participating in this research.

After consenting to participate, the participants first completed self-reports on the TIPI, SVSS, MAAS-state, and PANAS-state. Blocks were created of four target videos chosen at random from the pool of 209 videos which varied in the targets' level of trait mindfulness. The judges were randomly assigned video blocks to view and rate, and each block was viewed by 10 judges. Other report versions of the MAAS-trait, BFI-2, SVS, and SWL were completed for each of the four targets following each video in the block. After watching and rating all four videos, judges again completed self-report measures of the PANAS-state and the MAAS-state, to determine if watching the videos was related to a change in mood or state mindfulness. Demographics were assessed last and participants were debriefed and thanked.

State Mindfulness and Affect Change of Judges

The judges ratings of state mindfulness and state affect at the beginning and end of the study were compared (see Table 4). The first rating of state mindfulness was significantly higher than the second rating at the end of the study (M_{diff}=.19, SD=.98, 95% CI [.04, .34]), $t(536)=4.40$, $p<.0001$, d=.15. State positive affect was significantly

Table 4

Study 1 Judges: MTurk Sample Self-Reported Traits, Values, State Mindfulness & Affect

	Attrition Group	**Judges Group**	***t***	***p***	***d***
N	1093	539			
	M (SD)	***M (SD)***			
Openness to Experience	5.11(1.51)	5.37(1.31)	-3.42	0.001	0.18
Self-direction	5.86(1.94)	6.15(1.7)	-2.94	0.003	0.16
Benevolence	5.94(2.02)	6.19(1.84)	2.31	0.021	0.13
Universalism	5.24(2.20)	5.48(2.15)	-1.95	0.051	0.11
Hedonism	4.29(2.23)	4.06(2.26)	1.83	0.067	0.10
State Mindfulness T1	1.21(1.46)	0.89(1.21)	4.62	0.0001	0.24
State Positive Affect T1	30.24(9.12)	30.43(9.14)	0.40	0.69	0.02
State Negative Affect T1	16.13(8.68)	14.09(6.78)	5.09	0.0001	0.26

Self-Reported States of Judges

	Time 1	**Time 2**	***t***	***p***	***d***
State Mindfulness Change	5.10(1.21)	4.92(1.29)	4.4	0.0001	0.14
State PA Change	30.25(9.14)	26.91(9.99)	12.57	0.0001	0.35
State NA Change	14.06(6.75)	14.65 (7.22)	3.18	0.002	0.08

Note . T1=Time 1, PA= positive affect, NA= negative affect

higher at the beginning of the study than at the end of the study (M_{diff}=3.34, SD_{diff}=.85, 95% CI [2.20, 4.48]), $t(535)=12.57$, $p<.0001$, $d=.35$. State negative affect was significantly lower at the beginning of the study than at the end of the study (M=.59, SD=.48, 95% CI [.25, 1.43]), $t(536)=-3.19$, $p=.02$, $d=.08$.

Analytic Approach

Accuracy Criterion. An accuracy criterion for each item and target was calculated by taking an aggregate of all peer ratings of each target for each trait and value item, and then aggregating the averaged peer scores with the self-ratings for each trait and value item. Using an accuracy criterion is preferred to self-other agreement or

consensus as it includes more perspectives on what the target is like than only the self or the peer ratings (Funder, 2012). Internal reliability of the acquaintance ratings of the targets' personality traits was (*M*=.46, *SD*=.27, Range= -.30 - .87) and of the targets' values was (*M*=.37, *SD*=.19, Range= -.19 - .75). After correlating the composite peer ratings of the target with the self-reports, the average self-other agreement for personality traits was of moderate strength (*M*=.51, *SD*=.21, 95% CI[.48, .54]), as was the average self-other agreement for personal values (*M*=.46, *SD*=.19, 95% CI[.43, .49]).

The Social Accuracy Model. The Social Accuracy model (SAM; Biesanz, 2008) is a multi-level model used to simultaneously estimate normative and distinctive accuracy for both the judge and the target, as well as variability of normative and distinctive accuracy. The unit of analysis in this model is the judge-target pairing across several traits or several items assessing a single trait (Biesanz, 2008). A multi-level model is required for this study to account for the nesting of trait or value items within judges who rated multiple targets, and targets who were rated by multiple judges.

Recall that normative accuracy refers to judgments of a target as similar to the average person. It also reflects how positively the target is judged by others in that a more normative profile is also a more positive profile. The normative profile is computed by averaging all of the targets' accuracy criterion ratings on each item. The average set of scores across all items is the normative profile for that measure/characteristic. The normative profile is compared to the judges' ratings of each target to determine normative accuracy.

Distinctive accuracy refers to judgments of an individual as unique from the average person and as unique from other individuals. It also entails the ability of the

judge to correctly distinguish individual traits within a person. The distinctive profile is computed by removing by subtraction the average normative profile score from the accuracy criterion scores for each target, leaving the unique profile for that target. The distinctive profile is used as a second predictor of the judge's ratings to determine distinctive accuracy.

In tandem with normative and distinctive accuracy, there are two other ways to decompose accuracy: perceptive and expressive. Perceptive accuracy is how well the judge makes personality assessments across targets, as compared to the accuracy of other judges. Normative perceptive accuracy is how well the judge perceives someone as similar to the average person, and distinctive perceptive accuracy is how well the judge perceives the unique attributes of a person that distinguish him or her from the average (Biesanz, 2008; Human, 2009). Expressive accuracy refers to how accurately a target's characteristics are judged by others on average. Normative expressive accuracy refers to how similarly a target's characteristics are judged in comparison to those of the average person, and distinctive expressive accuracy refers to how well the unique characteristics of the target can be judged by others (Biesanz, 2008; Human, 2009).

Because both the judge and the target and their interaction as a judge-target dyad are included in the model, SAM takes into account the variability of perceptive normative and distinctive accuracy across judges and expressive normative and distinctive accuracy across targets, through examination of the residual variances of the judges, targets, and the judge-target pairings (Biesanz, 2008). Expressive accuracy of the target is especially important in this study, because the focus of the research question

is on how the target is perceived by others and the possibility of improving the ability of being perceived accurately.

Impressionistic Accuracy. This first model examines impressionistic accuracy (or the raw profile correlation between the accuracy criterion and the judges ratings) of the judges perception of the targets (Biesanz, 2008). Impressionistic accuracy may randomly vary across judges and targets. SAM uses the unstandardized regression equation to represent the relationship between the judge's perception and the accuracy criterion of the target:

$$Y_{jti} = \beta_{0jt} + \beta_{1jt}TCrit_{ti} + \varepsilon_{jti} \quad 1.1$$

In the case of the current studies, Y_{jti} is judge *j*'s ratings on target *t* on item *i*, based on 60 trait items from the BFI-2 and 56 value items from the SVS[4] . $TCrit_{ti}$ is the accuracy criterion for target *t* on item *i* (i.e., the average of acquaintance ratings and self-ratings). β_{0jt} is the intercept and represents the average predicted value of judge j's ratings of target *t*, interpreted with the mean-level of $TCrit_{ti}$ when the variables are mean-centered. β_{1jt} represents the average increase in a rating for 1 unit of increase in the accuracy criteria for all of the trait or value items across all judges and targets. ε_{jti} represents the error term.

Distinctive and Normative Accuracy. The second model includes $Mean_i$, which is the average of all targets' self- reports on each trait or value item. Including this term separates distinctive and normative accuracy[5].

$$Y_{jti} = \beta_{0jt} + \beta_{1jt}TCrit_{ti} + \beta_{2jt}Mean_i + \varepsilon_{jti} \quad 2.1$$

[4] Fifteen mindfulness (MAAS) items and five satisfaction (SWL) items were also rated, but not included in the current analyses.

[5] Sample R script for this equation: model1<-lmer(BFI_Rating ~ 1 + ACvalue + BFI_NormValue + (1 + ACvalue + BFI_NormValue | Target) + (1 + ACvalue + BFI_NormValue | JudgeID), data = mydata)

$$\beta_{0jt}=\beta_{00}+u_{0j}+u_{0t}+u_{0(jt)}$$
$$\beta_{1jt}=\beta_{10}+u_{1j}+u_{1t}+u_{1(jt)} \quad 2.2$$
$$\beta_{2jt}=\beta_{20}+u_{2j}+u_{2t}+u_{2(jt)}$$

Y_{jti} is judge *j'*s rating of target *t* on item *i*, $TCrit_{ti}$ is the accuracy criteria computed for target *t* on item *i* on the BFI or SVS, as in the previous equation. Both $TCrit_{ti}$ and $Mean_i$ are mean centered before the analyses, thus for the judge *j*-target *t* dyad, β_{0jt} is the average predicted value of judge *j*'s ratings of target *t* on item *i* when $TCrit_{ti}$ and $Mean_i$ are at their mean levels. $Mean_i$ is also subtracted from $TCrit_{ti}$, thus representing how the accuracy criteria for each item differs from the average for that same item.

The unstandardized coefficient β_{1jt} now represents distinctive accuracy for judge *j* with target *t* (the level of accuracy after holding constant $Mean_i$). β_{1jt} is the mean level of distinctive accuracy across the 60 personality items or 56 personal value items, controlling for the normative profile. β_{2jt} represents the mean level of normative accuracy (the association between the judge's ratings and the average person's profile), controlling for the distinctive profile. Using SAM, this two-predictor unstandardized regression equation is estimated for each judge-target dyad, within a multilevel model that accounts for the nesting of targets within judges and judges within targets.

For equation 2.2, $u_{0j,}$ $u_{0t,}$ and u_{0jt} represent the random intercepts for the judge, the target, and the judge-target pair, respectively. The error terms u_{1j} and u_{2j} are random slopes that represent the residual variance for the judge on distinctive accuracy and normative accuracy, respectively. The error terms u_{1t} and u_{2t} represent the residual variance for the target on distinctive accuracy and normative accuracy. Finally, u_{1jt} and u_{2jt} represent the residual variance for the judge-target pairing on distinctive accuracy and normative accuracy.

Moderators of accuracy can be tested within SAM by entering them into the model with the accuracy criteria and the normative profiles either as continuous interaction terms or with the use of dummy codes (0, 1) or effect codes (-1, 1) to represent dichotomous variables. The use of dummy coding allows for the interpretation of the regression coefficient as the average for a single group. With the use of effect coding, the interpretation of the coefficient is the average for all participants, allowing for the correct interpretation of main effects and interactions. The hypotheses for the current dissertation were tested with SAM in the following ways:

Hypothesis 1 – overall trait mindfulness. To test the prediction that trait mindfulness would predict both distinctive and normative accuracy, TM_t indicates the level of self-reported mindfulness of the target and is added to equations 3.1 and 3.2 as an interaction term.

