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That's not fair! Examining individual differences in perceptions of fairness

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Supervisor: Dr. Natalie Allen, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Psychology

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That's not fair! Examining individual differences in perceptions of equity

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Graduate Program in Psychology

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Abstract

Within organizations, fairness is an important concept and has received considerable research attention. Some research, interestingly, suggests that individuals differ in their perceptions of equity. Building on this research, four empirical studies were conducted to develop a measure of a new construct (i.e., equity orientation) and examine its predictive validity. In Study 1 (N = 836) and Study 2 (N = 600), the Equity Orientation Scale (EOS) was created and its relations with two popular personality models – the HEXACO and the Dark Tetrad – were examined across self- and peer-ratings. In Study 3 (N = 433) and Study 4 (N = 490), the EOS was measured in a team setting and predicted individuals' task and contextual performance. Further, Study 4 examined social loafing as a mediating mechanism between the EOS and the performance-related behaviours with full and partial mediations being found. Conclusions and future research directions are discussed.

Keywords: equity theory, equity orientation, teams, HEXACO, Dark Tetrad, task performance, contextual performance, counterproductive behaviour, social loafing

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CHAPTER 1: LITERATURE REVIEW

In an attempt to improve our understanding of individuals' perception of inequity in social exchanges – more specifically, in organizations – Adams' (1963; 1965) proposed equity theory. Equity theory argues that individuals are motivated by a desire to be treated fairly, or equitably, based on their perceptions of the social exchange of resources (i.e., inputs for outcomes). When explicating this perception, Adams' focused on employees in an organization, arguing that an employee's ratio of inputs (e.g., experience, education and effort) to outcomes (e.g., promotions, compensation and recognitions) should be commensurate with that of comparison others (e.g., employees with similar roles or job titles). This perceived equitable ratio has been termed the "norm of equity" (Carrell & Dittrich, 1978; Hatfield, Walster, Walster & Berscheid, 1978). Adams' (1963; 1965) further argued – in line with Festinger's (1962) cognitive dissonance theory – that individuals would feel distress if the norm of equity is violated; for example, when he or she is being under- or over-rewarded. To address the feeling of dissonance that these inequitable situations create, Adams' argued that individuals would alter their behaviour (e.g., increase or decrease either their inputs or outcomes) in order to adjust the ratio back to the perceived "norm".

Although some researchers have found some support for equity theory's norm (e.g., Austin & Walster, 1975; Ross & McMillen, 1973), other researchers have not, especially in situations of overpayment (Lane & Messé, 1972; Lawler, 1968). In addition, an investigation by Huseman, Hatfield and Miles (1985) questioned whether individuals adhere to the "norm of equity," finding that some individuals prefer their input to outcome ratio to be tipped more towards either inputs or outcomes. Thus, Huseman et al.

(1985) demonstrated that under identical conditions, individuals differ in their reactions to inequity. Building on these findings, Huseman, Hatfield and Miles (1987) introduced a new construct entitled “equity sensitivity,” which referred to how individuals perceived equity in the workplace and developed a measure to assess it.

Equity Sensitivity

Introduced by Huseman et al. (1985; 1987), equity sensitivity was originally proposed as an individual difference variable that measures – along a single continuum – those who are more input oriented (i.e., benevolent) versus those who are more outcome oriented (i.e., entitled). Individuals who score high on equity sensitivity are considered benevolent, whereas those who score low on equity sensitivity are considered to be entitled. Individuals who fall in the middle of the continuum are considered to be both input and outcome oriented (i.e., equity sensitive). Benevolent individuals are considered to be motivated by their desire to put forth effort and are therefore considered to be ‘givers’. Entitled individuals are considered to be motivated by their desire for outcomes and are therefore considered to be ‘getters’. Equity sensitives, however, are individuals who are motivated by both a desire to put forth effort and a desire for outcomes.

Huseman et al. (1987) theorized that equity sensitive individuals are more perceptive and conscious of injustice and unfairness in social exchanges.

