

PERSONALITY AND TEAM ROLE PERFORMANCE:
THE MEDIATING EFFECT OF ROLE PREFERENCES

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ABSTRACT

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by Jared M. Quinn

Although team performance has received significant attention in the literature in the past decade, little progress has been made in establishing the framework through which individual-level behaviors relate to team-level outcomes. The goal of the current study was to further the understanding of the personality-performance relationship at the individual-level. Mediation models were hypothesized to determine the relationship between various personality facets, team role preference, and team role performance. While impactful relationships were expected between personality and corresponding role performances, the results were negligible. The relationships between personality and corresponding role preferences, however, were moderately strong and generally consistent with hypotheses. Personality was able to predict an individual's preference to perform certain role behaviors within the team context. Future research should assess the methodological and theoretical nature of the nominal personality-performance relationship.

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CHAPTER 1

INTRODUCTION

With the rapid globalization of organizations, there is a stronger demand for efficient and effective products and services. Many organizations have shifted to the implementation of work teams in order to combat the complex nature of growing demands (Gersick, 1988). Teams are often more capable of performing complex tasks or projects with broader scopes than individual contributors. As a result of the transition to a more team-oriented workforce, there has been a calling for a better understanding of the relationship between team member dispositions and effective team functioning in organizational settings. One important factor underlying effective team functioning is the roles within which an individual contributes to the overall team.

Team roles are commonly defined as clusters of related behaviors which are intended to perform certain functions related to team performance (Stewart, Manz, & Sims, 1999). The behaviors carried out by individual members are necessary for effective team functioning, maintaining relationships, and overall team vitality throughout the longevity of the workgroup (Hackman, 1987). Researchers commonly point to individual-level predictors to explain team-level performance without establishing an adequate framework for linking cross-level relationships. While team performance is assessed at the group level, team member roles provide the necessary structure for such cross-level analyses. In addition to examining multi-level relationships, roles allow researchers to assess individual performances within teams. A greater understanding of individual contributions has practical implications in team composition, allowing leaders to recognize the strongest and weakest components of the group. Although several chapters and popular press articles mention the relative importance of individual

contributions within a team, team member roles and various role taxonomies have received little attention in the literature (Steers, 1991).

By examining team functioning through the lens of team member roles, researchers have the ability to explain the relationship between individual characteristics and overall team outcomes. Equipped with a greater understanding of the influence of individual member roles on team performance, researchers can further examine the relationship between individual difference variables and team roles. Personality offers a promising avenue in predicting the adoption and effective performance of member roles. While the link between personality and roles is theoretically sound, it has seen minimal attention in the literature. Only a handful of studies have examined such relationships, and the broad nature of the role domains has clouded the interpretation and utility of the results.

In contrast to the relationship between individual personality traits and team roles, the relationship between team-level personality and performance has received significant attention in recent years. Although several studies have established significant relationships between personality and team performance, these relationships are generally modest. Recent meta-analytic findings suggest only a medium effect between both extraversion and agreeableness and team performance. Additionally, emotional stability has displayed only a small effect with overall team performance (Bell, 2007). Although meta-analyses allow researchers to assess large amounts of data across multiple studies, the inherent differences within each study lead to unclear interpretations of the relationships between the variables. While the current literature on personality and teams has provided a strong foundation for understanding team functioning, the small to medium effect sizes found in personality-performance relationships suggest further investigation. The modest relationships are not surprising, as recent research has established that

personality relates more strongly with team behavioral criteria than outcome criteria (Prewett, Walvoord, Stilson, Rossi, & Brannick, 2009). In sum, existing literature has been disappointing in establishing the importance of the personality-team performance relationship. Current researchers have focused on personality constructs which are too broad and too far removed from team performance to truly understand how they affect the behaviors of individual team members. The direct link between individual personality and team performance offers little explanation as to how personality improves or impedes team functioning.

Team personality composition and team performance may also exhibit modest relationships due to model misspecification. As personality is defined and measured at the individual level, the most direct consequence of member personality should be individual behavioral sets. However, prior research has made little effort to empirically test the conceptual link between personality traits and team role preferences and performance. Analyzing team roles and personality traits conjointly will allow for a more extensive understanding of team effectiveness.

The current study seeks to address this gap in the literature by examining the relationship between personality traits, role preferences, and role performance ratings. The understanding of deep-level characteristics, such as personality and role preferences, will provide researchers with a more comprehensive framework through which individual behaviors relate to team-level outcomes. The use of specific roles provides specific and theoretically-linked behaviors for evaluating how personality operates to affect team functioning. Theoretically, the link between personality and individual roles is strong, but the lack of research has thwarted recognition of this relationship. The current study will be the first to examine the empirical support for the convincing theoretical link between personality, specific team roles, and team performance. The

present study will also offer a more thorough framework for understanding the relationship between personality and team performance. By examining the link between narrow individual personality traits and member roles, the current study offers an explanation of how roles are adopted and how personality contributes to team functioning. In sum, the present study will contribute to the existing literature by establishing empirical support for the theoretically sound relationship between team roles and personality. Overall, the results of this study will provide a more complete understanding of how individual contributions and personality contribute to the effectiveness of teams.

Team Roles

It is crucial to understand the unique contributions of individual team members, in addition to the overall effectiveness of team functioning. One of the most effective ways in conceptualizing individual contributions is to examine team member roles. Roles are defined as a cluster of related and goal directed behavior characteristics of a person within a specific situation. Compared with jobs, roles are characterized as more flexible and dynamic (Mumford, Iddekinge, Morgeson, & Campion, 2008). Roles were originally sorted into two distinct categories, functional roles and team roles. Functional roles are characterized as clusters of behavior which are a direct result of the individual's competencies as proscribed by their job. Team roles, on the other hand, are the patterns of behaviors that are carried out in relationship to other members with the intention of advancing the progress of a team (Belbin, 1993).

The examination of individual contributions has several advantages. Team roles have been suggested as necessary in order to avoid role ambiguity, conflict, and social loafing within a work group (Steiner, 1972). Team member roles are generally perceived as the foundation of

effective performance. Additionally, the construct of roles allows for an understanding of complementary fit within a team. Individuals in a team must take into account certain environmental stimuli and behave in a way that is suitably within their role. Roles are also characterized as more dynamic than the overall concept of jobs. The concept of team roles allows for a more adaptable approach to understanding social functioning, task allocation, and overall team performance.

Evolution of Role Typologies

The evolution of role typologies began with the classification of individuals according to role preferences based on early personality models by Carl Jung (1923). Previous researchers had attempted to classify roles into broad dichotomized taxonomies. The first contribution to team role research identified two critical aspects essential to effective team functioning, task performance and social viability (Benne & Sheats, 1948; Bales, 1950). Benne and Sheates (1948) proposed a role taxonomy consisting of three broad group domains. The first domain, “Group Task Roles,” describes roles pertaining to the task. The primary purpose of task roles is to coordinate group functioning in order to define the problem and determine the solution. The second domain in Benne and Sheats’ taxonomy is “Group Building and Maintenance Roles.” These roles involve the maintenance of group processes and the strengthening of the perception of a group as a collective unit. The roles in this domain pertain to effective social functioning, which may involve monitoring and relationship building. The last domain is “Individual Roles.” Individual roles, in this framework, refer to individual goals which are not relevant to the group task or the group social maintenance. Individual roles are considered hindrances to effective group functioning in this taxonomy, an assumption that is not shared by later models of team

roles. Benne & Sheats (1948) proposed that these roles attract attention to the individual and not the group, such that the performance of individual roles would be negatively related to group performance (Benne & Sheats, 1948).

While the taxonomy proposed by Benne and Sheats may have provided the foundation for team role research, it was Belbin's team role model which became one of the most popular models in the team role literature. According to Belbin's (1981) model, team members have professional, hierarchical, and interpersonal-oriented team roles. Across these three broad domains, individuals may take on any combination of the following nine roles: implementer, coordinator, shaper, plant, resource-investigator, monitor-evaluator, team worker, completer-finisher, and specialist. Belbin and colleagues proposed that teams would be most effective if each of the nine roles were filled, with each individual naturally fulfilling two or three roles within the team (Belbin, 1981). Belbin's model first gained popularity upon the publication of his book, making the Self-Perception Inventory (SPI) available to the public. The SPI measures an individual's most dominant role within the team by presenting the respondent with situational judgment test items. The individual's response to any given situation indicates the role that is most suitable for that particular team member. Additionally, Belbin introduced the Observer Assessment Sheet (OAS), which requires peers to rate the team member on an array of adjectives. Although Belbin advocated the use of such tools together, most researchers have focused on the SPI. While such an approach is common, the results of the self-report leave the researcher with incomplete and potentially invalid information (Belbin, 2004).

In addition to the inadequate implementation of several measures, little is known about the necessity of total role fulfillment within a team. Although Belbin has proposed that teams will be most effective when all roles are filled, the research has failed to suggest such a positive

trend, causing questions to arise regarding the validity of the model. Belbin also argued that roles were defined by six different factors: personality, mental ability, current values and motivation, field constraints, experience, and role learning. While Belbin claimed that each of these factors was important in defining the team role, he did not show how much of the variance in team roles was explained by each factor (Aritzeta, Swailes, & Senior, 2007), further contributing to the lack of clarity with his model.

Early research on team roles provided the foundation for our understanding of team functioning, but the previous findings have several limitations. The early research classifying both task and social roles by Benne and Sheats is one of the most favorably implemented theories for understanding team roles (Stewart et. al, 1999). Although it is one of the more popular theories of team roles, there is little empirical support for its validity. Additionally, the assessment of team role adoption has used ad hoc analyses based on laboratory studies; it is uncertain whether such findings are generalizable to the workplace. Belbin (1981) made great strides in advancing the literature beyond Benne and Sheats' basic task and social roles by providing a more descriptive taxonomy. Although Belbin's team role model was quite popular, doubts regarding the methodology and the validity of the model created a calling for a more complete and rigorous taxonomy.

Mumford's Taxonomy (2006)

As a result of the wide array of team role taxonomies in the literature, Mumford et al., (2006) attempted to integrate all of the existing taxonomies into one unified typology. While previous taxonomies have proven beneficial, they have lacked methodological rigor and empirical support. Several researchers have cited a variety of team roles, many of which have

deviated from their originally intended defining behaviors. Upon review of the team role literature, the researchers determined a total pool of 120 team roles. Using a Q-sort methodology, researchers independently sorted the roles into homogeneous groups. The level of agreement between the researchers was .80, after correcting for chance agreement. The typology provided by Mumford et al., (2008) is considered to be all-encompassing, as it includes all of the team roles mentioned in the literature. The behaviors are grouped into 10 different team roles and categorized into three broad domains, in accordance with the extant literature: task roles, social roles, and boundary-spanning roles.

Task roles involve behaviors which are directed towards group functioning to achieve performance outcomes. In this taxonomy, task roles are broken down into five distinct team roles. The contractor role involves task organization and coordination. The contractor engages in behaviors such as task coordination, resource allocation, clarifying abilities, and determining member responsibilities. Contractors are typically valuable in situations that are high in ambiguity and also high in complexity. The creator role is an innovative role typically taken on by individuals valuing creativity and leadership. Creators are responsible for proposing innovative visions of the teams' goals, objectives, or strategies in accomplishing tasks. This role is most appropriate in situations where the existing team procedures are inadequate, or the situation requires an innovative and novel approach. The role of the contributor is to provide expert knowledge to the team. Contributors are often brought in to provide knowledge about a specific situation or task. An individual in the contributor role might accomplish the task individually or might provide others with the necessary information to perform the task. The completer role involves behaviors that are based on individual accomplishment but still effect team functioning. Completers are called upon when a specific task would be more effectively

tackled by one individual, rather than dividing the task among a group of individuals. The critic role contributes behaviors that scrutinize group behaviors and decision making. The critic role is crucial in ensuring that teams consider all options when making decisions and is most appropriate in groups where there is generally unwavering consensus.

Social roles involve the interpersonal behaviors that team members must engage in to be successful. The communicator role involves behaviors that facilitate a comfortable environment which is conducive to an exchange of ideas and open collaboration. Unlike some roles which are relevant only in specific situations, the communicator role is almost always necessary in teams. Communicator role behaviors are particularly important in socially complex tasks, such as negotiations. The cooperater role behaviors reflect a willingness to support the groups' behaviors and decisions. This particular role is appropriate in situations where all opinions in the team have been voiced and the team begins execution of its strategy. The calibrator role engages in behaviors that facilitate the influx of team norms in order to improve overall team functioning. It is not uncommon for there to be a sense of ambiguity in team member interaction in newly formed teams or teams in which composition may be often changing. In these situations, the calibrator will be particularly useful in establishing proper social processes and team norms.