Hypothesis 1a– high/low mindfulness. High and low mindfulness groups were created based on the top and bottom thirds of the sample on the MAAST-self scores. Analyses predicting normative and distinctive accuracy from high and low mindfulness groups were conducted. To test the prediction that distinctive and normative accuracy would be higher when viewing videos of individuals high in trait mindfulness than individuals low in trait mindfulness, low and high mindfulness were dummy coded as 0 = low mindfulness and 1 = high mindfulness. TM_t indicates the level of trait mindfulness of the target in the following equations:

$$Y_{jti}=\beta_{0jt} + \beta_{1jt}TCrit_{ti} + \beta_{2jt}Mean_i + \varepsilon_{jti} \quad (3.1)$$

$$\beta_{0jt} = \beta_{00} + \beta_{01}TM_t + u_{0j} + u_{0t} + u_{0(jt)}$$

$$\beta_{1jt} = \beta_{10} + \beta_{11}TM_t + u_{1j} + u_{1t} + u_{1(jt)} \quad (3.2)$$

$$\beta_{2jt}= \beta_{20} + \beta_{21}TM_t + u_{2j} + u_{2t} + u_{2(jt)}$$

Hypothesis 2. To test the prediction that the relations between trait mindfulness and distinctive and normative accuracy would be moderated by the psychological adjustment of the target, PWB_t represents the psychological adjustment of the target in the following equations:

$$Y_{jti}=\beta_{0jt} + \beta_{1jt}TCrit_{ti} + \beta_{2jt}Mean_i + \varepsilon_{jti} \quad (4.1)$$

$$\beta_{0jt}= \beta_{00}+ \beta_{01}TM_tPWB_t+u_{0j}+u_{0t}+u_{0(jt)}$$

$$\beta_{1jt}= \beta_{10}+ \beta_{11}TM_t\ PWB_t+u_{1j}+u_{1t}+u_{1(jt)} \quad (4.2)$$

$$\beta_{2jt}= \beta_{20}+ \beta_{21}TM_tPWBj_t+u_{2j}+u_{2t}+u_{2(jt)}$$

Study 1 Results

Reliability of Accuracy Scores

Reliabilities of the accuracy scores of trait or value judgments were calculated as the variance across the normative or distinctive accuracy scores of the individual targets divided by the random effects variance for targets of either normative or distinctive accuracy. For the Study 1 judgments of personality traits, the reliability of normative accuracy scores was .85, and the reliability of distinctive accuracy scores was .83. For judgments of personal values, the reliability of normative accuracy scores was .73, and the reliability of distinctive accuracy scores was .60.

Normative and Distinctive Accuracy

When examining different types of accuracy without moderators, normative accuracy, b=.48, p<.0001, and distinctive accuracy, b=.07, p<.0001, were significant for judgments of personality traits. Normative accuracy, b=.45, p<.0001, and distinctive

accuracy, *b*=.07, *p*<.0001, were also significant for judgments of personal values when the average self-ratings were used as the normative profile[6].

Trait Mindfulness as a Moderator of Accuracy

Continuous. To answer the question of whether trait mindfulness of the target (TM) moderated normative and distinctive accuracy of judgments of personality traits and personal values, trait mindfulness scores of the targets (see Table 5) were entered into the model. For judgments of personality traits, normative accuracy was not moderated by target TM, *b*=0.01, *p*=.64, but distinctive accuracy was, *b*=.03, *p*=.03. Greater distinctive accuracy of traits was associated with higher levels of target trait mindfulness. For judgments of personal values, trait mindfulness did not moderate either normative accuracy, *b*=.-01, *p*=.56, nor distinctive accuracy, *b*=-0.008, *p*=.44.

Mindfulness Groups. To answer the question of whether normative and distinctive accuracy of judgments of personality traits and personal values would be moderated by different levels of trait mindfulness, the trait mindfulness scores were separated into high, medium, and low groups based on the top, middle, and bottom thirds of the TM scores (see Table 5). Only the targets in the high and low mindfulness groups were included in the analyses. High and low trait mindfulness groups were entered into the model as "0" for low trait mindfulness and "1" for high trait mindfulness. Normative accuracy was not moderated by the trait mindfulness group for trait judgments, *b*=-.01, *p*=.89, however, distinctive accuracy was moderated by the trait

[6] The results reported for accuracy of values included the self-ratings for the normative profile because judgments of values by acquaintances are not as accurate as those of traits. Including the acquaintance judgments in the normative profile may have artificially made it more similar to the ratings of the unacquainted judges. For the results regarding personal values using the average of the accuracy criteria and the average of other-ratings as the normative profile, please see Table 5 for Study 1 and Table 7 for Study 2.

mindfulness group for personality trait judgments at a marginally significant level, *b*=.04 *p*=.07, with greater distinctive accuracy for the high mindfulness group than the low mindfulness group. The trait mindfulness group did not significantly moderate normative accuracy, *b*=-03, *p*=.36, or distinctive accuracy, *b*=-.03, *p*=.19, of judgments of the targets' personal values.

Psychological Well-Being as a Moderator of Trait Mindfulness and Accuracy

To answer the question of whether psychological well-being (PWB) of the target would moderate the relationship between overall target trait mindfulness and normative and distinctive accuracy, the overall PWB scores of the targets were also entered into the model as a third interaction term with TM scores and the accuracy criteria and normative profiles. For normative accuracy of judgments of personality traits, there was a three-way interaction with TM and PWB of the target, *b*=-.08, *p*=.03. However PWB did not moderate the association between TM and distinctive accuracy, *b*= .02, *p*=.31. The analysis was also run with TM group in place of overall TM in the model, which also revealed that the relationship between group TM and normative accuracy was moderated by PWB of the target at a marginal level, *b*=-.13, *p*=.08, but it did not moderate the relationship for distinctive accuracy of trait judgments, *b*=.04, *p*=.23.

To further explore this three-way interaction, trait mindfulness groups were examined separately in three different models with PWB as a moderator of the association between normative accuracy and trait mindfulness and the association between distinctive accuracy and trait mindfulness. PWB did not significantly moderate

Table 5

Study 1 Normative and Distinctive Accuracy, and Moderators for Personality Traits and Values

Personality Traits

	Accuracy with Acc Crit Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.48**	**0.02**	**<.0001**	**0.07**	**0.01**	**<.0001**
Mindfulness Practice	-0.003	0.05	0.95	0.003	0.03	0.90
TM Scores	0.01	0.03	0.64	**0.03**	**0.01**	**0.03**
TM Group	-0.01	0.05	0.81	**0.04**	**0.02**	**0.04**
TM Scores by PWB	**-0.08**	**0.04**	**0.03**	0.02	0.02	0.31
TM Group by PWB	-0.13	0.07	0.09	0.06	0.03	0.08
Low TM by PWB	0.06	0.04	0.14	-	-	-
Mean TM by PWB	0.002	0.06	0.98	-	-	-
High TM by PWB	-0.04	0.06	0.55	-	-	-
PWB Scores	0.03	0.03	0.32	0.01	0.01	0.36

Personal Values

	Accuracy with Acc Crit Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.56**	**0.02**	**<.0001**	**0.08**	**0.008**	**<.0001**
Mindfulness Practice	0.003	0.04	0.94	**0.05**	**0.02**	**0.03**
TM Scores	-0.006	0.02	0.78	-0.001	0.01	0.90
TM Group	-0.02	0.03	0.53	-0.02	0.02	0.26
TM Scores & PWB	-0.04	0.03	0.12	-0.001	0.02	0.94
TM Group & PWB	-0.08	0.05	0.12	-0.007	0.03	0.83
PWB Scores	-0.03	0.02	0.27	0.008	0.01	0.50

Personal Values

	Accuracy with Self Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.45**	**0.02**	**<.0001**	**0.07**	**0.001**	**<.0001**
Mindfulness Practice	0.02	0.04	0.64	0.04	0.02	0.07
TM Scores	-0.01	0.02	0.56	-0.008	0.01	0.44
TM Group	-0.03	0.03	0.36	-0.03	0.02	0.19
TM Scores & PWB	-0.04	0.03	0.12	-0.002	0.02	0.92
TM Group & PWB	-0.07	0.05	0.13	-0.003	0.03	0.92
PWB Scores	-0.02	0.02	0.32	0.007	0.01	0.59

Personal Values

	Accuracy with Acquaintance Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.53**	**0.02**	**<.0001**	**0.06**	**0.009**	**<.0001**
Mindfulness Practice	0.005	0.04	0.89	**0.05**	**0.02**	**0.02**
TM Scores	-0.005	0.02	0.79	-0.002	0.01	0.79
TM Group	-0.02	0.03	0.53	-0.02	0.02	0.26
TM Scores & PWB	-0.04	0.03	0.10	0.002	0.02	0.90
TM Group & PWB	-0.08	0.05	0.12	-0.007	0.03	0.83
PWB Scores	-0.02	0.02	0.34	0.006	0.01	0.63

Note . TM= trait mindfulness of the target, PWB = psychological well-being of the target. **Bold** = statistically significant

accuracy was different for the high and low mindfulness groups. For the high mindfulness group, the association between PWB and normative accuracy of traits was negative, such that when trait mindfulness was high, normative accuracy decreased as PWB increased, and normative accuracy increased as PWB decreased. For the low mindfulness group, the association between PWB and normative accuracy was positive, such that when trait mindfulness was low, normative accuracy increased as PWB also increased, and normative accuracy decreased as PWB decreased.

For personal values there were no significant 3-way interactions for normative or distinctive accuracy. The association between normative accuracy of judgments of personal values and TM was not moderated by the PWB of the target, b=-.04, p=.12, and the association between distinctive accuracy of personal values and TM was also not moderated by the PWB of the target, b=-.0002, p=.92. The association between accuracy of personal values and TM group (high or low) was also not moderated by PWB of the target for normative accuracy, b=-.07, p=.13, or distinctive accuracy, b=-.003, p=.92.

Study 1 Discussion

It was expected that the trait mindfulness of targets would moderate how accurately the personality traits and personal values of individuals would be judged by others who had viewed videos of the targets talking about various life experiences. The prediction was confirmed for distinctive accuracy of personality traits, but not for normative accuracy of personality traits or either kind of accuracy for personal values. It was also predicted that the personality traits and personal values of targets high in trait mindfulness, based on the top third of self-ratings on the MAAST, would be more accurately judged than those of targets low in trait mindfulness, based on the bottom third of the self-ratings. The prediction was confirmed for distinctive accuracy of personality trait judgments with marginal significance, but it was not confirmed for normative accuracy of personality trait judgments, or for either kind of accuracy of judgments of personal values.

The results regarding higher distinctive accuracy of more mindful targets are consistent with those of previous research regarding positive associations between trait mindfulness and self-awareness (Carlson, 2013). The targets may have had reduced barriers to self-awareness regarding their own positive and negative traits due to their level of mindfulness, which led to greater availability of relevant cues contributing to being judged more accurately on their distinctive traits. The findings from the current study also imply that individuals higher in trait mindfulness may share some of the same characteristics with individuals who are good judges, such as self-awareness, consistency, and congruency in behavior, which is consistent with research regarding trait mindfulness (Brown & Ryan, 2005) and good judges (Human & Biesanz, 2013).

In addition, the prediction that psychological adjustment of the target would moderate the relationship between overall trait mindfulness and accuracy was partially confirmed for normative accuracy of traits. When trait mindfulness was divided into high and low groups, psychological adjustment moderated the association between trait mindfulness and normative accuracy of trait judgments at a marginally significant level. When the three levels of trait mindfulness (high, medium, and low) were examined separately, none of the interactions with PWB and normative accuracy were significant. However the direction for the association at the high level of trait mindfulness was positive, the association at the medium level of trait mindfulness was essentially zero, and the association at the low level of trait mindfulness was negative. Therefore, normative accuracy decreased at a high level of trait mindfulness when PWB increased, and normative accuracy increased as PWB decreased. Conversely, normative accuracy increased at a lower level of trait mindfulness as PWB increased, and normative accuracy decreased as PWB also decreased.