Equity sensitivity was presented as an individual difference variable that would improve our understanding of behaviour in the workplace (Huseman et al., 1987). Thus, the vast majority of research on the construct has been conducted in a work-related context. For example, research by Kickul and Lester (2001) found that entitlements reported decreased job satisfaction and increased negative affect when psychological contracts

were breached in regards to outcomes (e.g., rewards, benefits), whereas benevolents were unaffected by breached outcomes. In addition, O'Neill and Mone (1998) found that when self-efficacy is low, benevolents report having higher job satisfaction and lower intent to leave than entitleds. Other research has found that being Benevolent versus Entitled can influence organizational justice perceptions (Kickul, Gundry & Posig, 2005; Scott & Colquitt, 2007) and organizational citizenship behaviours (Blakely, Andrews & Moorman, 2005; Restubog, Bordia & Tang, 2007).

Interestingly, research on equity sensitivity has focused on differentiating between benevolents and entitleds, often ignoring the role of equity sensitives (i.e., individuals who adhere to the norm of equity). This problem is mainly attributed to issues with how equity sensitivity is measured.

Measurement Issues

Initially, equity sensitivity was measured with the Equity Sensitivity Instrument (ESI; Huseman et al., 1985). The ESI consists of five forced-distribution items. For each item (e.g., "It would be more important for me to") there are two statements: a benevolent statement (e.g., "give to my organization") and an entitled statement (e.g., "get from my organization"). Respondents are asked to distribute 10 points between the two statements, with their benevolent scores totalled to create a scale score. When examining differences between the three equity sensitivity categories (i.e., benevolents, equity sensitives and entitleds), researchers (e.g., King, Miles & Day, 1993; Miles, Hatfield & Huseman, 1989) have relied upon cut scores, creating categories for benevolents (1/2 SD above the mean), equity sensitives (between 1/2 SD below and above the mean) and entitleds (1/2 SD below the mean). Overall, the ESI can be criticized for its ipsative format, which can

result in acquiescence, poor reliability and a lack of validity (Bartram, 1996; Hicks, 1970; Johnson, Wood & Blinkhorn, 1988; Ray, 1990; Tenopyr, 1988). In addition, the use of cut scores to identify each equity sensitivity category is also an issue (see Cohen, 1983; Dwyer, 1996) that can lead to an increased probability of type-1 error (Maxwell & Delaney, 1993), lower statistical power (Varga, Rudas, Delaney & Maxwell, 1996) and problems with sample-specific scoring (Sauley & Bedeian, 2000).

To address the limitations of the ESI, Sauley and Bedeian (2000) developed a new measure of equity sensitivity that they called the Equity Preference Questionnaire (EPQ). Thus, following the guidelines set forth by measure development experts (e.g., Hinkin, 1998; Jackson, 1970), Sauley and Bedeian (2000) developed a normative measure that addressed the content and construct validity issues related to the ESI. First, the authors started with a clear definition of equity sensitivity. Second, after conducting a pilot study, Sauley and Bedeian (2000) retained 16 items – eight benevolent items and eight entitled items – for the EPQ scale. These items asked individuals about their preferred ratio of inputs to outcomes. For example, a sample benevolent item is, “Even if I received low wages and poor benefits from my employer, I would still try to do my best at my job.” A sample entitled item is, “I prefer to do as little as possible at work while getting as much as I can from my employer.” However, these items are clearly double barreled, asking the individual to respond to both inputs (“I prefer to do as little as possible at work”) and outcomes (“while getting as much as I can from my employer”). Further, Sauley and Bedeian (2000) found that the EPQ was susceptible to socially desirable responding. Even further, research investigating the factor structure of the EPQ has questioned the measures unidimensional nature, finding that the EPQ is a multidimensional scale

(Miller, 2009; Taylor, Klumper & Sauley, 2009; Woodley, Bourdage, Ogunfowora & Nguyen, 2016).