Lastly, boundary-spanning roles recognize the behaviors that may occur outside of the team, but still effect team functioning. The consul role involves interactions that occur outside of the team context which are aimed at presenting the team in a favorable manner. The consul role is relevant in situations where the team is seeking resource assistance from an external entity. This role is crucial in newly formed teams who are still trying to develop a sense of relevance and reputation. The coordinator role involves interactions that occur outside of the team settings which focus on interpersonal relationships with individuals belonging to outside teams or

departments. The role of the coordinator is particularly critical in situations where the team is working in collaboration with another work group, or where the team is dependent on the functioning of another group (Mumford et al., 2008).

While Mumford's taxonomy shows promise in explaining the behaviors through which individuals affect team performance, there is little research on the variables that predict how and why members take on particular roles within the team. Mumford and colleagues (2008) found that role knowledge is a significant predictor of role adoption, but other predictors have received little attention in the literature. In addition to possessing the knowledge of when a particular role needs to be filled within the team, members must also have the willingness and comfort to perform such role behaviors. To contribute to the prediction of role adoption, researchers can look to personality as another predictor in the adoption of team roles. Individuals possessing certain personality traits may be more likely to take on certain roles or express a preference to perform certain roles within the team context.

Team Personality

The preliminary research on personality generally focused on individually-oriented traits and individual performance. In particular, researchers pointed to conscientiousness as the strongest predictor in the personality-performance relationship (Barrick & Mount, 1991; Mount & Barrick, 1995). Researchers placed little stock in interpersonally-oriented personality traits, as they did not seem to greatly affect individual performance. While interpersonally loaded traits, such as agreeableness, may not be entirely relevant to individual performance, it plays a major role in team-based settings (Halfhill, Nielsen, & Sundstrom, 2008; Halfhill, Nielsen, Sundstrom,

& Weilbaeher, 2005). Recognizing the need to study more team-oriented personality traits, researchers transitioned to analyzing team-level personality as it relates to team-level outcomes.

Team-level personality research began with the simple aggregation of individual personality scores so as to relate team-level personality scores to team performance. Since its inception, team-personality has seen a variety of aggregation techniques, with some techniques being more relevant in some situations than others. Team-level personality traits may be operationalized by examining average scores, minimums, maximums, or variability between scores. If diversity in a particular trait seems theoretically important, then the variance approach to aggregation should show the best results. On the other hand, if elevation of a trait is of particular interest, than average or minimum scores should be used. The empirical literature on team-level personality traits has yielded conflicting opinions on the best way to aggregate from individual to team-level trait scores, but meta-analytic research has yielded disappointing results for the utility of variance aggregation methods (Bell, 2007; Prewett et al., 2009).

While many aggregation techniques are widely used, the aggregation of individual scores may be a poor approach to studying the effect of personality on team performance. Another method of measurement is the team consensus approach, in which team members respond to a single survey as a group (Kirkman, Tesluk, & Rosen, 2001). While team consensus ratings has provided promising results for the measurement of team-level process variables, personality is traditionally defined and measured as an individual-level concept that should most directly affect individual behaviors. Thus, personality is ill-suited for a consensus measurement approach. Overall, the inconsistencies in the literature point to several issues with personality aggregation in teams without offering a more reasonable approach to studying the personality-performance

relationship. Team roles offer a proximal, individual-level criterion to connect individual personality to team performance.

Prior research on team personality has found stronger relationships with team processes or behaviors than with team outcomes. Generally speaking, personality variables are less likely to be related to outcome variables due to the additional factors that contribute to team outcomes (Prewett et al., 2009). Much of the research using behavioral criteria, however, has retained a team-level measurement approach. Team roles present individual-level behavioral criteria, allowing for a more direct investigation of the impact of personality traits within teams. In acknowledging that team performance is still the primary criterion of interest, the aggregation of individual predictors is perhaps best focused on individual role performances rather than individual personality traits.

Another consideration when examining the relationships between personality and team role performance is the breadth of the predictors and criteria in consideration. The bandwidth-fidelity tradeoff points to the difficulties in understanding relationships between broad predictors and narrow criteria. Team roles have been generally studied in a broader context, examining the predictors of both task and social roles. Recent taxonomies have been geared towards a more narrow understanding of specific team roles, fostering a necessity to consider narrow personality facets in addition to broad personality factors.

Bandwidth-Fidelity Dilemma

With the resurgence of personality testing in personnel selection, increased attention has been given to personality constructs in the literature (Costa and McCrae 1995). Due to the introduction of the Five Factor Model (FFM), researchers can classify individuals according to a

similar set of personality traits. Although the FFM provides researchers with the opportunity for communication using a uniform set of factors, questions still remain regarding the comprehensiveness and breadth of this approach (Block, 1995). Given the broad nature of the FFM, researchers must weigh the importance of the precise measurement of a couple of variables versus a broader understanding of a larger number of variables (Murphy, 1993). The bandwidth-fidelity dilemma portrays the competing nature of practical personality measurement.

The prediction of broad criteria using narrow predictors, or narrow criteria using broad predictors, has yielded practical suggestions for measurement in personality research. Some researchers have argued that narrow predictors have little place in the literature and do not contribute incrementally over broad predictors (Salgado, Moscoso, & Berges, 2013). Salgado (2013) suggested that facets of conscientiousness did not display incremental validity over the broader conscientiousness construct in predicting performance. Similarly, Ones and Viswesvaran (1996) suggested that the advantages of narrow predictors are rooted in erroneous beliefs based on statistical artifacts. While such results provide support for the use of broad predictors in the personality-performance relationship, the nature of the performance criterion itself is inherently broad. Hogan and Roberts (1996) countered this conventional wisdom by indicating that the breadth of the criteria should indicate the nature of the predictor; broad criteria should be paired with broad predictors, and narrow criteria should be paired with narrow predictors. Because of the broad nature of the general performance criterion, it is not surprising that prior research has advocated the use of broad personality constructs in predicting performance.

The current literature on team roles has focused on predicting broad team roles from broad personality traits. Until the past decade, role taxonomies have emphasized the importance of discriminating between general task and social roles. With the implementation of a more

rigorous and narrow role taxonomy, there is a need for a greater understanding of narrow personality predictors and narrow role criteria. Given the recent empirical support, narrow personality facets should more appropriately predict role preference than broad FFM traits. As a result, the current study focuses on the relationships between narrow personality traits and personality scores. However, exploratory analyses with factor-level scores of personality and domain-level scores of team roles will be also be conducted to determine the relative gain from using broad vs. narrow predictors and criteria.

Personality and Team Roles

With the development of Mumford's taxonomy (2006), researchers now have an established framework of team member behaviors. Such comprehensive frameworks allow for the examination of direct relationships between individual differences and behaviors relevant to effective team functioning. By developing an understanding of the link between personality and team roles, researchers will be equipped with more detailed information regarding the utility of personality in team composition. The existing research has examined broad personality traits and their respective links with broad team role dimensions, such as task and social roles. At the time of these studies, Mumford's role taxonomy had not yet been developed, leaving researchers to rely on broader role domains. Stewart, Fulmer, and Barrick (2005) found a moderate positive relationship between task role behavior and conscientiousness. Additionally, task roles were found to be negatively related to both neuroticism and extraversion. The relationship between social role behaviors and agreeableness was moderately positive, while social roles maintained a negative relationship with openness to experience. Similarly, Blumberg (2001) found moderately strong relationships between task roles and both agreeableness and conscientiousness. Blumberg

(2001) and Stewart et al. (2005) provided a basic conceptual linkage between personality and team roles, but the broad nature of the constructs yields an inadequate understanding of these complex relationships. Although this early research may provide the foundation for our understanding of the link between personality and team roles, the broad nature of our understanding of the relationship yields minimal practical implications.

The Five Factor Model (FFM) of personality has long been used by researchers and practitioners alike. The FFM offers a simplistic approach to understanding personality attributes and individual behavioral outcomes and allows for comparisons across multiple samples due to its wide implementation. In addition to its parsimonious structure, the broad nature of the FFM traits seems to perform better when examining broad criterion. The FFM is widely considered the dominant model of personality in organizational research. (Goldberg 1993). This taxonomy of personality constructs is broken into five dimensions: neuroticism, extraversion, openness, agreeableness, and conscientiousness. Although the broad nature of the Five Factor Model has its advantages, it offers only basic understanding of the intricate link between personality constructs and various organizational criteria. In order to gain a better understanding of the relationship between personality and roles, we must examine narrow facet-level personality traits and narrow team roles, rather than broad dichotomized domains. Several personality inventories go beyond the FFM and provide more narrow traits within each broad factor. The International Personality Item Pool, for example, was developed by Goldberg (1999) and includes multiple facets for each of the broad five personality domains.

The bandwidth fidelity dilemma has received significant attention in personality research. Several researchers have argued that broad predictors will almost always offer stronger prediction than narrow predictors, regardless of the breadth of the criteria. Others have argued

that narrow predictors will offer more valid prediction of criteria, when the criteria itself is also narrow. Goldberg's IPIP allows for the analysis of both broad and narrow predictors. In the context of team roles, broad FFM traits have been used to predict broad role categories, such as task or social roles. Given that researchers now have a more comprehensive taxonomy of team roles, the validity of narrow personality facets can be examined. While facets of each of the FFM traits are statistically related, they may differentially predict a subset of task or social roles. The friendliness facet of extroversion may be more likely to predict specific social roles, while the assertiveness facet may more aptly predict certain task roles. By analyzing personality and team roles in the broader context, significant statistical information might be lost.

Neuroticism

Individuals high in neuroticism are often described as emotionally unstable, prone to stress, irritable, and insecure (Costa & McCrae, 1992). The IPIP scale further breaks down the construct into the following facets: anxiety, anger, depression, self-consciousness, immoderation, and vulnerability (Goldberg, 1999). Neurotic individuals tend to lack commitment and also do not appear goal or career oriented (Bozionelos, 2004). Meta-analytic results suggest only negligible relationships between the broad construct of neuroticism and team performance overall (Bell, 2007). Prewett et al., (2009) found slightly stronger relationships when the team tasks required higher levels of team interdependence. Additionally, relationships were stronger between personality and behaviors than with performance outcomes (Prewett et al., 2009). The overall inconsistencies in the literature lead to a desire for a more narrow examination of the broader constructs.

By breaking the construct down to the facet level, we have the ability to assess the theoretically relevant relationships with specific team member roles. Specifically, the anger facet of neuroticism taps into irritability and a loss of temper. Individuals high in this facet could struggle to effectively carry out social roles, such as the calibrator or the cooperater. Though individuals high in the anger facet of neuroticism might appear to negatively impact the team as a whole, it may in fact be crucial in certain roles. The critic role is defined as exhibiting behaviors that go against the flow and challenge the purpose or actions of the team as a whole (Mumford et al., 2006). An individual high in anger may be more likely to express disagreement among the group and present some of the more pessimistic views of group assumptions. The self-consciousness facet of neuroticism describes an individual's difficulties in interacting with others. Due to the natural social environment within which most teams function, self-consciousness is expected to be negatively related to all task and social roles.

Hypothesis 1a: Anger will be negatively related to social role performances.

Hypothesis 1b: Anger will be positively related to critic role performance.

Hypothesis 1c: Self-consciousness will be negatively related to all social and task role performances.

Extraversion

Individuals high in extraversion are described as excitement-seeking, sociable, and talkative. Extraverted individuals prefer to seek out social relationships and generally find it easy to be assertive in social situations (Costa & McCrae, 1992). Increased social activity and more positive relationships are generally associated with the construct of extraversion (Watson & Clark, 1997). Goldberg extracted the following six facets from the broader extraversion construct:

friendliness, gregariousness, assertiveness, activity-level, excitement-seeking, and cheerfulness. Extroversion has been shown to possess moderate relationships with team performance (Bell, 2007). The limited effects might be due to the distal nature of the relationship, as other studies have shown more reasonable validity coefficients when extraversion operates through various team processes (Prewett et al., 2009)

Parsing out the facets of extroversion should enhance some of the weak relationships researchers have found between the broader construct and team performance. Given the eclectic facets which comprise the extroversion construct, some components of extroversion should be more predictive of specific social roles, while others should be more predictive of certain task roles. The communicator and cooperator, for example, require individuals to maintain positive relationships and open means of communication. The friendliness facet of extraversion is expected to be mostly beneficial to individuals taking on social roles within the group. Some task roles, on the other hand, require individuals to be more confrontational with the group in order to challenge potential issues of groupthink. Friendliness, in this context, is expected to be negatively related to the critic and calibrator task roles. The assertiveness facet of extraversion is also expected to significantly contribute to the effective functioning of team roles. Several task roles require team members to take initiative and tackle various objectives. The contractor role, for example, requires members to organize essential group functions and delegate tasks and resources (Mumford et al., 2006). Individuals high in assertiveness are readily equipped to handle roles which require some level of initiative.