For distinctive accuracy of trait judgments, there was no significant interaction overall with trait mindfulness and PWB, suggesting that distinctive accuracy was moderated by trait mindfulness alone and was not associated with the level of PWB of the targets. It appears that the attention and awareness aspect of mindfulness is what led to the greater availability of unique cues and not the psychological well-being aspect. In addition, PWB did not moderate the association between trait mindfulness and either type of accuracy of personal value judgments, which did not confirm the hypothesis.

Regarding unique personality traits, higher levels of dispositional mindfulness of the target seems to improve judgability of that individual. Regarding how the traits of

an individual are judged as being similar to those of an average person, it appears that higher levels of trait mindfulness and psychological well-being together do not improve judgability. Possessing high levels of both trait mindfulness and psychological well-being decreases the accuracy with which one is judged by a stranger as being like the average person. As normative accuracy is associated with being perceived more positively, being judged with less normative accuracy implies that the target is perceived in a more negative way. However, it could also imply, based on the non-judgmental aspect of mindfulness, that targets are perceived in a more genuine or authentic way. In accordance with RAM (Funder, 2012), these findings suggest that cues relevant to the unique traits of the individuals higher in trait mindfulness are more available than those of individuals lower in trait mindfulness. The availability of cues may be due to the greater consistency shown across roles for those higher in trait mindfulness as well as greater congruency between what mindful people say and what they do. Individuals higher in dispositional mindfulness may not be trying to hide who they "really are." These ideas are consistent with the findings of Carlson (2013) regarding mindfulness and increased self-awareness.

Another reason for the findings regarding normative accuracy is that the individuals higher in both trait mindfulness and psychological well-being may have been less normative overall. The normative profile of the sample of targets was rather homogeneous in age, gender, ethnicity, and religion and those higher in trait mindfulness may have not fit this profile. Different results may be found for how accurate these individuals are judged with the use a broader normative profile more representative of

the rest of the country, or more representative of people with high levels of trait mindfulness.

Implications

The findings have implications for the field of mindfulness by adding another benefit to the large number of psychological benefits currently associated with mindfulness. The findings confirm those of other studies that mindfulness is associated with overall psychological well-being (Baer et al., 2008, Brown & Ryan, 2003; Keng et al., 2011; Van Dam et al., 2009). The current findings may also reflect another aspect of trait mindfulness in that mindful individuals are more consistent in their behavior across roles. Targets higher in trait mindfulness in the current study may provide more consistent cues about their uniqueness to others (both strangers and acquaintances), whether their distinctive traits are positive or negative. Mindful targets also may provide more cues about who they are in general. The research further implies that those higher in psychological well-being and trait mindfulness provide less stereotypic cues about both their unique positive and negative characteristics. Instead of hiding relevant cues to more negative traits, the cues for both positive and negative traits of the mindful targets are available for the judge to detect and utilize.

Thus, it appears that mindfulness as a trait contributes to being more accurately understood by others. Although not tested specifically in this study, previous findings in the field of mindfulness research indicate that trait mindfulness can be increased through mindfulness practice (Nyklicek & Kuipers, 2008). It can be assumed that mindfulness practice could potentially increase a person's judgability. This is important because humans are social beings who have the psychological need of relatedness (Ryan & Deci,

2000), part of which involves the need to be understood by others in one's social group. The need of relatedness could partially be met through being more judgable, thus potentially leading to greater psychological well-being.

The findings have greater implications for the field of accuracy of personality judgment research, as mindfulness practice may be one of the first effective means of improving judgability, or how accurately people are perceived by others. On the side of the judge, techniques to improve one's perceptions of others can be inferred from RAM and from research regarding the good judge, such as making others more comfortable during interactions (Letzring, 2008), paying closer attention to relevant cues regarding the target (Funder, 1995; 1999), and learning to notice if one's judgment is really of the self instead of the person that is being perceived, which can prevent the correct utilization of cues (Beer & Watson, 2008). However, it is important to keep in mind that the findings regarding manipulations to increase accuracy of judging others are mixed and are not always successful (Colman, unpublished thesis; Human & Biesanz, 2010). Less intuitive, although still important, are ways to improve how one is perceived by others. Growing one's mindfulness skills through mindfulness meditation may be an effective way of improving judgability by increasing psychological well-being, self-awareness, and consistency of the display of one's genuine and unique characteristics. Among the many ways that mindfulness is used in therapy, it can also help people with their social and professional relationships if they are struggling in their varying roles to be understood and struggling with their relationships in general. Increasing mindfulness and PWB could be a way to appear less stereotypic and more transparent to others and improve relationships. Conversely, if someone does not want to be accurately perceived

by others and wants to hide who they really are, mindfulness and increasing PWB may not be something that he or she would want to pursue. In addition, there may be a downside to increasing trait mindfulness if it leads to being more negatively perceived by others because it implies that other individuals will not see the target as favorably.

Beyond finding what was partially expected regarding accuracy of trait judgments, the findings that personal values were not judged more or less accurately for targets at different levels of trait mindfulness or psychological well-being are of great interest. There may be several reasons for these results. Although targets higher in trait mindfulness and psychological well-being may know who they are and express openly their own genuine and unique aspects in a consistent way across contexts, their personal values may not be as available to them or as consistent as their traits. The targets higher in trait mindfulness may be in the process of clarifying their values (which is especially likely in a college-age sample), thus they may not be as sure of their *real* values as they are about their traits. In addition, mindful targets may not be as concerned with the consistency of their values as they are with the consistency of their traits. Thus, more mindful targets may not provide additional consistent cues than less mindful targets. This question could be examined with the preference for consistency scale in a future study. In addition, even if mindful targets are more aware of their values than those who are less mindful, the awareness does not contribute to the availability of cues. The self-awareness aspect of trait mindfulness is associated with the trait of openness-to-experience (Hanley, 2016), thus it could be that what motivates or guides individuals higher in TM is not *set in stone* and is more flexible than those lower in TM, because

they may be more open to changing their values dependent upon the situation (Shapiro, 2005).

Limitations

One limitation of the study is that the target-videos were judged by MTurk workers unsupervised on their own computers in an uncontrolled environment. The judges who completed the study and were included in the analyses did pass 80% of attention checks embedded into the study, but it is unknown how much attention the judges actually paid to watching the videos and answering the questions. In addition, each video was followed with several other-report questionnaires and the task was fatiguing to several participants (as indicated by emails received from several MTurk workers). The number of questions following the videos may also have created too great of a cognitive load for the judges to make as accurate of judgments as possible. However, the limitation may not have been a problem in the current study - because the measures were counterbalanced when the survey was administered online. Future research could examine accuracy of trait and value judgments in a between-subjects design as opposed to the within-subjects design of the current study to reduce the number of items the judges would be required to rate in one sitting.

Although the findings regarding accuracy of judging traits were promising, they are correlational. It is unclear if being more accurately judged on one's unique traits leads to increased trait mindfulness or the other way around. Since the direction of this relationship is unknown, there may be an issue with actively pursuing improvement of a skill such as judgability through mindfulness, which may actually be a by-product of something else unknown. Previous accuracy research has shown that when judges

actively try to be better judges, they do not always improve accuracy of their judgments (Biesanz & Human, 2010; Colman, unpublished thesis). If targets actively increase their levels of mindfulness, it is yet unclear whether or not they will improve their judgability. Perhaps the increased judgability is a by-product of trait mindfulness or of psychological well-being overall. It is also unclear if someone has the intention of becoming more judgable when practicing mindfulness that he or she will actually become more judgable. To add clarity to the direction of the findings, another study was conducted with an experimental design where induced state mindfulness of the targets was manipulated.

Chapter V

Study 2

Method

Accuracy Ratings

For Study 2, mindfulness practice of the targets again did not moderate normative or distinctive accuracy for judgments of traits or of values (see Table 7). Thus, all of the eligible targets were used in the analyses, regardless whether they engaged in mindfulness practice on their own.

Participants (Judges). Three-hundred fifty-seven undergraduate students were recruited through the Psychology department's participant pool to rate their own personality characteristics, watch videos, and rate characteristics of targets in the videos.

Each judge rated six targets, thus a minimum of 350 judges was required to rate 205 targets. Approximately half of the sample (N=178) completed the survey online and half (N=179) completed the survey in the lab. Fifty-four judge-participants started, but

did not complete the study. Twenty-six participants completed self-reports only, 15 of which also made some ratings of the targets, and 28 opened the survey but did not consent to participate. Thirty-six participants who completed the study had either time constraints, internet connectivity issues, or technical difficulties with the survey which required them to repeat the survey between 1-5 times[7]. Of those who completed the study (see Table 6), all participants passed at least 80% of attention checks. The sample was 22.91 years old on average (*SD*=6.20, Range=18-55) and was 26.6% male and 72.8% female (.6% unknown). Regarding ethnicity, the sample identified as 80.1% white/Caucasian, 12% Hispanic/Latino, 2% African American, 3.4% Asian/Pacific Islander, and 2.5% other ethnicities. In terms of religion, 17.1% of the sample identified as Christian, 10.9% Catholic, 20.7% LDS, 7.9% other, 40% no religion, and 3.4% did not answer.

Measures. Many of the same measures from the stimulus creation were used, including other-report versions of the MAAS- trait, BFI-2, SVS, SWL, and self-report versions of the MAAS-state and the PANAS-state. The TIPI and SVSS were added as brief measures of the judges' personality traits and personal values.

Procedure. Participants (judges) either came to the lab or were directed to a survey website to complete self-report versions of the TIPI, SVSS, PANAS-state and MAAS-state on computers.

Blocks of six 2-4-minute target videos (three videos from the mindfulness induction condition and three from the unfocused attention control condition, presented

[7] Judgments from the partial repeats were not included in the analyses. Judges were typically assigned by the website to the same condition and saw the same videos each time they repeated the study. There was no consistency between judges in how much of the study was completed before they started over.

in random order) were created from the pool of 205 videos, and each block was viewed and rated by 10 judges. Each judge was randomly assigned to one block to view and rate. After viewing each video, the judges completed other-report versions of the BFI-2, SVS, SWL, and MAAS-trait for the corresponding targets. After viewing and rating all six videos, participants completed post self-report surveys of the PANAS-state, MAAS-state, and a demographics measure.

Analytic Approach. The data were analyzed following the same general pattern as in Study 1.

Hypothesis 3. To test the prediction that distinctive and normative accuracy of judging personality traits and personal values would be higher when viewing videos of individuals who had a received a mindfulness induction than those in the control condition, the mindfulness condition is indicated by $Cond_{jt}$ in equations 5.1 and 5.2. Condition was effect coded as -1 = unfocused attention instructions and 1 = mindfulness meditation instructions.

$$Y_{jti}=\beta_{0jt} + \beta_{1jt}TCrit_{ti} + \beta_{2jt}Mean_i + \varepsilon_{jti} \quad (5.1)$$

$$\beta_{0jt}= \gamma_{00}+ \gamma_{01}Cond_{jt} + u_{0j}+u_{0t}$$

$$\beta_{1jt}= \gamma_{10}+ \gamma_{11}Cond_{jt} + u_{1j}+u_{1t} \quad (5.2)$$

$$\beta_{2jt}= \gamma_{20}+ \gamma_{21}Cond_{jt} + u_{2j}+u_{2t}$$

Hypothesis 4. To test the prediction that the relations between mindfulness meditation and accuracy would be moderated by the induced state mindfulness resulting from the intervention, induced state mindfulness as measured by the TMS was entered into the model as an interaction term. IM_t indicates the state mindfulness of the target from the composite scores on the TMS in the following equations:

$$Y_{jti}=\beta_{0jt} + \beta_{1jt}TCrit_{ti} + \beta_{2jt}Mean_i + \varepsilon_{jti} \quad 6.1$$

$$\beta_{0jt}= \gamma_{00}+ \gamma_{01}Cond_{jt}IM_t+u_{0j}+u_{0t}$$

$$\beta_{1jt}= \gamma_{10}+ \gamma_{11}Cond_{jt}IM_t+u_{1j}+u_{1t} \quad 6.2$$

$$\beta_{2jt}= \gamma_{20}+ \gamma_{21}Cond_{jt}IM_t+u_{2j}+u_{2t}$$

The curiosity and decentering factors of the TMS were also tested as moderators in the model as represented by C_t and D_t, respectively, in place of IM_t in equations 6.1 and 6.2.