More recently, researchers have tried to address the multidimensionality issue by creating two scales that attempt to measure equity sensitivity as a bidimensional construct. As a result, a fourth equity sensitivity category was introduced (i.e., individuals who are low on both inputs and outcomes, “equity indifferents”; Davidson & Bing, 2008). The first measure – the Single-Stimulus Equity Sensitivity Instrument (SSESI) – was introduced by Davidson and Bing (2008) and added a Likert-type agreement scale to each statement from the ESI, creating what they referred to as separate “benevolent” and “entitled” items. Individuals who scored high on the benevolent scale, however, could be categorized into either the benevolent or equity sensitive category, with the same issue occurring with the entitled scale. In addition, the original items for the ESI required individuals to make a comparison between the two items. With the SSESI, the comparison was removed, but the items were not reworded to correct for this. For example, instead of allotting points between statements “A” and “B” (e.g., “It would be more important for me to: (A) Get from the organization, (B) Give to the organization”), individuals were asked “It would be more important for me to get from the organization” and “It would be more important for me to give to the organization” as two separate items, thus lacking a clear referent (i.e., more important than what?).

The second bidimensional measure – the Triadic Measure of Equity Sensitivity (TMES) – was also based on the ESI (Clark, Foote, Clark & Lewis, 2010). The authors altered the original ESI to include a third, equity sensitive statement in each item (e.g., “Give as much to the organization as I get from it”). Nevertheless, this questionnaire is

still an ipsative measure that suffers from acquiescence bias, poor reliability and relies on the same questionable statistical methods (e.g., sample-specific cut scores). Further, both the SSES and TMES were adapted from the ESI and therefore are limited by the ESI's lack of content validity and poor item development identified in previous research (e.g., Sauley & Bedeian, 2000).

Overall, the measurement of equity sensitivity appears limited by multiple measurement related issues and concerns. These issues and concerns might not be attributed to poor scale development. Rather, equity sensitivity appears to have some inherent theoretical limitations preventing the development of effective measures.

Theoretical Issues

One of the theoretical issues that has limited the equity sensitivity construct relates to its dimensionality. As previously mentioned, equity sensitivity was theorized by Huseman et al. (1987) to be a unidimensional construct. This, however, has not been supported with empirical research. As previously noted, much of the measurement development research has proposed that equity sensitivity is better measured as a bidimensional construct. In fact, the unidimensional approach even differs from Adams' (1963, 1965) original equity theory in which Adams' argued that inputs and outcomes were two separate and unique constructs.

In addition, equity sensitivity and its measurement has focused on, and is limited by, its application only to the workplace. Nevertheless, Adams' (1963) argued that perceptions of equity occur in any "social situation in which an exchange takes place." (p.422). Because equity sensitivity is theorized as being a state, rather than a personality trait, it is applicable in the many other social exchange situations that occur outside of the

relation between the employer and employee. However, taking a trait approach would allow individual differences in perceptions of equity to be applied across all social exchange situations.

Finally, equity sensitivity has some issues in regards to the naming of the categories. In particular, the terms “equity sensitivity” and “equity sensitives” can be confusing and misleading, as individuals who are high on “equity sensitivity” are not considered to be “equity sensitive,” rather, they are considered to be “benevolent.” This can therefore create confusion with the understanding, interpreting and reporting of the research findings when investigating equity sensitivity, as equity sensitives are often ignored (e.g., Sauley & Bedeian, 2000).

To address the many measurement and theoretical issues related to equity sensitivity, I propose a new construct based on Adams’ equity theory: equity orientation.

Equity Orientation

Equity orientation is an individual difference variable based on Adams’ (1963; 1965) equity theory. As previously discussed, equity theory argues that individuals perceive fairness (i.e., equity) based on what Adams’ referred to as the “norm of equity.” This “norm” is described as an individual’s preference for his or her ratio of inputs to outcomes to be equal to the ratios of comparison others with similar roles and responsibilities. If, for example, an individual’s ratio of inputs to outcomes differs significantly from those around him or her, Adams’ (1963; 1965) argues the individual would perceive the situation as being inequitable.