Hypothesis 2a: Friendliness will be negatively related to critic and calibrator task role performances.

Hypothesis 2b: Friendliness will be positively related to communicator and cooperator role performances.

Hypothesis 2c: Assertiveness will be positively related to the following task role performances: contractor, creator, contributor, completer, and critic.

Openness to Experience

Openness to experience is defined by imagination, innovation, creativity, and unconventionality (Costa & McCrae, 1992). Individuals high in openness find satisfaction in varied job responsibilities and adventurous new activities (Furnham, Petrides, Tsaousis, Pappas, & Garrod, 2005). Openness is broken down into imagination, artistic interests, emotionality, adventurousness, intellect, and liberalism in the IPIP (Goldberg, 1999). Prior research has found minimal negative or negligible relationships between social role behaviors and openness to experience at the broad construct level (Stewart et al., 2005). In the personality-performance relationship, openness generally does not play an important role. In teams where the outcome is innovative and creative in nature, however, openness acts as a strong predictor in team performance (Schilpzand, Herold, & Shalley, 2011).

Although openness does not seem to strongly relate to general team performance, the emotionality facet of openness may have ties to certain social roles outlined in Mumford's (2008) taxonomy. The communicator and calibrator roles require individuals to listen to the contributions and opinions of others and maintain harmony among the greater group. Individuals high in emotionality find it easier to connect with members of the group, which may lead to stronger communication and group cohesion. In this regard, emotionality is expected to be positively related to social role behaviors. Additionally, the intellect facet of openness is

expected to account for several task roles. The creator, contributor, and critic task roles outlined by Mumford et al. require general mental ability and a desire for challenging tasks. Intellect is expected to be positively related to these task roles due to their heavy reliance on one's intelligence.

Hypothesis 3a: Emotionality will be positively related to the communicator and calibrator role performances.

Hypothesis 3b: Intellect will be positively related to the following task role performances: creator, contributor, and critic.

Agreeableness

Agreeable individuals tend to seek out accepting environments and exhibit cooperative and altruistic behaviors (Costa & McCrae, 1992; Barrick, Stewart, & Piotrowski, 2002). Individuals high in agreeableness are more likely to engage in organizational citizenship behaviors which provide benefit to coworkers or the organization as a whole. In the IPIP, the broader personality construct of agreeableness is dissected into the following six facets: trust, morality, altruism, cooperation, modesty, and sympathy. Given the necessary social interaction in the team setting, agreeableness is expected to be positively related to social team roles. Recent meta-analyses have shown medium effect sizes between agreeableness and team performance (Bell, 2007). Prewett et al., (2009) also found small to moderate effect sizes between agreeableness and performance, but only when mean levels or minimum levels of agreeableness within the team were assessed.

While certain facets of agreeableness may display strong relationships with task roles, other facets might negatively predict preferences for other roles. By lumping all facets of

agreeableness together, researchers lose valuable information regarding the true validity of the personality-performance relationship. The altruism facet of agreeableness gauges an individual's concern for others and general desire to assist those in need. Although altruism may be positively related to certain social roles, it is expected to be negatively related to specific task roles. The critic role, for example, emphasizes the importance of challenging others and presenting negative information to the group. Similarly, the cooperation facet of agreeableness is expected to maintain a positive relationship with all of Mumford's social roles. The relationship between cooperation and certain task roles, however, is expected to be negative. The contractor task role requires the individual to organize and coordinate tasks and resources among group members, which may be difficult for an individual high in cooperation. More cooperative individuals are more likely to solicit input from group members, and may not be as stoic in their decision making. Overall, agreeableness facets are expected to be positively related to social roles, and negatively related to the majority of task roles.

Hypothesis 4a: Altruism will be positively related to the following social role performances: cooperator, communicator, and calibrator.

Hypothesis 4b: Altruism will be negatively related to critic role performance.

Hypothesis 4c: Cooperation will be positively related to the following social role performances: cooperator, communicator, and calibrator.

Hypothesis 4d: Cooperation will be negatively related to critic and contractor task role performance.

Conscientiousness

Individuals high in conscientiousness are described as diligent, organized, and achievement-oriented (Costa & McCrae, 1992). Conscientiousness is one of the most commonly utilized individual difference variables in predicting organizational outcomes (Hogan & Roberts, 1996). Although the broad conscientiousness construct might maximize the prediction of overall organizational outcomes, the facet approach will provide greater validity in understanding specific criteria, such as team roles (Mount & Barrick, 1995; Murphy & Lee, 1994). The IPIP partials the broad construct of conscientiousness into self-efficacy, orderliness, dutifulness, achievement-striving, self-discipline, and cautiousness at the facet level (Goldberg, 1999). Previous researchers have found a moderate positive relationship between the broad construct of conscientiousness and the task role domain (Blumberg, 2001; Stewart et al., 2005). Additionally, researchers have found small to moderate relationships between conscientiousness and team performance (Bell, 2007; Prewett et al., 2009).

The self-efficacy facet of conscientiousness is expected to be positively related to the contractor, contributor and completer task roles. These task roles require expertise and an ability to excel in task completion and coordination. Individuals with a stronger sense of confidence in their own ability should find less anxiety and minimal difficulty in executing the final steps of a task or project. Orderliness, the facet defining organizational abilities, is expected to be related to the contractor role. The contractor role requires the organization and ability to allocate tasks and assure team efficiency (Mumford et al., 2006). The dutifulness facet of conscientiousness taps into an individual's willingness to deliver on their assigned task and fulfill their promise. Thus, dutifulness is expected to be related to the completer task role. Achievement-striving gauges an

individual's work ethic and desire to exceed expectations. Individuals who are high in achievement-striving are expected to prefer the completer and contributor task roles.

Hypothesis 5a: Self-efficacy will be positively related to contractor, contributor, and completer task role performance.

Hypothesis 5b: Orderliness will be positively related to contractor role performance.

Hypothesis 5c: Dutifulness will be positively related to completer role performance.

Hypothesis 5d: Achievement-striving will be positively related to completer and contributor task role performance.

Role Preferences

While the relationship between personality and role performance bridges the problematic distal gap in the personality-team performance relationship, the constructs themselves may still not offer the most comprehensive explanation for the operation of personality in team contexts. By introducing an individual's preference to perform certain roles, the personality-performance relationship becomes more comprehensive. Role preferences capture the general nature of one's personality and place it into a specific context, providing a connection between an individual's general tendencies (across contexts) and team- or situation-specific behaviors.

Team role preferences measure a team member's desire to fulfill certain behaviors within the team context. Although several taxonomies of team roles currently exist, there has been little progress in measuring individual preferences to perform specific roles within teams. While measuring exact team role behaviors is certainly valuable, it is also crucial to measure the roles which individuals prefer to undertake. Given the composition of any given team, some members may not have the opportunity to perform their preferred role either because the role is not

relevant or another member is performing the role adequately. By not measuring such preferences, researchers fall short of gathering useful information about their criteria.

Role preferences may be derived from a number of factors, including personality, past experience, team type, or even the specific task at hand. The preference to perform certain behaviors within the team is targeted towards specific team roles, theoretically providing a strong mediational link between personality and role performance. The relationship between personality and preferences can be viewed from a fit perspective, with certain facets being more strongly associated with preferences for some roles more than others. While role preferences are expected to enhance the relationship between personality and performance, a direct effect is still hypothesized.

Hypothesis 6: Team role preferences will partially mediate the relationship between personality and the corresponding role performance ratings.

Current Study

With the accelerating transition to a more team-oriented workforce, research on team composition and member dispositions has become increasingly relevant. In particular, researchers have focused on team level predictors and outcomes. However, little attention has been given to the importance of individual-level predictors and group-level outcomes. A large reason for such a critical gap in the literature is the lack of an underlying framework to link such cross-level analyses. The goal of the current study is to shed light on the importance of understanding individual contributions within the team context. More specifically, team roles will provide a conceptual link between individual difference variables, member dispositions, and

group level outcomes. Table 2 presents the study hypotheses which propose relationships between facet-level personality traits and specific roles within the team.

In addition to providing significant contributions within the team literature, the findings of the current study may have a crucial impact on organizations. With the shift towards a more team-workforce, organizations will need to compile effective workgroups. Although the team role literature acknowledges that not all roles must be filled within one team, the absence of certain roles may prove to be detrimental to team performance. The results of the current study allow researchers and practitioners alike to examine personality data to determine which roles are most strongly predicted from certain traits. Equipped with the proper results, organizations can more suitably compile workgroups based on team member personality and preferences for team roles.

Table 1. *Theoretical Linkages: Personality and Role Preferences*

	<u>Facet</u>	<u>Role Preference</u>
<u>Neuroticism</u>	Anger	Critic, Communicator (-), Cooperator (-), Calibrator (-), Completer (-), Contractor (-), Contributor (-), Creator (-)
	Self-Consciousness	Critic (-), Communicator (-), Cooperator (-), Calibrator (-), Completer (-), Contractor (-), Contributor (-), Creator (-)
<u>Extroversion</u>	Friendliness	Communicator, Cooperator, Calibrator (-), Critic (-)
	Assertiveness	Contractor, Creator, Contributor, Completer, Critic
<u>Openness</u>	Emotionality	Communicator, Calibrator
	Intellect	Creator, Contributor, Critic
<u>Agreeableness</u>	Altruism	Cooperator, Communicator, Calibrator, Critic (-)
	Cooperation	Cooperator, Communicator, Calibrator, Critic (-), Contractor (-)
<u>Conscientiousness</u>	Self-Efficacy	Contractor, Contributor, Completer
	Orderliness	Contractor
	Dutifulness	Completer
	Achievement-Striving	Completer, Contributor

Table 2. *Study Hypotheses*

H1a.	Anger will be negatively related to social role performance.
H1b.	Anger will be positively related to critical role performance.
H1c.	Self-consciousness will be negatively related to all social and task role performances.
H2a.	Friendliness will be negatively related to critic and calibrator task role performance.
H2b.	Friendliness will be positively related to communicator and cooperator role performance.
H2c.	Assertiveness will be positively related to the following task role performances: contractor, creator, contributor, completer, and critic.
H3a.	Emotionality will be positively related to communicator and calibrator role performance.
H3b.	Intellect will be positively related to the following task role performances: creator, contributor, and critic.
H4a.	Altruism will be positively related to the following social roles performances: cooperator, communicator, and calibrator.
H4b.	Altruism will be negatively related to critic role performance.
H4c.	Cooperation will be positively related to the following social role performances: cooperator, communicator, and calibrator.
H4d.	Cooperation will be negatively related to critic and contractor task role performance.
H5a.	Self-efficacy will be positively related to contractor, contributor, and completer task role performance.
H5b.	Orderliness will be positively related to contractor role performance.
H5c.	Dutifulness will be positively related to completer role performance.
H5d.	Achievement-striving will be positively related to completer and contributor task role performance.
H6.	Team role preferences will partially mediate the relationship between personality and role performance ratings.

CHAPTER II

METHODS

Participants

The participants in this study are students from the College of Business Administration at Central Michigan University. The undergraduates in this study are participating in a college-required project that spans across multiple disciplines. The project (CORE) requires students to compile a business plan for a company, including but not limited to, company finances, marketing, accounting, and sales. Students are required to work in teams throughout one semester in their junior or senior year in the College of Business Administration. The teams range in size from four to six individuals.

Procedure

Participants were recruited through the School of Business Marketing courses at Central Michigan University. The measures in this study were divided across two time points. The initial survey was distributed at the beginning of the academic semester and contained items pertaining to team role preferences, personality, and demographic information. The second survey was distributed at the end of the semester. The second survey assessed role performance and team process variables. Respondents were given the option of completing each survey in class with a pencil-and-paper version, or online through the use of SurveyMonkey. Students who completed the surveys were given extra-credit from their respective professors.