Study 2 Results

Reliabilities of Accuracy Scores

Reliabilities of the Study 2 accuracy scores were calculated in the same manner as those for Study 1. For judgments of personality traits, the reliability of normative accuracy scores was .90, and the reliability of distinctive accuracy scores was .89. For judgments of personal values, the reliability of normative accuracy scores was .77, and the reliability of distinctive accuracy scores was .75.

State Mindfulness and State Affect of Judges.

State mindfulness of the entire sample was significantly higher for the Time 2 measurement at the end of the study than for the Time 1 measurement at the beginning of the study (see Table 6), (M_{diff}=1.31, SD_{diff}=1.05, 95% CI [.48, 2.14]), $t(351)=4.47$, $p<.0001$, $d=.22$. State negative affect of the entire sample was significantly higher at Time 2 than at Time 1 (M_{diff}=.85, SD_{diff}=.67, 95% CI [.23, .1.47]), $t(338)=4.29$, $p<.0001$, $d=.18$. State positive affect at Time 2 was significantly lower than at Time 1 for the entire sample (M_{diff}=4.55, SD_{diff}=.46, 95% CI [3.43, 5.67]), $t(338)=13.48$, $p<.0001$, $d=.56$.

Online versus Lab Samples.

The two samples were generally the same in terms of personality traits (see Table 6). Regarding values, the lab sample was significantly higher than the online sample on ratings of Achievement (M_{diff}=.35, SD_{diff}=.23, 95% CI [.14, .56]), t(352) =-2.09, p=.037, d=.22. The samples differed marginally on Self-direction, with the online sample scoring lower than the lab sample (M_{diff}=.33, SD_{diff}=.26, 95% CI [.001, .66]), t(353)=-1.97, p=.05, d=.21, and also differed marginally on Stimulation, with the online sample again scoring lower than the lab sample (M_{diff}=.35, SD_{diff}=.09, 95% CI [-..05, .74]), t(355)=-1.72, p=.09 d=.18.

In terms of state mindfulness, the online sample was less mindful than the lab sample at the beginning of the study (M_{diff}=1.57, SD_{diff}=.53, 95% CI [.77, 2.37]), t(354)=2.72, p=.007, d=.29. The online sample was also less mindful than the lab sample at the end of the study (M_{diff}=3.39, SD_{diff}=2.19, 95% CI [2.45, 4.33]), t(351)=5.02, p<.0001, d=.53.

In terms of state negative affect, there were no significant differences between the two groups at the beginning of the study (M_{diff}=.22, SD_{diff}=.26, 95% CI [-.51, .95]), t(346)=-.41, p=.68, d=.04), or at the end of the study (M_{diff}=.37, SD_{diff}=.71, 95% CI [-.27, 1.01]), t(345)=.81, p=.42, d= .09). However, for state positive affect, the online sample began the study lower than the lab sample (M_{diff}=2.46, SD_{diff}=.38, 95% CI [1.28, 3.64]), t(345)=-2.90, p=.004, d=.31). The online sample also ended the study lower in state positive affect than the lab sample (M_{diff}=2.77, SD_{diff}=.38, 95% CI [1.51, 4.03]), t(347)=-3.08, p=.002, d=.33).

Sample Type as Moderator of Normative and Distinctive Accuracy

In order to examine whether there were differences in normative and distinctive accuracy based on the type of sample, the sample type was entered into the model as "0" for the online sample and "1" for the lab sample (see Table 7). Normative accuracy, b=.12, p<.0001, and distinctive accuracy, b=.03, p<.001, of judgments of personality traits were both significantly moderated by the sample type, with the lab sample achieving greater normative and distinctive accuracy than the online sample. Normative accuracy, b=.12, p<.001, and distinctive accuracy, b=.03, p<.01, of judgments of personal values were also significantly moderated by the sample type, with greater normative and distinctive accuracy being achieved by the lab sample than the online sample.

Normative and Distinctive Accuracy

Examining components of accuracy in this sample, normative and distinctive accuracy were both significant for judgments of personality traits, b=.60, p=.0001 and b=.09, p=.0001, respectively. Normative and distinctive accuracy were also both significant for judgments of personal values, b=.66, p<.0001 and b=.09, p<.0001, respectively.

Table 6

Study 2 Judge Characteristics: Online and Lab Samples

	Online Group	**Lab Group**			
N	178	179			
	M (SD)	***M (SD)***	***t***	***p***	***d***
Age	22.67(5.90)	23.17(6.50)	-0.81	0.42	0.08
	N	***N***	***χ2***	***p***	-
Gender	-	-	2.02	0.36	
Male	47	48			
Female	128	131			
No answer	2	-			
Ethnicity	-	-	8.15	0.15	
white/caucasian	147	139			
hispanic/latino	19	24			
african american	3	4			
other	10	12			
Religion	-	-	2.5	0.78	
Christian	30	31			
Catholic	16	23			
LDS	39	35			
Other	13	15			
None	75	68			
No Answer	5	7			
	M (SD)	***M (SD)***	***t***	***p***	***d***
Trait-Openness to Experience	5.40(1.22)	5.80(1.05)	3.26	0.001	0.35
Value-Achievement	6.33(1.69)	6.68(1.46)	2.09	0.037	0.22
Value - Self-Direction	6.32(1.70)	6.65(1.44)	1.97	0.05	0.21
Value - Stimulation	4.95(1.95)	5.30(1.86)	1.72	0.086	0.18
State Mindfulness 1	4.81(1.14)	5.12(1.03)	2.72	0.007	0.29
State Mindfulness 2	4.37(1.47)	5.05(1.03)	5.02	0.0001	0.53
State PA 1	26.14(8.08)	28.60(7.70)	2.9	0.004	0.31
State PA 2	21.49(8.22)	24.26(8.60)	3.08	0.002	0.33
State NA 1	14.04(5.16)	14.26(4.67)	0.41	0.68	0.04
State NA 2	13.57(4.61)	13.20(3.90)	0.81	0.42	0.09

Full Sample Characteristics

	Time 1	Time 2	*t*	*p*	*d*
Overall State Mindfulness Change	4.97(1.10)	4.71(1.31)	4.47	0.0001	0.22
Overall State PA Change	27.37(7.95)	22.82(8.41)	13.48	0.0001	0.56
Overall State NA Change	14.22(4.96)	13.37(4.29)	4.29	0.0001	0.18

Notes. Full sample N=357

Mindfulness Condition as a Moderator

To answer the question of whether the mindfulness condition would moderate normative and distinctive accuracy of the targets' traits and values while controlling for trait mindfulness, the mindfulness condition was entered into the model using effect coding. The mindfulness instructions condition was entered as "1" and the unfocused attention condition was entered as "(-1)". For judgments of personality traits, mindfulness condition did not significantly moderate normative accuracy, *b*=-.006, *p*=.78, or distinctive accuracy, *b*=.02, *p*=.11. For judgments of personal values, the mindfulness condition also did not significantly moderate normative, *b*=-.01, *p*=.55, or distinctive accuracy, *b*=.006, *p*=.53 (see Table 7).

Induced State Mindfulness as a Moderator

To answer the question of whether the induced state mindfulness scores would moderate any relationship between accuracy and mindfulness condition, the overall induced mindfulness (IM) scores reported on the Toronto Mindfulness Scale (TMS) were entered as a continuous interaction term into the model in addition to the mindfulness condition. For personality traits, the relationship between normative

accuracy of personality traits and mindfulness condition was not moderated by IM of the

Table 7

Study 2 Normative and Distinctive Accuracy, and Moderators for Personality Traits and Values

Personality Traits

	Accuracy with Acc Crit Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.6**	**0.03**	**<.0001**	**0.14**	**0.01**	**<.0001**
Sample Type	**0.12**	**0.03**	**<.0001**	**0.04**	**0.01**	**<.0001**
Mindfulness Practice	0.004	0.06	0.95	-0.03	0.04	0.34
Condition	-0.005	0.02	0.82	0.01	0.01	0.25
Cond - Control TM	-0.005	0.02	0.82	0.01	0.01	0.25
Condition by IM	-0.03	0.03	0.36	-0.02	0.02	0.36
Cond by Curiosity	-0.03	0.02	0.22	-0.02	0.01	0.11
Cond by Decentering	-0.01	0.03	0.70	-0.001	0.02	0.98
Induced Mindfulness	0.02	0.03	0.43	-0.006	0.02	0.73

Personal Values

	Accuracy with Acc Crit Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.81**	**0.03**	**<.0001**	**0.10**	**0.01**	**<.0001**
Sample Type	**0.15**	**0.04**	**<.0001**	**0.03**	**0.01**	**0.005**
Mindfulness Practice	-0.04	0.05	0.44	0.008	0.03	0.78
Condition	0.02	0.02	0.24	0.007	0.01	0.46
Cond - Control TM	0.02	0.02	0.24	0.007	0.01	0.46
Cond by IM	0.0006	0.02	0.98	-0.003	0.01	0.81
Cond by Curiosity	-0.008	0.02	0.66	-0.006	0.01	0.62
Cond by Decentering	0.01	0.02	0.59	0.003	0.01	0.83
Induced Mindfulness	0.001	0.02	0.66	-0.02	0.01	0.16

Personal Values

	Accuracy with Self Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.66**	**0.02**	**<.0001**	**0.09**	**0.01**	**<.0001**
Sample Type	**0.12**	**0.03**	**<.001**	**0.03**	**0.01**	**0.005**
Mindfulness Practice	-0.02	0.04	0.55	0.001	0.03	0.97
Condition	-0.01	0.02	0.54	0.006	0.01	0.52
Cond - Control for TM	-0.01	0.02	0.54	0.006	0.01	0.52
Cond by IM	0.001	0.02	0.95	-0.002	0.01	0.87
Cond by Curiosity	-0.004	0.02	0.82	-0.004	0.01	0.73
Cond by Decentering	0.007	0.02	0.78	0.003	0.01	0.82
Induced Mindfulness	0.002	0.02	0.88	-0.02	0.01	0.17

Personal Values

	Accuracy with Acquaintance Normative Profile					
Moderators	Normative (*b*)	*SE*	*p*	Distinctive (*b*)	*SE*	*p*
None	**0.78**	**0.02**	**<.0001**	**0.08**	**0.01**	**<.0001**
Sample Type	**0.15**	**0.04**	**<.001**	**0.03**	**0.01**	**0.008**
Mindfulness Practice	-0.04	0.04	0.41	0.001	0.03	0.71
Condition	0.02	0.01	0.24	0.007	0.01	0.45
Cond - Control for TM	0.02	0.01	0.24	0.007	0.01	0.45
Cond by IM	-0.002	0.02	0.94	-0.003	0.01	0.81
Cond by Curiosity	-0.01	0.02	0.55	-0.005	0.01	0.67
Cond by Decentering	0.01	0.02	0.61	0.002	0.01	0.89
Induced Mindfulness	0.005	0.02	0.82	-0.02	0.01	0.24

Notes . TM= Trait Mindfulness of the target, IM= Induced Mindfulness scores, Curiosity= subscale of IM, Decentering=subscale of IM. **Bold** = statistically significant

target, *b*=-.03, *p*=.30. The relationship between distinctive accuracy of traits and mindfulness condition was also not moderated by IM of the target, *b*=-.01, *p*=.59.