Although Adams' (1963; 1965) proposed equity theory within the context of the organization, he argued that equity theory was applicable in any social exchange situation:

It should be evident, however, that the theoretical notions advanced are relevant to any social situation in which an exchange takes place, whether the exchange be of the type taking place between man and wife, between football teammates, between teacher and student, or even, between Man and his God. (Adams, 1963, p.422)

In fact, equity theory has been applied to a variety of different social exchanges and interactions. For example, the "norm of equity" has been investigated in romantic exchanges (Davidson, 1984; Davidson, Balswick, & Halverson, 1983), buyer-seller exchanges (Lapidus & Pinkerton, 1995; Román & Ruiz, 2005), teacher-student exchanges (Bakker et al., 2000) and doctor-patient exchanges (Van Dierendonck, Schaufeli & Sixma, 1994).

Adams's (1963; 1965) also argued that individuals' inputs and outcomes operate independently (i.e., individuals can manipulate either their inputs or outcomes to achieve the equitable ratio). As a result, research on equity theory has commonly measured each individual's inputs and outcomes as separate dimensions and then calculated the equity ratios (e.g., Davidson, 1984; Michaels, Edwards & Acock, 1984; Traupmann, Petersen, Utne & Hatfield, 1981). This is because individuals will differ on their inputs and outcomes based on their own preferences and desires in order to maintain the equity norm. Nevertheless, research by Huseman et al. (1985) found that many individuals do not adhere to the equity norm; rather, some individuals are more input oriented whereas

others are more outcome oriented. Combining these arguments suggest that individuals will differ in their desire to put forth effort (i.e., inputs) and their desire to be rewarded (i.e., outcomes); however, they do not necessarily do this to maintain the equity norm. As previously mentioned, research (e.g., Huseman et al., 1985; 1987) has demonstrated that not all individuals feel distress when facing inequity. Possibly underlying this are individual differences in how people react to inequity (e.g., Woodley & Allen, 2014; Woodley et al., 2016). Thus, I propose the construct of equity orientation, which argues that individuals' perception of equity is dependent on two factors: individuals desire to put forth effort (i.e., input orientation) and desire for rewards (i.e., outcome orientation). In addition, when these two traits are examined together they will create 'subgroups' or 'profiles' of individuals who have differing perceptions of what is equitable.

In the following sections I will define input orientation and outcome orientation as variables and discuss the proposed equity orientation profiles, explaining their value to understanding individual differences in perceptions of equity/fairness.

Input Orientation

According to equity theory, there are a variety of individual characteristics that can be considered to be inputs. Using the workplace context as an example, an individual's previous work experience, education, skills and expertise, and job knowledge may all be considered 'inputs' that the individual brings to the job. These inputs must have three characteristics: they must be recognized by both parties, relevant to the job, and considered by the possessor to be a contributing factor in the exchange (i.e., an input). Therefore, an individual must put *effort* towards the input for it to be a contribution. Thus, Adams' (1963; 1965) argued that the most significant input in an

exchange is the effort an individual puts forth. I therefore argue that an individual's input orientation is his or her desire, or willingness, to put forth effort (e.g., contribute to a task, help others, and work hard). In accordance with equity theory, individuals will differ in the amount of effort that they will put forth in a given situation (Adams, 1963; 1965), resulting in individual differences in input orientation.

Initially, input orientation may be mistaken for another construct: intrinsic motivation. Intrinsic motivation is defined as that which propels an individual to engage in an activity because it is naturally interesting and enjoyable to the individual (Deci & Ryan, 1985). As a result, intrinsic motivation is often discussed with respect to a specific task or specific activity that inherently drives an individual to perform. However, what is intrinsically motivating varies within and across individuals. For example, a high school student may be intrinsically motivated to learn chemistry but not mathematics, whereas his or her friend may be intrinsically motivated to learn mathematics but not chemistry. Input orientation, on the other hand, focuses on the disposition of the individual across various tasks and activities. Further, although input oriented individuals have a desire to put forth effort, it does not mean they necessarily enjoy doing it. Input oriented individuals might believe that contributing or putting forth effort is the "right" thing for them to do, even though they do not find personal enjoyment from doing the task or activity. For example, input oriented individuals might agree to help a friend move into a new home (i.e., contribute), even though they do not enjoy the labour of moving (i.e., the activity is not intrinsically motivating). Overall, input orientation differs from intrinsic motivation in that it is a characteristic of the individual and generalizes across tasks and

activities, whereas intrinsic motivation is what an individual feels about the characteristic of a specific task or activity and that drives the individual toward relevant action.