Measures

Personality

Personality constructs were measured using Goldberg's (1999) International Personality Item Pool (IPIP) facet scale. Participants responded using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Due to the length of the surveys, only theoretically relevant facets were included in this study. Internal consistencies for each facet scale range from $\alpha=.73$ to $\alpha=.87$.

Role Performance

Role performance was measured using a 27-item scale developed by Mumford et al (2008). The items in the measure consist of critical performance-related behaviors pertaining to each of the roles outlined in Mumford's (2006) taxonomy. Each team member rated himself/herself and also rated each team member on specific role behaviors. Prior to making ratings, a brief description of each of the 10 roles was provided. The items ask respondents to indicate the extent to which each team member performs a specific behavior, from 1 (no extent) to 5 (a very great extent). Sample items include: "Helps to settle conflicts between members of the team", and "Suggests positive ways for the team members to interact, such as taking turns, showing respect, and being open to new ideas" (Mumford et al., 2008). In order to obtain the most accurate performance ratings, self-ratings on role performance will be excluded, and an average of the other member ratings will be used as the role performance score. The internal consistencies for the role performance rating scales range from $\alpha=.74$ to $\alpha=.87$.

Role Preference

Team role preferences were measured using a scale developed by Grossenbacher (2012). The role preference scale was adopted from the Team Role Performance measure (Mumford, 2008) and computes a preference score for each of the 10 specific roles: contractor, contributor, completer, creator, critic, communicator, cooperater, calibrator, collector, and consul. The team roles are derived from Mumford's (2006) taxonomy of task, social, and boundary spanning roles. The current study uses only the task and social role domains, resulting in a total of 8 specific roles. Boundary spanning roles were not included due to the limited relevance of the roles with the current sample. Respondents were asked to indicate the degree to which they prefer to perform certain behaviors on a 5-point Likert scale. Sample items include: "I prefer to monitor team members to ensure that they complete tasks on time" and "I prefer to provide deadlines for the completion of tasks to other team members". The internal consistencies for the 8 roles ranged from $\alpha=.71$ to $\alpha=.83$ (Grossenbacher, 2012).

Data Analysis

Means, standard deviations, intercorrelations, and internal consistencies for all measures were assessed. Additionally, data was examined for normality. Prior to analyzing the model, the extent of the nesting from team membership was estimated on individual role performances. Due to the presence of nesting effects, residual values were obtained using HLM. Nesting analyses were conducted by treating the teams as the level-two units, with individuals as level-one units and individual role performance as the outcome. Intraclass correlation coefficients (ICC's) were calculated and the percentage of variance in role performance due to group membership was removed. With nesting effects present, OLS would result in downwardly biased estimates of the

standard errors, yielding a higher type 1 error rate (Hox, 2010). By obtaining residuals through HLM, team membership was controlled for, resulting in more accurate statistical significance tests between personality and role preferences.

The hypothesized main effects were assessed using simple bivariate correlation methods. Personality-role performance relationships were assessed initially. Because of the near-zero relationships between personality and role performance, mediation analyses were not conducted. The personality-preference relationship was also conducted using simple bivariate correlation techniques. To further understand the relationship between personality and role preferences, hierarchical regression was conducted using narrow personality facets and broad constructs domains to predict role preferences.

CHAPTER III

RESULTS

Data Cleaning

Prior to testing the hypotheses, data were assessed using two to four reading check items, based on the current time point during data collection. The initial survey contained fewer overall items, and in turn contained fewer reading check items than the final survey. The reading check items simply asked the respondent to indicate a specific response, thus ensuring the respondent was carefully reading each survey item. Respondents who incorrectly endorsed a false response option to any of the reading check items were removed from the dataset prior to analyses. From the original sample of 251 students, 1.6% (4 participants) were removed due to non-purposeful responding.

After eliminating non-purposeful respondents, the quantity and quality of team role ratings were assessed. The current study utilized a 360 degree approach, requesting not only self-ratings of role performance, but also role performance ratings for each of the remaining team members. Given the support in the literature for the use of other ratings (Conway & Huffcutt, 1997), an average score was created using the composite of the other team members' ratings for each target ratee. In order to ensure reliable ratings, a respondent's data was only retained if at least two or more team members completed the ratee's role performance ratings. Since the data collection took place over multiple time points, it was expected that respondents will drop out over the course of the data collection. The sample decreased from $n=247$ to $n=175$ when eliminating respondents who did not have at least two or more other team member ratings.

Descriptive Statistics and Data Transformation

Before testing hypotheses, data was assessed for linearity and normality. Using scatterplots in SPSS, the relationships between the dependent variables and independent variables appear to be linear, thus upholding the assumption of linearity. The data was also assessed for normality. Histograms were used to determine if the assumption of bivariate normality was violated. The results indicate that most variables had approximately normal distributions, upholding the assumption of normality.

While the standard assumptions surrounding correlation and regression did not require any data transformations, an alteration in the measure required that some data be transformed before beginning analyses. Prior to implementing the second wave of the survey, the role rating form was slightly altered. In addition to issues with time constraints, preliminary analyses of the role scores showed high intercorrelations among the roles, which could potentially be attributed to the lengthy nature of the measure. The original measure of team roles included three items per role with a corresponding 5-point Likert response scale. In order to shorten the length of the rating form, the three role items were used as behavioral descriptors of the role dimension being rated, and the response scale was expanded to 7-points to allow for more variation in responses (Appendix D). The three items used as the behavioral descriptors displayed excellent internal consistency and high intercorrelations, thus combining the roles into a single item was deemed appropriate. Given the discrepancy in the number of response options across survey waves, the data was standardized using z-scores. Both waves of data were standardized separately prior to combining in the final data set.

Nesting Effects

Prior to analyzing the model, the extent of nesting in individual role performance was estimated to account for team membership. In order to assess nesting effects, teams were treated as the level-two units, with individuals as level-one units and individual role performance as the outcome. A separate model must be analyzed for each outcome variable, resulting in eight separate models to test the nesting effects for each team role. The intraclass correlation coefficient (ICC) provides the percentage of variance in the outcome due to group membership. ICCs are calculated in HLM by dividing the between group variance by the total variance, with values of .10 or greater typically used to indicate nesting.

As expected, the results indicated that significant nesting effects were present across all team member role performance ratings. Table 1 shows the presence of nesting effects, with ICC's ranging from .26 to .56. Due to the heavy presence of nesting effects within the outcome variables, residuals were obtained using HLM. Residuals are computed by estimating the error term associated with group membership, which is equivalent to the group's mean minus the grand mean for the role being examined. The resulting error term is then subtracted from the individual's score to obtain the residual. The residual values for each outcome variable allow team membership to be controlled, thus providing more accurate estimates of the relationships between variables. The hypothesis testing was conducted using the residuals obtained from the HLM results.

Reliability Analysis

Multiple analyses were conducted to determine the reliability of the team member role performance ratings. Internal consistencies were very high, ranging from $\alpha=.89$ to $\alpha=.95$. Alphas

were calculated utilizing the first wave of data collection containing three items per role for every team member. Rater agreement was also assessed using the r_{wg} index of agreement. r_{wg} calculates the degree to which different rater's assessments of a ratee are interchangeable. Agreement is reached when the variance of the observed ratings is shown to be significantly smaller than the variance expected if scores were distributed randomly (James, Demaree, & Wolf, 1984). Rater agreement values were obtained using Excel Tools (Biemann, Cole, & Voelpel, 2012) to calculate the average level of agreement of the role performance ratings for each participant. As seen in Table 3, the median values ranged from $r_{wg} = .81$ to $r_{wg} = .88$.

Table 3. *Descriptive Statistics and Reliability Coefficients for Team Member Role Ratings*

	Mean	SD	Alpha	ICC	r_{wg}
Contractor	3.38	1.67	.92	.26	.88
Creator	3.33	1.68	.91	.31	.84
Contributor	3.23	1.82	.95	.44	.82
Completer	3.21	1.79	.95	.36	.85
Critic	3.31	1.64	.90	.36	.81
Cooperator	3.17	1.79	.89	.56	.87
Communicator	3.14	1.85	.93	.54	.88
Calibrator	3.25	1.68	.89	.38	.83

Note. $n=175$.

Intercorrelations among Team Roles

Prior to assessing hypothesized mediation models, intercorrelations were examined to determine the similarity among team role performance ratings. Preliminary intercorrelations between team member role performance ratings revealed significantly high relationships among both task and social roles, ranging from $r=.65$ to $r=.87$. The high intercorrelations were not surprising, as group level effects tend to inflate correlations for any scores within the group, and

role ratings were conducted entirely within each team. Due to the effects of group membership on team role performance, intercorrelations were then examined using residual values obtained from HLM. Once nesting effects were removed, the intercorrelations decreased, ranging from $r=.53$ to $r=.84$ (Table 4). The decrease in intercorrelation coefficients reveals significant effects of group membership on member's fulfillment of certain role behaviors. In assessing response patterns across role performance ratings, histograms revealed bimodal distributions for most roles, indicating that few team members endorsed the midpoints of the scale.

Table 4. *Intercorrelations among Team Member Role Performance Ratings with Nesting Effects Removed*

	1	2	3	4	5	6	7	8
1. Contractor	(.92)							
2. Creator	.81	(.91)						
3. Contributor	.70	.81	(.95)					
4. Completer	.75	.78	.80	(.95)				
5. Critic	.68	.82	.84	.75	(.90)			
6. Cooperator	.53	.65	.60	.64	.66	(.89)		
7. Communicator	.57	.71	.67	.70	.68	.79	(.93)	
8. Calibrator	.67	.77	.71	.66	.75	.74	.69	(.89)

Note. $n=175$. All correlations significant, $p<.05$. Scale reliabilities are reported on the main diagonal in parentheses.

Intercorrelations among Team Role Preferences

Intercorrelations among team role preferences were smaller than intercorrelations among team role performance ratings, as seen in Table 5. While the critic role preference showed a more definitive relationship with task roles compared with social roles, the magnitude of the correlations was noticeably weaker than the role performance ratings. Similar to the role performance ratings, contractor preference displayed strong relationships with both task and social role preferences.

Table 5. *Intercorrelations among Team Member Role Preferences*

	Mean	SD	1	2	3	4	5	6	7	8
1. Contractor	3.37	.91	(.73)							
2. Creator	3.71	.75	.36*	(.73)						
3. Contributor	2.50	1.04	.27*	.36*	(.77)					
4. Completer	3.37	.88	.45*	.39*	.39*	(.76)				
5. Critic	2.85	.85	.11	.27*	.35*	.21*	(.73)			
6. Cooperator	4.06	.77	.38*	.21*	.19*	.26*	.10	(.74)		
7. Communicator	4.17	.80	.33*	.20*	.08	.23*	-.02	.55*	(.81)	
8. Calibrator	3.66	.96	.29*	.30*	.16*	.32*	.17*	.32*	.40*	(.83)

Note. $n=175$. * $p<.05$. Scale reliabilities are reported on the main diagonal in parentheses.

Intercorrelations among Personality Traits

Intercorrelations among the personality facets are presented in Table 6. The intercorrelations ranged from $r=-.52$ to $r=.60$, with the strongest relationship occurring among the self-efficacy and achievement facets of conscientiousness. As expected, the neuroticism facets correlated negatively with most of the remaining personality traits. In contrast, the conscientiousness facets showed strong positive correlations with most facets outside of anger and self-consciousness.

Table 6. *Intercorrelations among Personality Facets*

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Anger	2.37	.74	(.75)											
2. Self-Consciousness	2.39	.76	.10	(.61)										
3. Friendliness	3.95	.64	-.31*	-.52*	(.80)									
4. Assertiveness	3.78	.72	.08	-.36*	.36*	(.85)								
5. Emotionality	3.44	.66	.05	-.10	.19*	.14	(.63)							
6. Intellect	3.31	.76	-.01	-.23*	.13	.10	.15	(.70)						
7. Altruism	4.03	.53	-.28*	-.08	.39*	.19*	.36*	.15	(.70)					
8. Cooperation	4.01	.81	-.51*	.03	.12	-.06	.14	-.06	.29*	(.84)				
9. Self-Efficacy	4.14	.55	-.21*	-.13	.33*	.38*	.05	.23*	.33*	.16*	(.82)			
10. Orderliness	3.60	.90	-.16*	-.07	.14	.23*	.19*	.01	.26*	.23*	.20*	(.84)		
11. Dutifulness	4.02	.60	-.31*	-.01	.19*	.25*	.12	.08	.31*	.41*	.35*	.35*	(.78)	
12. Achievement	4.10	.61	-.24*	-.10	.34*	.45*	.09	.17*	.40*	.32*	.60*	.33*	.57*	(.80)

Note. $n=175$. * $p<.05$. Scale reliabilities are reported on the main diagonal in parentheses.