For judgments of personal values, IM of the target did not moderate the relationship between the mindfulness condition and normative accuracy, *b*=.001, *p*=.95, or distinctive accuracy, *b*=.-002, *p*=.87.

Curiosity and Decentering Subscales of IM. Normative and distinctive accuracy of personality trait and personal value judgments were also examined with mindfulness condition and the curiosity and decentering subscales of IM as moderators.

Curiosity. For judgments of personality traits, curiosity scores did not moderate the association between mindfulness condition and normative accuracy, *b*=-.04, *p*=.18, or the association between mindfulness condition and distinctive accuracy, *b*=-.02, *p*=.22. For judgments of personal values, curiosity scores did not moderate the association between mindfulness condition and normative accuracy, *b*=-.004, *p*=.82, or the association between mindfulness condition and distinctive accuracy, *b*=-.004, *p*=.73.

Decentering. For judgments of personality traits, decentering scores did not moderate the relationship between mindfulness condition and normative accuracy, *b*=-.02, *p*=.65, or the relationship between mindfulness condition and distinctive accuracy, *b*=.005, *p*=.76. For judgments of personal values, decentering scores also did not moderate the relationship between mindfulness condition and normative accuracy, *b*=.007, *p*=.78, or the relationship between mindfulness condition and distinctive accuracy, *b*=.003, *p*=.82.

Induced Mindfulness as a Single Moderator

As an exploratory analysis, induced mindfulness scores were examined as a single moderator of accuracy without the inclusion of the mindfulness condition in the model[8]. Neither normative accuracy, *b*=.03, *p*=.36, nor distinctive accuracy, *b*= -.02, *p*=.32, of trait judgments were moderated by induced mindfulness scores alone. Likewise, normative accuracy, *b*=.002, *p*=.88, and distinctive accuracy, *b*=-.02, *p*=.17, of value judgments were not moderated by induced mindfulness scores alone (see Table 7).

Study 2 Discussion

It was expected that the experimental condition to which the targets were assigned would moderate normative and distinctive accuracy of judgments of personality traits and personal values, with higher levels of judgability resulting for targets in the mindfulness condition. The hypothesis was not confirmed by this study, as

[8] Examining the relationship between trait and induced state mindfulness scores between the two conditions, the mindfulness induction seemed to be more effective for people lower in trait mindfulness. *r*=-.27, *p*=.005. The low and medium TM groups were very similar in induced mindfulness in the mindfulness condition. In the unfocused control condition, TM was not related to state mindfulness. There was a moderate negative correlation for the curiosity subscale for targets in the mindfulness condition, *r*=-.28, *p*=.004, so perhaps those lower in mindfulness were more curious about what was happening than those higher in trait mindfulness.

the mindfulness condition did not moderate normative or distinctive accuracy for either trait or value judgments. Furthermore, it was expected that the induced mindfulness scores from the TMS measure would moderate any relationship between mindfulness condition and either type of accuracy for trait and value judgments. This hypothesis was also not confirmed, as induced mindfulness was not a significant moderator in the model. When induced mindfulness was separated into subscales of curiosity and decentering and entered as moderators of mindfulness condition and accuracy, they too were not significant. Induced mindfulness alone also did not predict judgability of traits or of values.

The manipulation check of induced state mindfulness revealed that the TMS scores from the mindfulness induction were significantly higher in the experimental condition than in the unfocused attention condition, indicating that the mindful induction was successful at creating differences in induced mindfulness between the conditions. However, the differences in overall induced mindfulness were due to differences in levels of the curiosity subscale, not in the decentering subscale of the measure, which is not consistent with previous research (Lau et al, 2006). It was expected that the decentering process (separating one's thoughts, feelings, and identity from the awareness in the present moment) was what would drive greater judgability due to an increased number of relevant cues made available by the target. The similarity in decentering between the two conditions may explain why the induction did not significantly increase judgability of targets in the mindfulness condition. The decentering factor may not have been increased for the mindfulness group as compared to the control group because they knew they would be expected to talk on camera about

their life experiences when the mindfulness induction was finished. Thus, the targets probably could not completely relax or distance themselves from their thoughts, feelings, and sense of self (Lau et al., 2006). If the targets in the mindfulness condition could have experienced decentering and simply focused on their raw experiences for 15-minutes, they may have presented themselves in such a way that made more relevant cues available about their negative as well as their positive traits in the videos. Future research where mindfulness practice is experienced by a target's own choice of time or setting, without the expectation of being video-recorded, could overcome this limitation.

Regarding the curiosity subscale, targets in the mindfulness group may have been more curious regarding the present-moment because they were continuously receiving instructions about awareness and non-judgment of the experience during the 15 minutes, which likely contributed to their curiosity of what was happening at that time. On the other hand, targets in the control group had nothing to keep their interest as they sat just with their own thoughts while watching the count-down of the remaining time on the computer screen. Additionally, each of the questions in the curiosity subscale specifically contain the word "curious", which could have primed the targets to respond that they were indeed curious. The decentering questions are more oblique about what is being assessed and may have been difficult for the targets unfamiliar with mindfulness concepts to understand.

The results of the current study are consistent with those of previous research regarding the effectiveness of a brief mindfulness induction at increasing overall state mindfulness as measured by the TMS (Lau et al., 2006). However the findings that the induction and state mindfulness did not predict judgability are also consistent with the

mixed findings on the effectiveness of a short mindfulness induction (Lau et al., 2006; Thompson & Waltz, 2007) on other outcomes. The TMS measure seems to assess subtle differences in mindfulness based on the type and amount of meditation experience, which was reflected in the current study.

In addition, regarding the type of short mindfulness induction used in the current study, some previous studies have found effects from a similar type of induction on outcomes. One study found participants experienced lower levels of negative emotion while viewing highly emotionally valenced photos after a mindfulness induction, as compared to participants who had been in an unfocused attention control (Arch & Craske, 2006). Other studies have not found significant effects from a short mindfulness induction as compared to control conditions on certain outcomes, such as the urge to smoke (Bowen & Marlatt, 2009) and working memory (Echon & Fulton, unpublished manuscript). The current study was able to successfully induce higher state mindfulness in the targets and the higher level of state mindfulness did not significantly predict increased judgability of traits or values, but the magnitude of the effect of state mindfulness was similar to the effects found in previous studies (Arch & Craske, 2006).

Another reason why there may have not been effects from the mindfulness intervention is that targets listened to mindfulness instructions without prior knowledge that they would be asked to do so before beginning the study, which was done to limit self-selection bias for mindfulness. Some of the targets who were experienced meditators expressed to the research assistants that they did not like to be asked to participate in a mindfulness induction without knowing about it before hand. Experienced meditators also expressed that they did not care for the type of meditation

in the instructions, as it was different from what they usually practice, which may have led to some of the targets tuning out or disregarding the mindfulness instructions. The dislike of the type of meditation may have made some targets frustrated instead of mindful. It is unknown if non-meditators enjoyed the type of meditation or not, because they did not express it one way or another.

Mindfulness programs specifically designed to increase the level of decentering may be more beneficial to increasing judgability because they may help individuals be more authentic and open regarding negative aspects about themselves. Furthermore, a longer duration of mindfulness practice may be required for any effects to be seen on the level of judgmental accuracy. Participation in a mindfulness program such as the 8-week MBSR course may provide mindfulness training that is at the right specificity and length to give targets ample opportunities to practice mindfulness meditation. With enough practice, the skill of decentering may be developed to increase one's judgability, but this connection still needs to be established.

Implications

The findings of the current study have implications for mindfulness research in that a single mindfulness session can create differences in state mindfulness from an unfocused control condition. However, the increase in mindfulness from the induction in the current study was at a low average level and may not be enough to increase judgability. This contributes to the mixed findings in the mindfulness literature regarding the effects of state mindfulness on other outcomes.

The findings also have implications for the Realistic Accuracy Model, such that certain states of the target, such as mindfulness, may not predict greater accuracy of

traits because being in that state does not make relevant cues of traits more available to the judge. Instead, increased self-awareness and a non-judgmental attitude regarding ones' cues from a long-term mindfulness practice or trait mindfulness may lead to greater consistency of cues being made available on a person's positive and negative traits.

In applied settings, the results of the study may be used in personal, clinical, and educational ways. It is important to know that although practicing mindfulness one time has many benefits, it may not be a panacea for all problems and the benefits of mindfulness may be overstated by the media (Van Dam, van Vugt, & Vago, 2017). Mindfulness is taught to children in elementary schools, implemented in corporations to promote well-being of employees, and used by clinicians and physicians to help with many physical and psychological problems (Van Dam, van Vugt, & Vago, 2017), but a one-time session may or may not be enough to bring about desired effects for students, clients, or patients. It may take more sessions and practice for the benefits of mindfulness to be manifested. Therefore, teaching mindfulness to individuals looking for cures for their problems should be done with a caution that it may take more than one session to see effects and with the encouragement to not give up on the practice.

Limitations

One limitation regarding the mindfulness induction is that the targets may have been put into a past time state shortly after listening to the mindfulness instructions when they were given the second set of interview questions to review, following completion of the state mindfulness measure. Targets were asked to think of three events in the past to prepare for the interview, which took between 30 seconds to 5

minutes to process, possibly negating any effect of the mindfulness induction as it removed them from that awareness of the present moment. Instead, targets shifted their thinking to their valenced life events from the past. In future research, this limitation could be avoided by turning the camera on immediately after the induction and asking participants how they were feeling at that moment instead of asking about the future or past.

Overall, a brief, single mindfulness induction does not appear to have an effect on making the state levels of traits and values of individuals' mostly unfamiliar with mindfulness more available to others. Thus participation in a one-time session of mindfulness does not increase a person's judgability by a stranger. Although the induction was successful in the current study, it was not strong, therefore practicing mindfulness for the first time in a lab setting in between video-recorded interviews is not the optimal situation to bring about a mindful state.

Chapter VI

General Discussion

The findings from Study 1 revealed that trait mindfulness of a target positively predicted distinctive accuracy of trait judgments made by strangers viewing videos of the individuals, but not of value judgments. Furthermore, high levels of both trait mindfulness and psychological well-being predicted lower levels of normative accuracy, while high trait mindfulness and low psychological well-being positively predicted normative accuracy. Low levels of both trait mindfulness and psychological well-being predicted lower levels of normative accuracy, while low trait mindfulness and higher psychological well-being predicted higher levels of normative accuracy. The findings

from Study 2 revealed that when targets participated in a brief mindfulness induction, their level of state mindfulness was higher than the targets who followed instructions for a period of unfocused attention. However, judgability of the traits and values of the targets did not differ between the two conditions. Trait mindfulness is predictive of greater judgability of unique traits, but state mindfulness is not. Thus, it may be only after some practice, when it has become part of the individual's personality, that mindfulness is predictive of judgability.