Outcome Orientation

Adams' (1963) defines outcomes as the "rewards received by an individual for [his or her] services" (p. 423). In the context of an employee-employer relationship, examples of these rewards are salary, benefits, seniority, power, and job status. However, in other relationships, such as a buyer-seller relationship, the outcome could be the quality of the product being consumed. Or, in a romantic relationship, it could be the financial support one partner provides for the other. Commensurate with Adams' (1963; 1965) theorizing regarding inputs, outcomes are also required to be both recognized and relevant to the recipient in the exchange for the outcome to be considered a contributing factor in the exchange. With that being said, some individuals may not be oriented towards outcomes, whereas others might have a strong desire for outcomes. I therefore argue that an individual's outcome orientation is his or her desire, or willingness, to receive outcomes (e.g., pay, rewards, and benefits). In addition, Adams' (1965) argued that recipients have the ability to manipulate their outcomes, suggesting that individuals can differ in their outcome orientation.

At this point, it is important to distinguish between outcome orientation and extrinsic motivation. Extrinsic motivation is defined as doing a task in order to gain/attain an outcome (Deci & Ryan, 1985). Although this definition may seem similar to outcome orientation, an important distinction can be made between the two constructs. Extrinsic motivation is often used in situations where a task or activity is disinteresting (e.g., household chores). As a result, certain tasks that are not intrinsically motivating (e.g.,

taking out the garbage) require extrinsic motivation to get an individual to complete it. However, individuals who are extrinsically motivated may complete the task or activity reluctantly and with resentment (Ryan & Deci, 2000). An individual's outcome orientation, on the other hand, is an individual's disposition across various tasks and activities. Further, an outcome-oriented individual desires outcomes and will therefore respond positively to any situation that will provide a desirable outcome. In fact, a task or activity that provides an outcome may become intrinsically motivating (i.e., interesting or enjoyable) to an outcome-oriented individual. Overall, outcome orientation differs from extrinsic motivation in that it is a characteristic of the individual, whereas extrinsic motivation is a characteristic of a specific task or activity that drives the individual toward relevant action.

In sum, input and outcome orientation are two novel personality traits that can add to our understanding of how and individual will behave across various types of social exchanges. Although a distinction has been made between input and outcome orientation and intrinsic and extrinsic motivation (i.e., the former being personality traits and the latter being characteristics of a specific task or activity), it is also worth mentioning a difference between these construct as they coexist within an individual. Intrinsic motivation and extrinsic motivation have an interesting relationship, as meta-analytic research has demonstrated that extrinsic motivation can undermine intrinsic motivation (Deci, Koestner, & Ryan, 1999). Input and outcome orientation, on the other hand, are considered to co-exist within an individual. Their co-existence, however, is independent, with neither input orientation nor outcome orientation undermining or supplanting the other. To further expand on this notion, the following section will introduce four equity

orientation profiles that are theorized to further the understanding of how individuals differ in how they perceive equity.

Equity Orientation Profiles

It is important to note here that social exchanges are dyadic; that is, inputs and outcomes are co-existing during the exchange (Blau, 1964; Cropanzano & Mitchell, 2005). As a result, an individual's perception of what is equitable (i.e., fair) may depend on his or her desire for either inputs or outcomes. Taken together, it seems reasonable to suggest that individuals can be categorized into subgroups (or "profiles") based on whether they are high or low on either equity orientation trait, high on both, or low on both traits (see Figure 1). The following sections will expand on this notion that individuals' perceptions of what is fair may vary across individuals and that the patterning of these perceptions will produce four profiles.