Hypothesis Testing

Prior to testing for mediation, it is first necessary to establish relationships between the predictor and the criterion (Baron & Kenny, 1986). Without a significant relationship between personality and role performance ratings, there is no significant variance to account for in which role preferences can be attributed. The results are reviewed by personality traits as they relate to role preferences and role performances. Both self-ratings and peer-ratings of performance are presented in the subsequent tables.

Given the issues surrounding the use of self-ratings, most researchers opt to avoid self-rated performance as the main criterion in their studies to limit issues surrounding common method variance and a variety of rater biases associated with self evaluations. As noted in the tables, there is a substantial difference in sample size between self-rated role performance and peer-rated role performance. The sample size discrepancy is due to respondents not providing self-ratings of role performance, while having at least two team members of their team provide role performance ratings of them. The presentation of self-rated performance is exploratory in nature, with the main criterion being peer-rated performance. Later sections will discuss the relationship between role preferences and role performances.

Neuroticism

As seen in Table 7, role preferences were found to have a stronger relationship with the neuroticism facets than peer-rated role performance, on average. Peer-rated calibrator performance, however, showed a significant relationship with anger, but in the opposite direction as hypothesized, $r=.17, p<.05$. With the exception of calibrator performance, the relationship between each performance rating and the corresponding personality facet was non-significant,

with almost all coefficients maintaining near-zero values. The relationships between the role preference ratings and neuroticism facets, however, were much stronger. The correlation between contributor role preference and anger was strongest, but in the opposite direction of the original hypothesis, $r=.25, p<.05$. Anger also displayed a moderate negative relationship with communicator role preference, $r=-.18, p<.05$. Hypothesis 1 also posited negative relationships between self-consciousness and both task and social roles. All of the correlations between self-consciousness and the role preferences were in the correctly hypothesized direction, with the strongest relationship being between self-consciousness and completer preference, $r=-.22, p<.05$. Similarly, contractor and creator preferences were significantly related to the self-consciousness facet of neuroticism, $r=-.19, p<.05$.

Similar to the results utilizing peer-performance as the criterion, the self-ratings of performance displayed equally disappointing relationships. As seen in Table 7, the correlations between self-consciousness and all of the task role self-performance ratings were in the opposite of the hypothesized direction and the coefficients were all near-zero. The relationship between anger and cooperator self-rated role performance was moderate and in the hypothesized direction, $r=-.18, p<.10$. Similarly, the correlation between anger and the critic role self-ratings was noteworthy, $r=-.14, p<.15$.

Table 7. Correlations between Neuroticism Facets, Self and Other Role Performance, and Preference

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
Anger					
	Contractor	H1	.09	.06	.02
	Creator	H1	.06	.06	.01
	Contributor	H1	-.01	.05	.25*
	Completer	H1	-.11	.03	.04
	Critic	H1	-.14	.08	.15*
	Cooperator	H1	-.18	.14	-.01
	Communicator	H1	-.07	.08	-.18*
	Calibrator	H1	-.06	.17*	-.07
	General Task	-	-.06	.14	.15*
	General Social	-	-.11	.06	-.14
Self-Consciousness					
	Contractor	H1	.09	-.05	-.19*
	Creator	H1	.02	-.03	-.19*
	Contributor	H1	.04	-.07	-.04
	Completer	H1	.06	-.06	-.22*
	Critic	H1	.08	-.06	-.01
	Cooperator	H1	-.07	-.09	-.06
	Communicator	H1	-.04	-.05	-.10
	Calibrator	H1	-.04	.01	-.10
	General Task	-	.08	-.04	-.19*
	General Social	-	-.05	-.06	-.11

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H1. Non-hypothesized relationships noted with dash.

Extroversion

Overall, correlations between extroversion facets and both self- and peer-rated performance were negligible. The relationship between friendliness and self-rated cooperator role performance, however, was in the anticipated direction and nearly significant, $r=.18, p<.10$. Significant relationships were found between friendliness and both communicator and calibrator role preferences, $r=.33, p<.05, r=.21, p<.05$, respectively. The assertiveness facet of extroversion was expected to display positive relationships with all task roles. The relationship between assertiveness and completer role preference was very strong, $r=.40, p<.05$. Significant relationships were also found with contractor, creator, and contributor role preferences.

Table 8. *Correlations between Extroversion Facets, Self and Other Role Performance, and Preference.*

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
Friendliness					
	Contractor	-	.06	.02	.14
	Creator	-	-.01	-.07	.16*
	Contributor	-	.16	-.07	-.11
	Completer	-	.13	-.04	.08
	Critic	H2	.05	-.08	-.04
	Cooperator	H2	.18	-.02	.14
	Communicator	H2	.01	.01	.33*
	Calibrator	H2	.06	-.09	.21*
	General Task	-	.08	-.04	.06
	General Social	-	.09	-.05	.29*

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H2. Non-hypothesized relationships noted with dash.

Table 8.. *Correlations between Extroversion Facets, Self and Other Role Performance, and Preference.* (continued)

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
Assertiveness					
	Contractor	H2	-.09	.01	.35*
	Creator	H2	-.08	.03	.31*
	Contributor	H2	-.08	.09	.19*
	Completer	H2	-.07	.09	.40*
	Critic	H2	-.17	.04	.04
	Cooperator	-	-.09	.12	.09
	Communicator	-	-.14	.13	.12
	Calibrator	-	-.12	.09	.21*
	General Task	-	-.11	.12	.38*
	General Social	-	-.12	.06	.18*

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H2. Non-hypothesized relationships noted with dash.

Openness to Experience

The relationships between emotionality and role performances were near-zero for both self and peer-rated performance, but the corresponding preferences yielded stronger results. The communicator and calibrator preferences were both positively related to emotionality, $r=.29$ $p<.05$, $r=.24$ $p<.05$, respectively. Intellect was hypothesized to be positively related to creator, contributor, and critic task roles. While none of the hypothesized role performance relationships were significant, the correlation between intellect and peer-rated creator role performance were respectable, $r=.13$, $p>.05$. Similarly, the relationship between intellect and self-rated critic performance was noteworthy, $r=-.16$, but it was in the opposite direction as hypothesized. The corresponding role preferences did, however, yield significant relationships with the intellect facet of openness. The correlation between creator role preference and intellect was strongest,

$r=.39, p<.05$. Significant relationships were also found between intellect and both contributor and critic role preferences.

Table 9. *Correlations between Openness Facets, Self and Other Role Performance, and Preference.*

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
Emotionality					
	Contractor	-	.14	-.01	.10
	Creator	-	.01	-.02	-.01
	Contributor	-	.12	.01	-.05
	Completer	-	.10	-.01	.13
	Critic	-	.03	.01	-.16*
	Cooperator	-	.03	-.02	.15*
	Communicator	H3	-.06	.08	.29*
	Calibrator	H3	-.01	-.04	.24*
	General Task	-	.09	.01	.01
	General Social	-	-.02	-.01	.29*
Intellect					
	Contractor	-	-.15	.05	.09
	Creator	H3	-.15	.13	.39*
	Contributor	H3	-.15	.03	.29*
	Completer	-	-.16	.01	.23*
	Critic	H3	-.16	.11	.16*
	Cooperator	-	-.14	.08	.10
	Communicator	-	-.05	.07	.03
	Calibrator	-	-.21*	.06	.12
	General Task	-	-.17	.08	.35*
	General Social	-	-.14	.07	.12

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H3. Non-hypothesized relationships noted with dash.

Agreeableness

The relationship between altruism and each peer-rated social role performance rating was insignificant and near-zero. While the relationships between altruism and self-rated role performance were slightly higher, the relationships were still negligible. Role preferences yielded definitively stronger relationships with altruism. All three role preference correlation coefficients reached significance, with communicator preference having the largest magnitude, $r=.46, p<.05$. The relationships between altruism and both critic role performance and preference were in the anticipated direction, but the coefficients were both minimal. Similar to agreeableness, the relationships between cooperation and the peer-rated role performances did not reach significance. Self-rated contractor performance did display a moderate relationship with cooperation, $r=-.20$. All of the social role preferences, however, did display significant relationships with cooperation. The strongest relationship was between cooperation and communicator preference, $r=.26, p<.05$.

Table 10. *Correlations between Agreeableness Facets, Self and Other Role Performance, and Preference.*

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
Altruism					
	Contractor	-	.08	-.04	.20*
	Creator	-	.04	-.03	.12
	Contributor	-	.15	-.04	.01
	Completer	-	.11	-.07	.21*
	Critic	H4	.10	-.04	-.12
	Cooperator	H4	.13	.01	.35*
	Communicator	H4	-.08	-.06	.46*
	Calibrator	H4	.06	-.03	.27*
	General Task	-	.10	-.03	.13
	General Social	-	.04	-.05	.45*
Cooperation					
	Contractor	H4	-.20*	-.06	.10
	Creator	-	-.10	-.03	.03
	Contributor	-	-.16	.01	-.12
	Completer	-	-.19	-.04	.02
	Critic	H4	-.01	-.05	-.06
	Cooperator	H4	-.10	-.04	.18*
	Communicator	H4	-.18	-.03	.26*
	Calibrator	H4	-.09	-.11	.24*
	General Task	-	-.14	-.07	-.02
	General Social	-	-.13	-.04	.29*

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H4. Non-hypothesized relationships noted with dash.

Conscientiousness

As seen in Table 11, the relationship between each role performance rating and the corresponding conscientiousness personality facet was non-significant, with several coefficients maintaining near-zero values. As hypothesized, the corresponding task role preferences displayed significant relationships with self-efficacy. The correlation between completer role preference and self-efficacy was the strongest hypothesized relationship, $r=.42, p<.05$. Contractor role preference was also significantly related to orderliness as hypothesized, $r=.29, p<.05$. Similarly, the relationship between dutifulness and the completer task role preference was significant, $r=.24, p<.05$. Lastly, achievement-striving was hypothesized to display positive relationships with completer and contributor role preferences. Both relationships were in the hypothesized direction, however the completer preference was the only coefficient to reach significance, $r=.31, p<.05$.

Table 11. *Correlations between Conscientiousness Facets and Role Performance and Preference.*

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
Self-Efficacy					
	Contractor	H5	.07	-.03	.30*
	Creator	-	.07	-.05	.43*
	Contributor	H5	.09	-.11	.32*
	Completer	H5	.11	-.05	.42*
	Critic	-	.09	-.10	.06
	Cooperator	-	.18	-.08	.27*
	Communicator	-	.09	-.06	.24*
	Calibrator	-	.06	-.10	.23*
	General Task	-	.10	-.09	.46*
	General Social	-	.12	-.07	.31*
Orderliness					
	Contractor	H5	.01	.02	.29*
	Creator	-	.01	-.02	.06
	Contributor	-	-.02	.04	-.04
	Completer	-	-.05	-.01	.16*
	Critic	-	.16	-.01	-.14
	Cooperator	-	.08	.01	.15*
	Communicator	-	-.05	.01	.16*
	Calibrator	-	.06	-.01	.08
	General Task	-	.03	.01	.09
	General Social	-	.04	.01	.16*

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H4. Non-hypothesized relationships noted with dash.

Table 11. *Correlations between Conscientiousness Facets and Role Performance and Preference.*(continued)

Facet	Role	Hypothesis	Self-rated Performance	Peer-rated Performance	Preference
<i>Dutifulness</i>					
	Contractor	-	.05	-.02	.31*
	Creator	-	.09	.01	.28*
	Contributor	-	.02	-.02	-.01
	Completer	H5	.04	-.03	.24*
	Critic	-	.11	-.01	-.07
	Cooperator	-	.03	.03	.20*
	Communicator	-	.01	.04	.26*
	Calibrator	-	.03	.04	.21*
	General Task	-	.07	.04	.21*
	General Social	-	.03	-.02	.28*
<i>Achievement</i>					
	Contractor	-	.06	.02	.36*
	Creator	-	-.03	.02	.37*
	Contributor	H5	-.01	-.03	.10
	Completer	H5	.02	-.03	.31*
	Critic	-	-.07	-.01	-.06
	Cooperator	-	.08	.05	.29*
	Communicator	-	.02	.03	.29*
	Calibrator	-	.01	.02	.21*
	General Task	-	-.01	.03	.32*
	General Social	-	.04	-.01	.33*

Note. $n=91$ for Self-Performance. $n=175$ for Peer-Performance and Preference. * $p<.05$. Hypothesized relationships noted with H5. Non-hypothesized relationships noted with dash.