Overall, the findings imply that when people try to hide certain negative aspects about themselves in order to be liked or to not disappoint others, they are not serving themselves well because being more transparent about who they really are is beneficial to how they are perceived by others. Good targets are more liked, have better social relationships, and greater psychological well-being (Human & Biesanz, 2013), which suggests that becoming a good target is a desirable pursuit. In addition, the findings indicated that having high trait mindfulness and psychological well-being was related to being judged with lower normative accuracy, but having high trait mindfulness and low psychological well-being was related to being judged with higher normative accuracy, which implies that the more a person high in trait mindfulness acts in stereotypic ways instead of being authentic, his or her psychological well-being will be lower. The findings also indicated that having low trait mindfulness and higher psychological well-being was related to being judged with higher normative accuracy, which implies that people low in trait mindfulness who are not self-aware of their authentic traits, can act in stereotypic ways and still have psychological well-being, because they may be oblivious to who they really are. However the results regarding normative accuracy should be

interpreted with caution as the findings from the current study also suggest that judgments of accuracy of unique traits are predicted by trait mindfulness of the target, but not by psychological well-being of the target. Although a target high in TM might have lower PWB when perceived in a stereotypic way, the findings imply that it does not mean that the opposite would be true when a target high in TM is perceived in a unique way.

Regarding the findings about personal values versus those of personality traits, a possible reason that there was not a relationship between accuracy of judgments of values and TM in this study, is the different time states that the traits and values may prime in an individual. It is possible that thinking of personality traits puts the targets or the judges in a present time-state because they are generally thinking of who they are in that moment, while thinking about personal values may put the targets or judges in either a future or past time state. When the target is asked to rate a construct as a "guiding principle in one's life" it may lead to either thoughts about what has guided him or her in the past or what will guide him or her in the future. These differences in time perspective may have lead those rating their own traits to rate them from a more mindful state than when rating their own values, which may not have matched the cues regarding their values they provided in the video-recordings. Perhaps rating values using the Portrait Value Survey (PVQ; Schwartz et al., 2012), which is worded more toward the present time than the SVS, or directing targets to rate their values from a present-moment perspective, may lead them to answer in a more mindful way.

Implications

Theory – Mindfulness. The findings of these studies regarding trait and state mindfulness contribute to the research regarding mindfulness in that they confirm that there are differences between state and trait mindfulness as constructs. The finding that trait mindfulness predicts judgability of unique traits provides another benefit of mindfulness practice. The findings regarding psychological well-being support the established link between PWB and trait mindfulness. Although not specifically tested, the aspects of mindfulness of self-awareness and non-judging of positive and negative attributes of the self, seem to contribute to judgability of traits.

Theory – Accuracy. The findings of these studies also contribute the field of personality judgment, in particular to the Realistic Accuracy Model regarding the good target moderator. The results imply that an individual can become a good target by other means than through socialization – although it is unknown if trait mindfulness of the targets was specifically cultivated through socialization or through mindfulness practice. However, it is confirmed that trait mindfulness can be developed through regular mindfulness practice, so it is a potential method to increase judgability, through making relevant cues more available regarding authentic traits that are both negative and positive. Again although not specifically tested, the aspects of self-awareness, coherence, and consistency of cues often found in good targets appear to be found in individuals high in trait mindfulness, which implies these aspects can be increased. The variable findings regarding the relationships between TM and accuracy and between PWB and accuracy also contribute to the idea that normative and distinctive accuracy are unique constructs.

Applied- Professional. The findings from Study 1 in particular can be used professionally for interviews in occupational, academic, or legal settings. Both partners in an interview could benefit from being perceived more accurately, whether it is the interviewer or the interviewee. The results are especially applicable in situations where video interviews are used. Interactions using Skype for professional and personal use could benefit from this research regarding trait mindfulness. If a person wants or needs to be judged more accurately on their unique traits in an interview, whether in person or in a video, increasing trait mindfulness through regular meditation practice may be one way to do so.

Applied - Personal. The findings also apply in personal domains, such as to creating and maintaining dating website profiles, social media pages, and interpersonal relationships in general. Being more transparent through mindfulness practice can help people more easily navigate their relationships with family, friends, co-workers, and romantic partners. However, in all of these cases, there are situations where a person may want to fit into the group and be seen more similar to the average person, so they would not want to be judged more accurately. Helping others to understand that being judged more accurately will benefit them personally may be a first step in improving judgability.

Applied – Counseling. Similar to the personal aspect, mindfulness meditation can be used by clinicians and counselors to help clients become more transparent and better their relationships. The increased transparency may also help the counseling process as the clients are able to reveal more of their authentic selves to the counselor. However, it is important to know that it may take more than one session to see an effect.

The first goal of mindfulness practice in this situation may be to increase trait mindfulness before trying to increase judgability.

Limitations

The judgments in the current study were based solely on viewing targets in short videos, and the use of videos in accuracy research as opposed to face-to-face interactions has both strengths and weaknesses. The strengths are that several judges can view and rate a single target and it is convenient to have the videos at hand for whenever the judges are available. The weaknesses are that watching a video of a person is not always an ecologically valid situation and may change how the person is perceived because the influence of the judge is not there in the interaction. This may be especially important when the influence of the judge is required, which in this study it is not, since the focus is on the target. Therefore, the limitation can also be a strength because the target can be perceived without the influence of the judge eliciting or prohibiting cues with his presence. The cues from the target are available and it is up to the judge to simply detect and utilize what is observed from the videos.

Furthermore, the ratings were made in a lab setting as opposed to "real-world" situations, so the findings again may not be high in ecological validity because targets and judges are not acting as they would in their normal day-to-day lives. Some of the targets, regardless of the condition, may have been editing what they said in their interviews as to appear more favorable, because they knew the videos would be shown to other students. On the other hand, the judges may have not been paying as close attention to the cues available in the videos because they had little motivation to do so.

Judges may not have been interested because they had no other relationship with the target other than they both happened to participate in the same study.

In addition, there may have been too many questions to answer after each of the videos in both studies, which may have resulted in fatigue and excessive levels of cognitive load of judge-participants. In Study 1, the MTurk participants watched and rated four videos and answered questions on four different measures for each target. Several emails to the researcher indicated that the workers felt this task to be too strenuous. The lab sample watched and rated six videos and answered the questions on the same four measures, and several judges indicated to the research assistants that they felt the task to be too strenuous and boring. Judges may have lost interest and may have forgotten the cues they saw in the videos regarding the targets by the time they answered the last set of questions.

Related to the previous limitation, state affect of the judges for both studies was significantly higher at the beginning of the study than at the end of the study. Positive and negative affect both decreased at the end of Study 1, indicating that affect overall was more neutral than at the beginning of the study. Although the judges may have been fatigued at the end of the study which could have negatively impacted making accurate judgments of the targets, they also were more neutral in their levels of affect which could have positively impacted making more accurate judgments. This is especially true for positive affect which was very high at the beginning of both studies and dropped by several standard deviations by the end. The judgments made at the beginning of the studies may have been positively biased because of the very high levels of positive affect of the judges, and this may have increased the levels of normative accuracy

because this is an indication of more positive judgments. To test this idea, future research could compare the accuracy of the first two (or three) targets in each video block with that of the last two (or three) targets in the video blocks.

Future Directions

Future studies could examine similar research questions through in-person interactions. Trait mindfulness, personality traits, and personal values of both interaction partners would be measured, and then each person would judge the other partner after brief interactions. To determine causality, one of the interaction partners (target) could participate in several mindfulness inductions before several interactions and judgments of that partner would be made by the other partner (judge) after each interactions to see if accuracy improved. Alternatively, training to improve mindful conversation skills such as mindful listening could be implemented in a similar type of study to specifically increase accuracy. Based on the current findings, it may take several sessions of mindfulness practice or training for trait mindfulness to begin to develop and for accuracy to improve.

Another idea for future research could be the measurement of pre-post trait mindfulness levels from participating in a Mindfulness Based Stress Reduction (MBSR) class, which typically involves mindfulness practice 40 minutes a day, 6 days a week for 8 weeks. Targets could be video-recorded before and after the mindfulness class and the videos viewed and rated by different samples of unacquainted judges to determine if accuracy improved with increased mindfulness between the beginning and the end of the course. A wait-listed control could also be used to examine if accuracy would differ

after 8-weeks between individuals who completed the mindfulness program and those waiting to start the program.

The current study examined trait mindfulness of the target, but the effect of mindfulness (trait or induced) on the judge could be examined as well. It may be that judges higher in trait mindfulness have greater detection and utilization skills due to greater awareness that can contribute to more accurate judgments of the traits and values of others, in comparison to judges lower in trait mindfulness.

Value change of targets associated with mindfulness practice could also be examined over time, along with how this change relates to accuracy of value judgments by acquaintances and strangers. Accuracy of values may decrease as levels of trait mindfulness increase if the values are continually evolving. There is a "possible link" between mindfulness and value clarification (Shapiro, 2005), which could explain why judgability of the targets' values was not related to trait mindfulness in the current study.

Finally, since the findings regarding psychological well-being as a moderator were not what was expected in the current study, other aspects related to both trait mindfulness and judgability such as self-awareness, consistency, non-judgment, and coherence could be examined as moderators or mediators of the relationship between trait mindfulness of the target and normative and distinctive accuracy. It may be that some of these aspects are responsible for the link between trait mindfulness and distinctive accuracy of traits.

Conclusion

Mindfulness and being accurately judged by others both have many positive benefits for psychological and social well-being. The unique and genuine personality

traits can be more accurately judged by strangers when the target-individuals are higher in trait mindfulness. In addition, people high in both trait mindfulness and psychological well-being may be judged as less similar to the average person, but people low in trait mindfulness and high in psychological well-being may be judged as more similar to the average person. Accuracy of personal value judgments do not seem to be predicted by trait mindfulness of the target, and accuracy of both trait and value judgments are not predicted by the state mindfulness that results from participating in a single mindfulness induction.

Overall, these studies show that the tendency for a person's unique traits to be accurately judged by others is predicted by the person's trait mindfulness, but not by induced state mindfulness. Accuracy of one's unique traits may be increased through the practice of mindfulness, but that practice may need to be consistent and over a long period of time to become part of an individual's personality. Possessing mindfulness as a trait may help people to employ the maxim to, "Be yourself. Everyone else is already taken" – Unknown[9].

[9] The quote is often mistakenly attributed to Oscar Wilde, who although often wrote about identity, did not write this saying. https://quoteinvestigator.com/2014/01/20/be-yourself/

References

Ambady, N., Hallahan, M., & Rosenthal, R. (1995). On judging and being judged accurately in zero-acquaintance situations. *Journal of Personality and Social Psychology, 69*, 518-529. doi:10.1037/0022-3514.69.3.518

Anderson, S. M. (1984). Self-knowledge and social inference: II. The diagnosticity of cognitive/affective and behavioral data. *Journal of Personality and Social Psychology, 46*, 294-307.

Andersen, S. M., & Ross, L. (1984). Self-knowledge and social inference: I. The impact of cognitive/affective and behavioral data. *Journal of Personality and Social Psychology, 46*, 280.

Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focused breathing induction. *Behaviour Research and Therapy, 44*, 1849–1858. doi: https://doi.org/10.1016/j.brat.2005.12.007

Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of mindfulness by self-report the Kentucky inventory of mindfulness skills. *Assessment, 11*, 191-206. doi: 10.1177/1073191104268029

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., … Williams, J. M. K. (2008). Construct validity of the Five Facet Mindfulness Questionnaire in meditating and nonmeditating samples. *Assessment, 15*, 329-342. doi: 10.1177/1073191107313003

Barnes, S., Brown, K. W., Krusemark, E., Campbell, W. K., & Rogge, R. D. (2007). The role of mindfulness in romantic relationship satisfaction and responses to

relationship stress. *Journal of Marital & Family Therapy, 33*, 482–500. doi: https://doi.org/10.1111/j.1752-0606.2007.00033.x

Beer, A., & Watson, D. (2008). Personality judgment at zero acquaintance: Agreement, assumed similarity, and implicit simplicity. *Journal of Personality Assessment, 90*, 250-260. doi: http://dx.doi.org/10.1080/00223890701884970

Biesanz, J. C. (2010). The social accuracy model of interpersonal perception: Assessing individual differences in perceptive and expressive accuracy. *Multivariate Behavioral Research, 45,* 853-885. doi: 10.1080/00273171.2010.519262

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., . . . Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230–241. doi: https://doi.org/10.1093/clipsy.bph077

Blackman, M. C., & Funder, D. C. (1998). The effect of information on consensus and accuracy in personality judgment. *Journal of Experimental Social Psychology, 34*, 168-181.

Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology, 70*, 349-361.

Block-Lerner, J., Adair, C., Plumb, J. C., Rhatigan, D. L., & Orsillo, S. M. (2007). The case for mindfulness-based approaches in the cultivation of empathy: Does nonjudgmental, present-moment awareness increase capacity for perspective-taking and empathic concern? *Journal of Marital and Family Therapy, 33*, 501-516. doi: https://doi.org/10.1111/j.1752-0606.2007.00034.x

Bowen, S., & Marlatt, A. (2009). Surfing the urge: Brief mindfulness-based intervention for college student smokers. *Psychology of Addictive Behaviors, 23*, 666-671. doi: http://dx.doi.org/10.1037/a0017127

Broderick, P. C. (2005). Mindfulness and coping with dysphoric mood: Contrasts with rumination and distraction. *Cognitive Therapy and Research*, *29*, 501-510. doi:10.1007/s10608-005-3888-0

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822–848. doi:10.1037/0022-3514.84.4.822

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*, 211-237. doi: https://doi.org/10.1080/10478400701598298

Brunswik, E. (1952). The conceptual framework of psychology. *Psychological Bulletin*, 49, 654-656.

Campbell, T. S., Labelle, L. E., Bacon, S. L., Faris, P., & Carlson, L. E. (2012). Impact of mindfulness-based stress reduction (MBSR) on attention, rumination and resting blood pressure in women with cancer: A waitlist-controlled study. *Journal of Behavioral Medicine, 35*, 262-271. doi:10.1007/s10865-011-9357-1

Carlson, E. N. (2013). Overcoming the barriers to self-knowledge: Mindfulness as a path to seeing yourself as you really are. *Perspectives on Psychological Science*, *8,* 173-186. doi: 10.1177/1745691612462584

Carlson, L. E., Speca, M., Patel, K. D., & Goodey, E. (2003). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress, and immune

parameters in breast and prostate cancer outpatients. *Psychosomatic Medicine, 65*, 571-581. doi: 10.1097/01.PSY.0000074003.35911.41

Carmody, J., Baer, R. A., Lykins, E. L. B., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology, 65*, 613-626. doi: 10.1002/jclp.20579

Carson, S. H., & Langer, E. J. (2006). Mindfulness and self-acceptance. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 24*, 29-43. doi:10.1007/s10942-006-0022-5

Christensen, N. D., Wolcott-Burnam, S., Janovics, J. E., Burns, G. N., & Quirk, S. (2005). The good judge revisited: Individual differences in the accuracy of personality judgments. *Human Performance, 18*, 123-149. doi: https://doi.org/10.1207/s15327043hup1802_2

Colvin, C. R. (1993a). Childhood antecedents of young adult judgability. *Journal of Personality, 61*, 611-635. doi:10.1111/j.1467-6494.1993.tb00784.x

Colvin, C. R. (1993b). "Judgable" people: Personality, behavior, and competing explanations. *Journal of Personality and Social Psychology, 64*, 861-873. doi:10.1037//0022-3514.64.5.861

Cronbach, L. J. (1955). Processes affecting scores on "understanding of others" and "assumed similarity." *Psychological Bulletin, 52*, 177-193.

Deci, E. L., & Ryan, R. M. (2011). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology*: Vol. 1 (pp. 416-437). Thousand Oaks, CA: Sage. doi: 10.4135/9781446201022

Dekeyser, M., Raes, F., Leijssen, M., Leysen, S., & Dewulf, D. (2008). Mindfulness skills and interpersonal behaviour. *Personality and Individual Differences, 44*, 1235–1245. doi: https://doi.org/10.1016/j.paid.2007.11.018

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With life scale. *Journal of Personality Assessment, 49,* 71-75.

Dobewall, H., Aavik, T., Konstabel, K., Schwartz, S. H., Realo, A., (2014). A comparison of self-other agreement in personal values versus the Big Five personality traits. *Journal of Research in Personality, 50,* 1-10. doi: http://dx.doi.org/10.1016/j.jrp.2014.01.004

Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: Concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology, 64,* 834-846.

Easwaran, E. (1991). *Meditation: A simple eight-point program for translating spiritual ideals into daily life*. Tomales, CA, Nilgiri press.

Echon, R., Parker, C., Lale, R., & Turley-Ames, K. J. (in preparation). *Strategy accounts for variance in working memory performance.*

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39,* 175-191.

Flett, G. L., Besser, A., Davis, R. A., & Hewitt, P. L. (2003). Dimensions of perfectionism, unconditional self-acceptance, and depression. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 21,* 119-138.

Funder. D. C. (1995). On the accuracy of personality judgment: A realistic approach. *Psychological Review, 102,* 652-670. doi: 10.1037/0033-295X.102.4.652

Funder, D. C. (1999). *Personality judgment: A realistic approach to person perception*. San Diego, CA: Academic Press.

Funder, D. (2012). Accurate personality judgment. *Current Directions in Psychological Science, 21,* 177-182. doi: 10.1177/0963721412445309

Funder, D. C., & Dobroth, K. M. (1987). Differences between traits: Properties associated with interjudge agreement. *Journal of Personality and Social Psychology, 52,* 409-418. doi: 10.1037/0022-3514.52.2.409

Giluk, T. L. (2009). Mindfulness, Big Five personality, and affect: A meta-analysis. *Personality and Individual Differences, 47,* 805-811. doi:10.1016/j.paid.2009.06.026

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research, 57,* 35-43. doi: https://doi.org/10.1016/S0022-3999(03)00573-7

Hanley, A. W. (2016). The mindful personality: Associations between dispositional mindfulness and the five factor model of personality. *Personality and Individual Differences, 91,* 154-158. doi: https://doi.org/10.1016/j.paid.2015.11.054

Hollis-Walker, L., & Colosimo, K. (2011). Mindfulness, self-compassion, and happiness in non-meditators: A theoretical and empirical examination. *Personality and Individual Differences, 50,* 222-227. doi: https://doi.org/10.1016/j.paid.2010.09.033

Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science, 6,* 537–559. doi: 10.1177/1745691611419671

Human, J. L. (2009). The role of adjustment in accurate interpersonal impressions (Unpublished master's thesis). The University of British Columbia, Vancouver, Canada.

Human, L. J., & Biesanz, J. C. (2011a). Target adjustment and self-other agreement: Utilizing trait observability to disentangle judgeability and self-knowledge. *Journal of Personality and Social Psychology, 101,* 202-216. doi:10.1037/a0023782

Human, L. J., & Biesanz, J. C. (2011b). Through the looking glass clearly: Accuracy and assumed similarity in well-adjusted individuals' first impressions. *Journal of Personality and Social Psychology, 100,* 349-364. doi:10.1037/a0021850

Human, L. J., Biesanz, J. C., Parisotto, K. L., & Dunn, E. W. (2012). Your best self helps reveal your true self: Trying to make a good impression leads to more accurate personality impressions. *Social Psychological and Personality Science, 3,* 23-30. doi:10.1177/1948550611407689

Human, L. J., & Biesanz, J. C. (2013). Targeting the good target: An integrative review of the characteristics and consequences of being accurately perceived. *Personality and Social Psychology Review, 17,* 248-272. doi: 10.1177/1088868313495593

Jacobs, T. L., Shaver, P. R., Epel, E. S., Zanesco, A. P., Aichele, S. R., Bridwell, D. A., ... & Kemeny, M. E. (2013). Self-reported mindfulness and cortisol during a Shamatha meditation retreat. *Health Psychology*, *32*, 1104-1109. doi: http://dx.doi.org/10.1037/a0031362

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality: Theory and research*, *2*, 102-138.

Kabat-Zinn, J. (1990). *Full catastrophe living: How to cope with stress, pain and illness using mindfulness meditation*. New York, NY: Bantam Dell.

Kabat-Zinn, J., Wheeler, E., Light, T., Skillings, A., Scharf, M. J., Cropley, T. G., ... & Bernhard, J. D. (1998). Influence of a mindfulness meditation-based stress reduction intervention on rates of skin clearing in patients with moderate to severe psoriasis undergoing photo therapy (UVB) and photochemotherapy (PUVA). *Psychosomatic medicine*, *60*, 625-632.

Keng, S., Smoski, M. J., & Robins, C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, *31*, 1041-1056.

Kiecolt-Glaser, J. K., Glaser, R., Williger, D., Stout, J., Messick, G., Sheppard, S., ... & Donnerberg, R. (1985). Psychosocial enhancement of immunocompetence in a geriatric population. *Health Psychology*, *4*, 25-41.

Lakey, C. E., Kernis, M. H., Heppner, W. L., & Lance, C. E. (2008). Individual differences in authenticity and mindfulness as predictors of verbal defensiveness. *Journal of Research in Personality, 42*, 230–238.

Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., ... & Devins, G. (2006). The Toronto Mindfulness Scale: Development and validation. *Journal of Clinical Psychology, 62,* 1445-1468. doi: 10.1002/jclp.20326

Letzring, T. D. (2008). The good judge of personality: Characteristics, behavior, and observer accuracy. *Journal of Research in Personality, 42,* 914-932.

Letzring, T. D. (2015). Observer judgmental accuracy of personality: Benefits related to being a good (normative) judge. *Journal of Research in Personality, 54,* 51-60.

Letzring, T. D., Block, J., & Funder, D. C. (2005). Ego-control and ego-resiliency: Generalization of self-report scales based on personality descriptions from acquaintances, clinicians, and the self. *Journal of Research in Personality, 39,* 395-422.

Letzring, T. D., Funder, D. C. & Wells, S. M. (2006). Information quantity and quality affect realistic accuracy judgment. *Journal of Personality and Social Psychology, 91,* 111-123.

Letzring, T. D., & Human, L. J. (2013). An examination of information quality as a moderator of accurate personality judgment. *Journal of Personality, 82,* 440-451. doi: 10.1111/jopy.12075

Lieberman, M. D. (2013). *Social: Why our brains are wired to connect*. New York, Crown Publishers.

Matousek, R. H., Dobkin, P. L., & Pruessner, J. (2010). Cortisol as a marker for improvement in mindfulness-based stress reduction. *Complementary therapies in clinical practice, 16,* 13-19.