Role Preferences and Role Performance Ratings

As seen in Table 12, correlations between role preferences and peer-rated role performance ratings yielded mostly insignificant results. The main diagonal of the matrix displays the correlation between each role preference and its corresponding role performance rating. The coefficient with the strongest positive relationship is between the completer role preference and role performance, $r=.13, p<.05$. Several role preferences correlated more highly with non-corresponding role performance ratings than its own performance rating. Cooperator role preference, for example, displayed a significant relationship with completer role performance, $r=.19, p<.05$. The cooperator preference relationship with its corresponding performance rating, however, was near-zero and negative, $r=-.05, p>.05$. At the broad level, general task preference and social preference also showed near-zero correlations with their corresponding role performance scores, $r=.05$ and $r=-.07$, respectively. Overall, none of the expected performance-preference relationships reached significance. Similarly, self-rated role performance scores also maintained near-zero or negative relationships with the corresponding role preferences. The correlations between self-ratings of role performance and peer-ratings of role performance ranged from $r= .31$ to $r=.52$

Table 12. *Correlation between Team Member Role Performance Ratings and Role Preferences*

Performance	Preference							
	1	2	3	4	5	6	7	8
1. Contractor	-.03	.01	.04	.09	.03	.03	.03	.11
2. Creator	-.05	-.01	.04	.11	-.02	-.05	-.03	.03
3. Contributor	-.02	-.01	.06	.18*	.05	-.07	-.07	.03
4. Completer	-.06	-.06	.01	.13	-.06	-.14	-.11	.04
5. Critic	-.01	-.02	.03	.13	.01	-.10	-.09	.06
6. Cooperator	.06	.09	.07	.10	-.01	-.13	-.09	.04
7. Communicator	.02	-.01	.02	.11	-.02	-.14	-.14	.01
8. Calibrator	.03	-.01	.04	.15*	-.02	-.09	-.03	.03

Note. $n = 175$. Rows represent role performance ratings and columns 1 through 8 represent the corresponding role preferences. Coefficients in the diagonal represent the corresponding role domain that should exhibit the highest correlation.

Exploratory Analyses

Broad vs. Narrow Predictors

Further exploratory analyses were conducted to determine the relative gain from using broad vs. narrow predictors and criteria. Given the limited time available for respondents to complete the survey, only two facet scales were distributed for each broad FFM trait, with the exception of conscientiousness. Since four facet scales were collected for conscientiousness, the broad vs. narrow analyses will be conducted solely utilizing this construct. Other constructs will be assessed to analyze which facet is driving the magnitude of the relationship between role preferences and FFM traits.

Neuroticism

In the first hierarchical regression model (Table 13), neuroticism shows almost unanimously negative relationships with each role preference, with the exception of the critic and

contributor roles. While anger accounts for a significant amount of variance in the contributor role preference beyond self-consciousness, $\Delta R^2=.067$, $p<.05$, the majority of the relationships between neuroticism and role preferences are largely driven by the self-consciousness facet. In particular, self-consciousness accounts for a significant amount of variance beyond anger for overall task preferences, $\Delta R^2=.041$, $p<.05$.

Table 13. *Hierarchical Regression Results Relating Neuroticism and Role Preferences*

<u>Role Preference</u>	<u>Neuroticism</u>	<u>Anger</u>		<u>Self-Consciousness</u>	
	<i>r</i>	<i>β</i>	ΔR^2	<i>β</i>	ΔR^2
Contractor	-.11	.043	.002	-.195	.038*
Creator	-.13	.025	.001	-.196	.038*
Contributor	.14	.259	.067*	-.065	.004
Completer	-.12	.065	.004	-.222	.049*
Critic	.09	.147	.021	-.023	.001
Cooperator	-.11	-.093	.009	-.051	.003
Communicator	-.18*	-.170	.028	-.075	.006
Calibrator	-.12	-.060	.004	-.094	.009
General Task	-.03	.171	.029*	-.204	.041*
General Social	-.17	-.135	.018	-.094	.009

Note. $n=175$. * $p<.05$.

Extroversion

As seen in Table 14, extroversion has moderately strong relationships with both task and social role preferences. Of interest, both friendliness and assertiveness account for incremental variance in contributor preference, however the relationships are pulling in the opposite direction; the resulting zero-order correlation is thus near-zero, $r=.06$. Additionally, assertiveness accounts for incremental variance beyond friendliness for general task role preference, $\Delta R^2=.153$, $p<.05$.

Table 14. *Hierarchical Regression Results Relating Extroversion and Role Preferences*

<u>Role Preference</u>	<u>Extroversion</u>	<u>Friendliness</u>		<u>Assertiveness</u>	
	<u>r</u>	<u>β</u>	<u>ΔR^2</u>	<u>β</u>	<u>ΔR^2</u>
Contractor	.30*	.003	.000	.353	.108*
Creator	.29*	.055	.003	.289	.073*
Contributor	.06	-.210	.038*	.270	.064*
Completer	.30*	-.077	.005	.426	.158*
Critic	.01	-.059	.003	.065	.004
Cooperator	.14	.127	.014	.047	.002
Communicator	.26*	.331	.095*	-.003	.000
Calibrator	.25*	.153	.020*	.150	.020
General Task	.28*	-.099	.009	.419	.153*
General Social	.28*	.257	.057*	.089	.007

Note. $n=175$. * $p<.05$.

Openness to Experience

The broad openness construct displayed moderately strong positive relationships with the majority of role preferences. Intellect contributed a significant amount of variance for task role preferences above beyond the variance accounted for by emotionality. In particular, intellect accounted for 16.3% of the variance in creator preference beyond emotionality, $\Delta R^2=.163$, $p<.05$. The emotionality facet, however, did account for a significant amount of variance in two social role preferences. Specifically, emotionality accounted for 8.2 % of the variance in communicator preference and 7.3% of the variance in general social preferences beyond intellect, $\Delta R^2=.082$ and $\Delta R^2=.073$, $p<.05$, respectively.

Table 15. *Hierarchical Regression Results Relating Openness and Role Preferences*

<u>Role Preference</u>	<u>Openness</u>	<u>Emotionality</u>		<u>Intellect</u>	
	<i>r</i>	<i>β</i>	ΔR^2	<i>β</i>	ΔR^2
Contractor	.06	.089	.008	.086	.007
Creator	.25*	-.067	.004	.408	.163*
Contributor	.21*	-.087	.007	.304	.090*
Completer	.19*	-.094	.009	.219	.047*
Critic	.11	-.159	.025*	.187	.034*
Cooperator	.15	.128	.016	.079	.006
Communicator	.19*	.289	.082*	-.008	.000
Calibrator	.21*	.227	.050*	.090	.008
General Task	.24*	.005	.002	.358	.126*
General Social	.24*	.274	.073*	.072	.005

Note. $n=175$. * $p<.05$

Agreeableness

As seen in Table 16, agreeableness was most strongly related to social role preferences. Both altruism and cooperation contributed to the significant relationship between agreeableness and social role preferences. Altruism accounted for 16.4% of the variance in communicator role preference beyond cooperation, $\Delta R^2=.164$, $p<.05$. Additionally, altruism accounted for a significant amount of incremental variance in both cooperator and calibrator role preferences. Lastly, altruism also accounted for 14.8% of the variance in general social role preferences beyond cooperation, $\Delta R^2=.148$, $p<.05$.

Table 16. *Hierarchical Regression Results Relating Agreeableness and Role Preferences*

<u>Role Preference</u>	<u>Agreeableness</u>	<u>Altruism</u>		<u>Cooperation</u>	
	<i>r</i>	<i>β</i>	ΔR^2	<i>β</i>	ΔR^2
Contractor	.19*	.188	.032*	.047	.002
Creator	.10	.119	.013	-.003	.000
Contributor	-.08	.046	.002	-.133	.016
Completer	.09	.221	.045*	-.048	.002
Critic	-.12	-.114	.012	-.026	.001
Cooperator	.34*	.317	.093*	.093	.008
Communicator	.48*	.423	.164*	.139	.018*
Calibrator	.29*	.220	.044*	.177	.029*
General Task	.04	.146	.020	-.059	.003
General Social	.46*	.400	.148*	.179	.029*

Note. $n=175$. * $p<.05$

Conscientiousness

Data obtained from the conscientiousness subscales were used to assess the relative gain of utilizing narrow or broad predictors with a particular criterion. Conscientiousness was entered as the first block in the hierarchical regression model, and each facet was entered as a second block in unrelated models. The resulting R^2 change for each facet provides the percent of variance accounted for above and beyond the broad trait, as seen in Table 18.

Overall, the broad conscientiousness trait was positively and significantly related to all role preferences, with the exception of the critic and contributor role. Initial results show

negative coefficients for the orderliness and dutifulness facets for almost all of the role preferences. Due to the overwhelmingly positive relationships between conscientiousness and role preferences, it is clear that both of these facets are not contributing to the strength of the original relationship. Orderliness actually accounts for a significant amount of variance beyond conscientiousness for the completer and contributor task roles, pulling the coefficient away from its positive direction.

The self-efficacy facet of conscientiousness accounted for a significant amount of incremental variance for four of the five task role preferences. In particular, self-efficacy accounted for 11.8% of the variance in the contributor role preference above and beyond the overall broad construct, $\Delta R^2=.118, p<.05$. The conscientiousness factor accounted for only 0.7% of the variance in this specific role, largely due to the orderliness and dutifulness facets pulling the coefficient in the opposite direction. Given the significant relationships with the individual task role preferences, self-efficacy also accounted for a significant amount of variance in the broad task role preference score beyond the broad personality factor, $\Delta R^2=.101, p<.05$.

Table 17. Hierarchical Regression Broad vs. Narrow Analyses with Conscientiousness and Role Preferences

Role Preference	Conscientiousness			Self-Efficacy			Orderliness			Dutifulness			Achievement		
	β	R^2	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Contractor	.41*	.169	.023	.000		-.049	.001		-.013	.000	.081	.002		.002	
Creator	.34*	.115	.345	.067*		-.413	.082		.060	.002	.263	.024*			
Contributor	.09	.007	.458	.118*		-.261	.033*		-.197	.017	.107	.004			
Completer	.35*	.122	.318	.057*		-.233	.026*		-.044	.001	.064	.001			
Critic	-.07	.005	.240	.032*		-.149	.011		-.045	.001	.009	.000			
Cooperator	.28*	.079	.097	.005		-.129	.008		-.010	.000	.133	.006			
Communicator	.30*	.089	.037	.001		-.129	.008		.079	.003	.111	.004			
Calibrator	.22*	.048	.119	.008		-.191	.017		.116	.006	.072	.002			
General Task	.32*	.102	.424	.101*		-.332	.053*		-.091	.004	.171	.010			
General Social	.34*	.113	.111	.007		-.195	.018		.085	.003	.131	.006			

Note. $n=175$. * $p<.05$.

CHAPTER IV

DISCUSSION

With the growing implementation of teams within the workforce, there is a greater need for a more comprehensive understanding of effective team functioning in organizational settings. Researchers have generally focused on team-level performance while generally neglecting individual contributions in analyses. While organizational utility may be best understood and interpreted at the team-level, the lack of research surrounding the individuals comprising the greater team is problematic. Specifically, the domain of team member roles has largely been ignored in the literature to date (Steers, 1991). A greater focus on team roles will provide a more comprehensive framework to examine how individual contributions relate to team processes and outcomes. With a more committed approach to understanding team roles, researchers will also be able to evaluate the effect of personality on team functioning through specific and theoretically-linked behaviors. Based on past research in personality, there is reason for optimism moving forward and exploring the relationship between personality constructs and team member roles.

Despite the theoretically sound basis for relationships between personality and role performance ratings, the results from the present study were underwhelming. Overall, the relationships between personality and role performance were negligible, regardless of the rating source. Both self and peer-rated role performance yielded insignificant relationships with most personality facets.