McDonald, J. S., & Letzring, T. D. (2016). Judging personal values and personality traits: Accuracy and its relation to visibility. *Journal of Research in Personality, 65*, 140-151. doi: https://doi.org/10.1016/j.jrp.2016.10.009

McReynolds, P., Altrocchi, J., & House, C. (2000). Self-pluralism: Assessment and relations to adjustment, life changes, and age. *Journal of Personality, 68*, 347-381. doi: http://dx.doi.org/10.1016/j.ctcp.2009.06.004

Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity*, *2*, 85-101. doi: 10.1080/15298860309032

Nyklicek, I., & Kuipers, K. (2008). Effects of mindfulness-based stress reduction intervention on psychological well-being and quality of life: Is increased mindfulness indeed the mechanism? *Annals of Behavioral Medicine, 35*, 331-340.

R Core Team (2013). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org/.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78. doi: http://dx.doi.org/10.1037/0003-066X.55.1.68

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069-1081.

Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies, 9*, 13-39.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in Experimental Social Psychology: Vol. 25,* (pp.1-65). New York: Academic Press.

Schwartz, S.H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C.,… & Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology, 103*, 663-688. doi: http://dx.doi.org/10.1037/a0029393

Siegling, A. B., & Petrides, K. V. (2014). Measures of trait mindfulness: Convergent validity, shared dimensionality, and linkages to the five factor model. *Frontiers in Psychology, 5*, 1-8. doi:10.3389/fpsyg.2014.01164

Shapiro, D. H. (1992). Adverse effects of meditation: A preliminary investigation of long-term meditators. *International Journal of Psychosomatics, 39*, 62-67.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2005). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*, 373-386. doi: 10.1002/jclp.20237

Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology, 64*, 840–862. doi: https://doi.org/10.1002/jclp.20491

Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and

predictive power. *Journal of Personality and Social Psychology*, *113*, 117-143. doi: http://dx.doi.org/10.1037/pspp0000096

Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology, 68,* 615-623. doi: 10.1037//0022-006X.68.4.615

Thompson, B. L., & Waltz, J. (2007). Everyday mindfulness and mindfulness meditation: Overlapping constructs or not? *Personality and Individual Differences, 43,* 1875-1885. doi: https://doi.org/10.1016/j.paid.2007.06.017

Vago, D. R., & Silbersweig, D. A. (2012). Self-awareness, self-regulation, and self-transcendence (S-ART): A framework for understanding the neurobiological mechanisms of mindfulness. *Frontiers in Human Neuroscience, 6,* 1-30. doi: https://doi.org/10.3389/fnhum.2012.00296

Van Dam, N. T., Earleywine, M., & Danoff-Burg, S. (2009). Differential item function across meditators and non-meditators on the Five Facet Mindfulness Questionnaire. *Personality and Individual Differences, 47,* 516-521. doi: https://doi.org/10.1016/j.paid.2009.05.005

Van Dam, N. T., van Vugt, M. K., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., Meissner, T., Lazar, S. W., Kerr, C. E., …, Meyer, D. E. (2017). Mind the hype: A critical evaluation and prescriptive agenda for research on mindfulness and meditation. *Perspectives on Psychological Science, 13,* 36-61. doi: https://doi.org/10.1177/1745691617709589

van den Hurk, P. A., Wingens, T., Giommi, F., Barendregt, H. P., Speckens, A. E., & van Schie, H. T. (2011). On the relationship between the practice of mindfulness meditation and personality—an exploratory analysis of the mediating role of mindfulness skills. *Mindfulness, 2,* 194-200. doi: 10.1007/s12671-011-0060-7

Walsh, J. J., Balint, M. G., Smolira, Fredericksen, L. K., & Madsen, S. (2009). Predicting individual differences in mindfulness: The role of trait anxiety, attachment anxiety and attentional control. *Personality and Individual Differences, 46,* 94-99. doi: https://doi.org/10.1016/j.paid.2008.09.008

Watson, D., Hubbard, B., & Wiese, D., (2000). Self-other agreement in personality and affectivity: The role of acquaintanceship, trait visibility, and assumed similarity. *Journal of Personality and Social Psychology, 78,* 546-558. doi: 10.1037//0022-3514.78.3.546

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1063-1070.

Appendix A

Interview Questions from The Life Story Interview
Dan P. McAdams, Northwestern University
Revised 2008
(Revised for purposes of this project by JM and TL 2016)

Introduction:

I would like you to focus in on a few key scenes that stand out in the story of your life. A key scene would be an event or specific incident that took place at a particular time and place. For a negative scene choose an event or memory that is mild, (such as a 1-3 on a scale of 1 being slightly bad to 10 being terrible). Consider a key scene to be a moment in your life story that stands out for a particular reason – perhaps because it was particularly vivid, important, or memorable. For each of the six key events we will consider, I ask that you describe in detail what happened, when and where it happened, who was involved, and what you were thinking and feeling in the event. In addition, I ask that you tell me why you think this particular scene is important or significant in your life. What does the scene say about you as a person? Please be specific.

Interview Set A

1. Positive Childhood Memory

The first scene is an early memory – from childhood or your teen-aged years – that stands out as especially positive in some way. This would be a very positive, happy memory from your early years. Please describe this good memory in detail. What happened, where and when, who was involved, and what were you thinking and feeling? Also, what does this memory say about you or about your life?

2. Low Point

The next scene is different from the first. Thinking back over your entire life, please identify a scene that stands out as a low point in your life story. Again this doesn't have

to be the lowest point in your life, just a 1-3 on a scale of 1-10, with 10 being a very low point in your life. Even though this event is unpleasant, I would appreciate your providing as much detail as you can about it. What happened in the event, where and when, who was involved, and what were you thinking and feeling? Also, please say a word or two about why you think this particular moment was bad and what the scene may say about you or your life.

[Interviewer note: If the participants balks at doing this, tell him or her that the event does not really have to be the lowest point in the story but merely an unpleasant experience of some kind.]

3. Turning Point

In looking back over your life, it may be possible to identify certain key moments that stand out as turning points -- episodes that marked an important change in you or your life story. Please identify a particular episode in your life story that you now see as a turning point in your life. If you cannot identify a key turning point that stands out clearly, please describe some event in your life wherein you went through an important change of some kind. Again, for this event please describe what happened, where and when, who was involved, and what you were thinking and feeling. Also, please say a word or two about what you think this event says about you as a person or about your life.

Interview Set B

1. High Point

Please describe a scene, episode, or moment in your life that stands out as an especially positive experience. This might be the high point scene of your entire life, or else an

especially happy, joyous, exciting, or wonderful moment in the story. Please describe this high point scene in detail. What happened, when and where, who was involved, and what were you thinking and feeling? Also, please say a word or two about why you think this particular moment was so good and what the scene may say about who you are as a person.

2. Negative Childhood Memory

The next scene is an early memory – from childhood or your teen-aged years – that stands out as negative in some way. This would be a mildly negative, unhappy memory from your early years, perhaps entailing sadness, fear, or some other negative emotional experience. Again it doesn't have to be especially negative, but mildly unpleasant (1-3) on a scale of 1-10, with 10 being a very unpleasant memory. Please describe this bad memory in detail. What happened, where and when, who was involved, and what were you thinking and feeling? Also, what does this memory say about you or your life?

3. Wisdom Event

Now, please describe an event in your life in which you displayed wisdom. The episode might be one in which you acted or interacted in an especially wise way or provided wise counsel or advice, made a wise decision, or otherwise behaved in a particularly wise manner. What happened, where and when, who was involved, and what were you thinking and feeling? Also, what does this memory say about you and your life?

Appendix B

Mindfulness Intervention Instructions
(The instructions were recorded by Jen Meisch)

Before you begin this brief mindfulness meditation practice, have the goal to increase your self-awareness. Try to be self-aware in a nonjudgmental way. Just be aware and accepting of whatever thoughts, feelings, and sensations come up for you.

Guided Sitting Meditation

This guided sitting meditation will help you learn to simply be and to look within yourself with mindfulness and equanimity. Allow yourself to switch from the usual mode of doing to a mode of non-doing. Of simply being. As you allow your body to become still, bring your attention to the fact that you are breathing. And become aware of the movement of your breath as it comes into your body and as it leaves your body. Not manipulating the breath in any way or trying to change it. Simply being aware of it and of the feelings associated with breathing. And observing the breath deep down in your belly. Feeling the abdomen as it expands gently on the inbreath, and as it falls back towards your spine on the outbreath. Being totally here in each moment with each breath. Not trying to do anything, not trying to get any place, simply being with your breath.

You will find that from time to time your mind will wander off into thoughts, fantasies, anticipations of the future or the past, worrying, memories, whatever. When you notice that your attention is no longer here and no longer with your breathing, and without judging yourself, bring your attention back to your breathing and ride the waves of your breathing, fully conscious of the duration of each breath from moment to

moment. Every time you find your mind wandering off the breath, gently bringing it back to the present, back to the moment-to-moment observing of the flow of your breathing. Using your breath to help you tune into a state of relaxed awareness and stillness.

Now as you observe your breathing, you may find from time to time that you are becoming aware of sensations in your body. As you maintain awareness of your breathing, see if it is possible to expand the field of your awareness so that it includes a sense of your body as a whole as you sit here. Feeling your body, from head to toe, and becoming aware of all the sensations in your body.

Being here with whatever feelings and sensations come up in any moment without judging them, without reacting to them, just being fully here, fully aware of whatever you're experiencing. And again whenever you notice that your mind wandered off, just bringing it back to your breathing and your body as you sit here not going anywhere, not doing anything just simply being, simply sitting. Moment to moment, being fully present, fully with yourself.

Now as you sit here once again allowing the field of your awareness to expand. This time, expanding your awareness to include thoughts as they move through your mind. So letting your breathing and sense of your body be in the background and allowing the thinking process itself to be the focus of your awareness. And rather than following individual thoughts and getting involved in the content and going from one thought to the next, simply seeing each thought as it comes up in your mind as a thought and letting the thoughts just come and go as you sit and dwell in stillness, witnessing

them and observing them. Whatever they are…just observing them as events in the field of your consciousness…as they come into your awareness and they linger and as they dissolve.

If you find yourself at any point drawn into this stream of thinking and you notice that you are no longer observing them, just coming back to observing them as events and using your breathing and the sense of your body to anchor you and stabilize you in the present.

The thoughts can take any form, they can have any content and they can be either neutral or very highly charged. If thoughts come up that have fear in them, then just be aware of fear being here and letting these thoughts come and go. The same for worries, preoccupations, and so on. Regardless of the feeling that a thought might create for you, just observing it as simply a thought and letting it be here without pursuing it or without rejecting it. Noticing that from moment to moment, new thoughts will come and go.

As the meditation ends, you might give yourself credit for having spent this time nourishing yourself in a deep way by dwelling in this state of non-doing, in this state of being. For having intentionally made time for yourself to simply be who you are. And as you move back into the world, allow the benefits of this practice to expand into every aspect of your life.

Reference: Mindfulness Meditation, CD Series 1, Jon Kabat-Zinn

Appendix C

Unfocused Attention Instructions
Recorded by Jen Meisch

For the next 15 minutes, simply think about whatever comes to mind. Let your mind wander freely without trying to focus on anything in particular (Arch & Craske, 2006).

Participants heard these instructions once – as per Tony Seikel's suggestion.