One potential explanation for the weak relationships between personality and role performance could be that personality is in fact less related to role fulfillment than originally expected, at least in the context of the current study. Given the nature of the student project, a team member's knowledge and ability may override other antecedents to role performance and

fulfillment. For example, an individual may not prefer to take on a leadership role or be high in a particular trait that one would expect in a leader, but given the situation may realize that he/she performing the contractor role is most beneficial to the team.

A second explanation for the disappointing results lies in the measurement of role performance. A further examination of the data seemed to display high occurrences of halo bias, where a rater identifies a member as a high performer or low performer in all categories based on a general attribution, with little variability in between (Feldman, 1986). It appears the students in the current sample were either rated as performing very highly across all eight team roles, or very poorly across all eight roles. The lack of variability in the ratings proved to be highly problematic in interpreting meaningful results in any relationship containing performance scores.

A further indication of problematic role performance ratings is the nominal relationship between role preferences and the corresponding role performance ratings. As with the personality-performance relationships, the disappointing findings for the link between role attitudes and behaviors may reflect the importance of other variables, or it may stem from issues in measurement. The fact that personality was more related to the corresponding hypothesized preferences, but neither personality nor preferences related to role performance, supports the idea that measurement issues may have played a part in the negligible relationships with role performance.

While the personality-performance relationship was unfounded, the relationship between personality and role preference gained support. The originally hypothesized relationships between personality and role performance were largely supported when using the corresponding role preference as the criterion. Even though relationships with role fulfillment and performance were not captured, the current study did establish empirical support for the link between specific

personality facets and an orientation towards certain behaviors within the team. The pattern of relationships found between personality facets and role preferences generally conformed to hypothesized expectations, providing a useful link between individual traits and team-related attitudes. Results indicated strong relationships between several facets of the Five Factor Model and team role preferences. Such relationships can provide the foundation for understanding individual behaviors in team settings moving forward.

The results suggested that individuals high in certain facets of neuroticism should be placed with caution when compiling a work team. Specifically, anger and self-consciousness displayed almost unanimously negative relationships with all team roles. Anger did, however, display a moderate positive relationship with contributor and critic role preferences. According to Mumford's (2008) taxonomy, contributors provide expert knowledge to the team, and critics scrutinize group behaviors. Given the high correlation between critic and contributor roles, it is possible that individuals high in anger are more likely to go against the current course of the group and expect that they will need to support their efforts with evidence or information. Thus, team members high in anger prefer to contribute information as a way of challenging the group. While such a notion makes theoretical sense, the overwhelming negative relationships provide pessimism for maximizing neuroticism in team settings. It is possible that having a single individual high in anger may be beneficial to provide challenging information and decision-making critiques, but too many individuals high in anger may be problematic given their perceived inability to fulfill other roles. Employers should be careful when selecting individuals who are high in either of these particular facets of neuroticism as they may be detrimental to a team's success.

The relationships between the facets of extroversion and role preferences were quite strong. As expected, friendliness was positively related to all of the social role preferences. The social roles require that individuals maintain positive and open relationships with the other members of the team. On the other side of extroversion, assertiveness displayed very strong positive relationships with almost all of the task roles. The critic role, however, displayed a near-zero relationship with assertiveness. The critic role requires individuals to play devil's advocate, and stray away from the group norms. It was expected that the relationship between assertiveness and critic preference would be strong. As is evident with extroversion, there is significant value in assessing the narrow facets within each broader construct. Friendliness and assertiveness tapped into different sets of role preferences, which would not otherwise be captured by using a broad measure of extroversion. The exploratory analyses revealed that friendliness and assertiveness were both contributing incremental variance to contributor role preference, however the relationships were in opposite directions. Given these results, it is not surprising that prior research on extroversion has found disappointing results with performance, as different facets of extroversion may wash out meaningful relationships at the broad level.

Like most traits in the Five Factor Model, openness to experience has only minimally been examined in relation to team roles. When examined at the broad construct level, Stewart et al. (2005) found negligible relationships between social roles and openness. Emotionality was found to be positively related to social role preferences. It is not surprising given that individuals high in emotionality find it easier to connect and interact with members of a group. Similarly, intellect displayed strong relationships with almost all task role preferences. The significant relationship between completer preference and intellect, however, was not hypothesized. Depending on one's interpretation of the completer role duties, it is not definitive whether an

individual very high in general mental ability is best utilized in this position. Completers tend to finish tasks individually and are less involved in the development or leadership roles of the team (Mumford, 2008). One possible explanation is that individuals higher in intellect prefer to work alone so they don't have to carry less intelligent people along with them. In the context of the current sample, the more intelligent students may prefer to work on the more individual-based aspects of the project rather working in a group and compensating for the shortcomings of other members. Another explanation is that those higher in intellect do not find task performance to be frustrating due to their generally high levels of ability, whereas those lower in intellect may find performing individual tasks to be more difficult and time-consuming. Of interest, the self-ratings of role performance were unanimously negative in relation to intellect, whereas intellect was positively related to all role preferences. One possible explanation is that individuals with higher intelligence hold themselves to a higher standard than the group, thus resulting in more negative relationships.

The broad construct of agreeableness has also been assessed with regard to the broader role domains. Prior research had found moderate positive relationships with broad social role domains and the construct of agreeableness (Stewart et al., 2005; Blumberg, 2005). It is not surprising that the results of the present study provided further support for the relationship between a preference for social roles and high levels of cooperation and agreeableness. However, it was not expected that altruism would display significant relationships with contractor and completer task role preferences. Contractor behaviors describe individuals who tend to take more of a leadership role. Individuals exhibiting such behaviors allocate resources, coordinate others, and are responsible for making difficult decisions. Individuals high in altruism and cooperation are generally not expected to take on such roles. One possible explanation for the contractor-

altruism relationship is that individuals high in altruism are more willing to take on the additional burden of organizing others within a self-managed group. Similarly, individuals high in altruism are likely to place the team's goals ahead of their own, and thus taking on the completer role will allow for him/her to get the work done for the team.

The results also indicated that several facets of conscientiousness predicted a variety of team role preferences. Conscientiousness has long been considered one of the most commonly utilized predictors when examining work-relevant outcomes (Hogan & Roberts, 1996). The self-efficacy, achievement, and dutifulness facets predicted all role preferences with the exception of the contributor and the critic. The most surprising aspect of the conscientiousness results is the overwhelmingly strong relationships with social preferences. Three out of the four facets exhibited stronger relationships with the overall social role preference compared to task role preference. One possible explanation for the conscientiousness-social role relationships is that individuals high in conscientiousness recognize the need for social role fulfillment within the team, and feel confident in their ability to perform such roles. Additionally, individuals high in achievement striving maintain a desire to exceed expectations, so these individuals may expect to perform all roles well, including the social roles. A further examination of the relationships between the narrow conscientiousness facets and roles showed that self-efficacy explained a significant amount of variance above and beyond the broad factor alone for task role preferences.

While the majority of hypothesized personality-preference relationships were supported, most of the relationships between personality and the critic role were negligible. Individuals who take on the critic role engage in behaviors which challenge the group to assess both positive and negative consequences of a decision. One potential reason for the near-zero findings with this particular role could be the nature of the project itself. Given the structure of the student projects,

there may have been less of a need to fill the critic role, with more of a necessity placed on executing an already concrete strategy. The critic role itself may be less relevant in groups where decision making is kept to a minimal level. Alternatively, the critic role may also depend more heavily upon a member's knowledge or ability than personality.

Study Limitations

While the current study makes significant contributions to the team literature, there are several limitations. First, the initial wave of data collection requested an extensive amount of ratings from each participant across a variety of team roles. For teams with greater than five members, the survey required at least 140 ratings, in addition to the remaining items on the survey. The overbearing amount of ratings most likely deteriorated the quality of the data collection. Even though the measure required a large number of responses, Mumford's (2008) scale had been used with similar student projects in past research seemingly without issue. Given the past success of the measure, it was considered appropriate for this study. Although most participants completed all of the role performance ratings, there was only a miniscule amount of variability across roles. The results indicate that raters either responded extremely favorably, or extremely unfavorably, across all roles for a particular rater. Essentially, targets were generally evaluated as either good performers or bad performers, and were not appropriately assessed for a particular role. Future studies should attempt to create and utilize an improved role rating form using Mumford et al.'s (2008) role taxonomy. One approach would be to create a behaviorally anchored rating scale (BARS). Because of the nature of the role construct as behavioral criteria, a behaviorally anchored rating scale could improve the quality of role ratings. Another approach would be to assess the effectiveness of the role effectiveness, rather than just the fulfillment of

the role. The current measure only assesses the extent to which a team member performs a role, not how well he/she performs the role itself. Personality may more adequately predict the effectiveness of role performance than the adoption of the role. In addition, role misfit may not be as problematic for performance as it may be for satisfaction or strains.

Another shortcoming of the current study was the absence of supervisor role ratings. Conway and Huffcutt (1997) have provided support for the reliability of supervisor ratings compared with both peer and self-ratings. The nature of the current project did not allow the researcher to request supervisor role performance ratings. Given that this was an undergraduate class project, a large portion of the work was completed outside of classroom hours. With the lack of observation opportunities, the supervisor would not have had an adequate opportunity to provide accurate role ratings. Future researchers might benefit from looking at samples in which supervisors will have a definitive opportunity to observe subordinates. If undergraduate classrooms are utilized, however, the professor may be able to accurately rate certain role behaviors given adequate time for students to work in groups during class periods.

A third limitation of the current study is that the sample consisted only of undergraduate students. The course project likely did not require the same of member interdependence as one would see in more applied work teams, primarily because students did not yet have specialized functions. It is possible that one or two high-performers in the team completed the entirety of the team's responsibilities, which could also lead to the lack of variance across roles. The nature of the project itself may not have given members the opportunity to experience and observe the roles outline in Mumford's taxonomy. Future researchers should look to utilize more applied samples in which team members may exhibit a larger of variety of team member role behaviors.

Lastly, the role preference and personality trait scales were both administered in the same survey and were self-report measures, thus common method variance may have inflated the correlations. While common method variance is a possibility, the role preference ratings greatly surpassed the self-ratings of role performance. A further indication that common method variance did not largely affect the correlations is the differential relationships between hypothesized traits and role preferences. If common method variance was an issue, one would expect similar correlations between most personality traits and most role preferences, not just those with theoretical support. Based on those results, it does appear that there is a stronger link between personality and attitudes towards certain roles compared with the behaviors related to those roles.

Implications for Future Research

The findings of the current study have several important implications for organizations and researchers alike. While the relationship between team role preferences and role performance was negligible at best, the results from this singular study do not suggest abandoning the potential relationship. The nominal relationship between personality and role performance may be methodological or theoretical in nature. One possibility is that certain traits may not be as relevant to roles as ability or context variables. On the other hand, the measure itself may need improvement through the use of behavioral anchors to increase response quality.

A major theoretical implication of the current study is the further understanding of the structure of team research. The team role literature, specifically, has seen little progress. This exploration into the relationship between personality, preferences, and performance provides future research a foundation for understanding the importance of individual contributions in

overall team outcomes. Researchers frequently discuss the link between individual-level predictors and team-level outcomes without a proper framework for establishing cross-level relationships. Role preferences and role performance allow researchers to gain a greater understanding of individual contributions within the larger team context. While the relationship between preferences and performance is still in question, the link between personality and preference provides optimism for future research on team roles. Future studies should investigate the link between individual preferences, roles, and team processes. Establishing relationships between individual roles and team processes will help to validate the importance of roles in understanding the structure of team functioning.

The current study was the first to empirically test the team role preference scale as proposed by Grossenbacher (2012). Grossenbacher originally proposed the concept of role preferences as a more comprehensive causal sequence that occurs when team members decide whether or not to perform certain role behaviors. The theoretical link was suggested according to the notion that attitudes are more proximal correlates of behavior than personality traits. The initial results utilizing the role preference scale are expressed with optimism. While the preference-performance link was unfound, the personality-preference link provides empirical support for a theoretically sound structure of team role behaviors. The moderate strength of these relationships also suggest that other factors affect role preference, such as prior experience in performing certain roles or one's efficacy in carrying out specific role behaviors.

In addition to the theoretical importance of this contribution, there are also significant practical implications. Primarily, the relationship between personality and role preferences will greatly aid in the composition of work teams. While the relationship between personality and role behavior was unfound, preferences may still be relevant to team processes and long term

viability. For example, if team members are performing a role against their preference, they will most likely be less satisfied with their duties than if the role was more aligned with their preferences (Kemery, Bedeian, Mossholder, & Touilatos, 1985). Team members performing behaviors that they do not feel comfortable with may have negative effects on team cohesion, or could result in conflict or turnover within the team. While more research is needed to provide any empirical support for a potential personality-performance relationship, the current study does provide support for the importance of assessing role attitudes in applied settings.

Conclusions

The results of the current study indicate a strong link between personality and team role preferences. While the basis for the preference-performance relationship is theoretically sound, the current study did not find support for such a linkage. The personality-preference relationship, however, has gained empirical support through this study. Such findings are important as role preferences provide a more proximal correlate to behaviors than personality. Additionally, role preferences may be important for long term viability within the team as such attitudes may affect team cohesion, turnover, and team conflict. Further research is needed in order to gain a greater understanding of the reason for such minimal relationships between personality and role performance. Similarly, future studies should examine the relationship between team roles and team processes to gain further understanding of the theoretical framework of team functioning.

APPENDICES

APPENDIX A

PERSONALITY: INTERNATIONAL PERSONALITY ITEM POOL (GOLDBERG, 1999)

Indicate the degree to which the following statements generally describe you as a person.

Strongly Disagree 1	Disagree 2	Neither Agree nor Disagree 3	Agree 4	Strongly Agree 5
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Neuroticism	Anger	I get angry easily.	1	2	3	4	5
		I get irritated easily.	1	2	3	4	5
		I lose my temper.	1	2	3	4	5
		I am not easily annoyed.	1	2	3	4	5
	Self- Consciousness	I find it difficult to approach others.	1	2	3	4	5
		I am afraid to draw attention to myself.	1	2	3	4	5
		I am not bothered by difficult social situations.	1	2	3	4	5
Extroversion	Friendliness	I make friends easily.	1	2	3	4	5
		I feel comfortable around people.	1	2	3	4	5
		I avoid contacts with others.	1	2	3	4	5
		I keep others at a distance.	1	2	3	4	5
	Assertiveness	I take charge.	1	2	3	4	5
		I try to lead others.	1	2	3	4	5
		I take control of things.	1	2	3	4	5
		I wait for others to lead the way.	1	2	3	4	5

Openness	Emotionality	I experience my emotions intensely.	1	2	3	4	5
		I feel others' emotions.	1	2	3	4	5
		I rarely notice my emotional reactions.	1	2	3	4	5
		I don't understand people who get emotional.	1	2	3	4	5
	Intellect	I love to read challenging material.	1	2	3	4	5
		I avoid philosophical discussions.	1	2	3	4	5
		I have difficulty understanding abstract ideas.	1	2	3	4	5
		I am not interested in theoretical discussions.	1	2	3	4	5
Agreeableness	Altruism	I love to help others.	1	2	3	4	5
		I am concerned about others.	1	2	3	4	5
		I am indifferent to the feelings of others.	1	2	3	4	5
		I take no time for others.	1	2	3	4	5
	Cooperation	I love a good fight.	1	2	3	4	5
		I yell at people.	1	2	3	4	5
		I insult people.	1	2	3	4	5
		I get back at others.	1	2	3	4	5

Conscientiousness	Self-Efficacy	I complete tasks successfully.	1	2	3	4	5
		I excel in what I do.	1	2	3	4	5
		I handle tasks smoothly.	1	2	3	4	5
		I know how to get things done.	1	2	3	4	5
	Orderliness	I like to tidy up.	1	2	3	4	5
		I often forget to put things back in their proper place.	1	2	3	4	5
		I leave a mess in my room.	1	2	3	4	5
		I leave my belongings around.	1	2	3	4	5
	Dutifulness	I keep my promises.	1	2	3	4	5
		I tell the truth.	1	2	3	4	5
		I break the rules.	1	2	3	4	5
		I break my promises.	1	2	3	4	5
	Achievement-Striving	I do more than what's expected of me.	1	2	3	4	5
		I work hard.	1	2	3	4	5
		I put little time and effort into my work.	1	2	3	4	5
		I do just enough work to get by.	1	2	3	4	5

APPENDIX B

ROLE PREFERENCES (GROSSENBACHER, 2012)

The following statements are behaviors that may be performed when working in a team. Please indicate the degree to which you would prefer to engage in the following behaviors when they are necessary. Remember to indicate those behaviors that you prefer to perform, rather than those that you actually perform.

I prefer to

Not at All	A Little	Moderately	Considerably	Definitely
1	2	3	4	5

Contractor	Monitor team members to ensure that they complete tasks on time.	1	2	3	4	5
	Provide deadlines for the completion of tasks to other team members.	1	2	3	4	5
Creator	Develop innovative solutions to problems facing the team.	1	2	3	4	5
	Suggest improvements to the strategies that have been adopted by the team.	1	2	3	4	5
Contributor	Act as an expert on subjects relevant to the team's tasks.	1	2	3	4	5
	Convince the team that I am the expert on topics I know better than they do.	1	2	3	4	5
Completer	Voluntarily take on projects that must be completed by a single person.	1	2	3	4	5
	Take responsibility for completing tasks not assigned to anyone by the leader.	1	2	3	4	5

Critic	Identify flaws to the ideas presented by team members.	1	2	3	4	5
	Question the ideas that are brought up by team members.	1	2	3	4	5
Cooperator	Allow other team members to assert their expertise on topics.	1	2	3	4	5
	Follow directions given by others when they know more about a topic than I.	1	2	3	4	5
Communicator	Focus on creating a positive social environment within the group.	1	2	3	4	5
	Help to make sure that other group members are not insulted or put down.	1	2	3	4	5
Calibrator	Ask other members about their opinions regarding the overall functioning of the group.	1	2	3	4	5
	Determine which aspects of team interaction require improvement.	1	2	3	4	5

APPENDIX C

ROLE PERFORMANCE (MUMFORD ET AL., 2008)

The following set of questions asks you to evaluate each team member (including yourself) on various behaviors pertaining to the team. Please refer to your assigned letters so that you know who you are evaluating. Indicate the extent to which each team member performed the behaviors listed below.

No Extent	Little Extent	Moderate Extent	Considerable Extent	Very Great Extent
1	2	3	4	5

Team Member _____

Contractor	Organizes the team’s work to get important work done on time	1	2	3	4	5
	Coordinates the work done by others so that things are done in the right order	1	2	3	4	5
	Helps the team focus on getting the job done efficiently	1	2	3	4	5
Creator	Suggests creative ways to solve the team’s problems	1	2	3	4	5
	Helps the team take a fresh perspective on problems	1	2	3	4	5
	Sees the “big picture” and has creative ideas for handling problems	1	2	3	4	5
Contributor	Speaks out when he/she knows the most about the work to be done	1	2	3	4	5
	Shares with the team any knowledge he/she has about the work to be done	1	2	3	4	5
	Takes the lead in the team when he/she has a lot of experience in that area of work	1	2	3	4	5

Completer	Takes personal responsibility for getting the work done	1	2	3	4	5
	Finishes work for the team on time without being reminded	1	2	3	4	5
	Follows through on commitments made to the team	1	2	3	4	5
Critic	Speaks up if he/she has concerns with the work the team is doing	1	2	3	4	5
	Makes sure the team talks about both positive and negative consequences of decisions.	1	2	3	4	5
	Shares honest opinions about how the team is working, even if the opinion is not favorable	1	2	3	4	5
Cooperator	Supports the team and its goals after having given input, even if he/she would have personally set different goals	1	2	3	4	5
	Admits when others have more experience in particular areas and trusts their judgment	1	2	3	4	5
	Recognizes the expertise of others and allows them to take a leadership role in the team	1	2	3	4	5
Communicator	Makes the work pleasant and comfortable by being happy and easy to work with	1	2	3	4	5
	Communicates personal feelings and thoughts respectfully and without offending anyone	1	2	3	4	5
	Listens carefully to the thoughts and feelings of others	1	2	3	4	5
Calibrator	Helps settle conflicts between members of the team	1	2	3	4	5
	Suggests positive ways for the team to interact such as taking turns, showing respect, and being open to new ideas	1	2	3	4	5
	Steps in if there are negative feelings in the team to help resolve the difficulties	1	2	3	4	5

APPENDIX D

ROLE PERFORMANCE (MUMFORD ET AL., 2008): ABBREVIATED WAVE II MEASURE.

What is the ID # assigned to your team? What is the letter assigned to you for this study (ex: A, B, C, etc.)?

Please read through each team role behavior. Indicate the extent to which team member __ performs the given action.

Use the roster to reference which team members correspond with each letter.

Member __	Great Extent			Moderate Extent			No Extent
<u>Contractor Role:</u> Organizes or coordinates the team’s work to help the team maintain focus on getting it done efficiently.	7	6	5	4	3	2	1
<u>Creator Role:</u> Sees the big picture or suggests creative ways for solving problems and getting the work done.	7	6	5	4	3	2	1
<u>Contributor Role:</u> Shares information or advice with the team. Takes the lead when he/she has a lot of experience in that area of work.	7	6	5	4	3	2	1
<u>Completer Role:</u> Takes personal responsibility for the team’s work and finishes the work on time. Follows through on commitments made to the team.	7	6	5	4	3	2	1
<u>Critic Role:</u> Shares honest opinions about the team or makes sure the team talks about both positive and negative consequences of decisions.	7	6	5	4	3	2	1
<u>Cooperator Role:</u> Supports the team and other team members in their work even if he/she would have personally done it differently. Recognizes the expertise of others and allows them to take a leadership role in the team.	7	6	5	4	3	2	1
<u>Communicator Role:</u> Communicates respectfully and listens carefully to the thoughts and feelings of others. Makes the work atmosphere more comfortable because he/she is pleasant to work with.	7	6	5	4	3	2	1
<u>Calibrator Role:</u> Helps the team get along together by helping to settle conflicts. Suggests positive ways for the team to interact, or steps in if there are negative feelings within the team	7	6	5	4	3	2	1

APPENDIX E
CONSENT FORM FOR



Anonymous Surveys

Study Title: The Role of Personality in Team Ratings and Performance

Research Investigators' Names and Departments:

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Introductory Statement

You are invited to participate in our study examining the role of personality in team ratings and performance. With the growing demands of the work environment, organizations have turned their attention towards the implementation of work teams. Our study will examine the relationship between team roles and team processes, personality and team roles, and the agreement between self and other ratings. The details of this study are provided in this consent document. I am available to answer any questions you may have about the project.

What is the purpose of this study?

We seek to examine different variables that predict the types of roles one plays within a team. Why does one person choose to help with some team functions, but not others? We also seek to understand how the performance of specific roles relates to overall team functioning.

What will I do in this study?

Participants will be asked to complete two separate surveys throughout the semester. Surveys will be completed outside of the classroom either online or through a pencil and paper format.

How long will it take me to do this?

Each survey should take approximately 15-30 minutes to complete; teams that have more members will take longer than teams with fewer members, because part of the survey asks you to answer questions for each team member.

Are there any risks of participating in the study?

This study involves only minimal risk, i.e., risk that is encountered in daily life.

What are the benefits of participating in the study?

Your participation in this study may teach you valuable concepts when working with others. Pending instructor approval, you may also receive extra credit towards your class grade for completion of this project (an alternative credit opportunity would be available for non-participants). In addition, the results of this study may help organizations to improve the quality of their work teams' performance and satisfaction.

Will anyone know what I do or say in this study (Confidentiality)?

Teams will be given a randomly generated unique identification number, and members will be given a letter within each team so that we can link responses from members of the same team. This information will be recorded on a roster sheet and kept separate from your survey answers to ensure confidentiality. Only the principal investigator, co-investigators, and approved lab research assistants will have access to the data. In all other instances, any data under the investigator's control will, if disclosed, be presented in a manner that does not reveal the subject's identity, except as may be required by law.

Who can I contact for information about this study?

For answers to questions about the research, research subjects' rights, or in case of a research-related injury to the subject please contact Matt Prewett.

Matt Prewett
prew1ms@cmich.edu
989-774-6282

You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled. Your participation will not affect your relationship with the institution(s) involved in this research project.

My return of this survey implies my consent to participate in this research and I have been given a second copy of this form to keep for my records.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the Institutional Review Board by calling 989-774-6777, or addressing a letter to the Institutional Review Board, 251 Foust Hall Central Michigan University, Mt. Pleasant, MI 48859.

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