Equity enthusiastic profile. These individuals have both a desire to put forth effort (i.e., high input orientation) and a desire to be rewarded for their efforts (i.e., high outcome orientation). They, therefore, are driven by a balanced and fair exchange and will perceive inequity – in either inputs or outcomes – as a violation of the exchange.

Equity apathetic profile. These individuals have no desire to put forth effort (i.e., low input orientation) and care little for rewards (i.e., low outcome orientation). They are therefore considered to be unmotivated, not caring to work hard or help others, and also not concerned with gaining any external rewards.

Equity altruistic profile. These individuals have a desire to put forth effort (i.e., high input orientation), but have little desire to be rewarded for their efforts (i.e., low

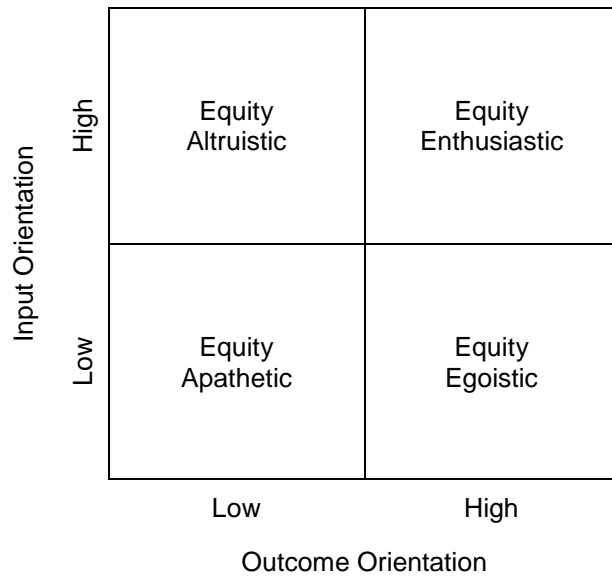


Figure 1. Proposed equity orientation profiles.

outcome orientation). They therefore are driven by what they can give in an exchange, focusing on their contributions rather than the outcomes of the exchange.

Equity egoistic profile. These individuals have no desire to put forth effort (i.e., low input orientation), but have a strong desire for rewards (i.e., high outcome orientation). They are driven, therefore, by what they can get from an exchange, trying to maximize what they will receive while minimizing how much effort they will have to put into the exchange.

The purpose of the investigation herein is to develop a measure of equity orientation, examine its nomological network, and test the theory surrounding equity orientation in a social exchange context (i.e., work teams). This is done across two phases. Phase 1 addressed the need to develop a measure of equity orientation and examine its nomological network. Further, I examined the existence of the four equity orientation profiles and developed their nomological networks as well. In two studies, the findings were replicated across self- and peer-reports using the most prominently researched models of personality (i.e., the Big Five/HEXACO and Dark Triad/Tetrad). Building on the findings of Phase 1, Phase 2 applied equity orientation as a predictor in a social exchange context (i.e., criterion-related validity). More specifically, I examined how an individual's equity orientation related to his or her performance-related behaviours while working in a team. Again, across two studies and both self- and peer-reports (for the performance-related behaviours), I examine the relations among equity orientation and performance-related behaviours in project teams.

CHAPTER 2: MEASURE VALIDATION

Following Hinkin's (1998) guidelines for scale development, the equity orientation measure was designed using a deductive approach and was therefore based on the aforementioned theory regarding equity orientation. Further, I sought to examine the measure's relations with two of the most popular personality models: the Big Five/HEXACO and the Dark Triad/Tetrad. These models provide integral information to base future research on by improving our understanding of the nomological network for each equity orientation dimension (i.e., input and outcome orientation). Even further, I utilized both variable-centred and person-centred analytic procedures (to be discussed) to improve our understanding of the equity orientation dimensions and the proposed equity orientation profiles. Across two studies, I tested both self- and peer-reports of personality to provide initial validation to the equity orientation construct.

Study 1

The purpose of Study 1 was to develop a measure of equity orientation. In addition, I sought to provide initial construct validation by developing equity orientation's nomological network. To achieve this, I examined how equity orientation relates to the Big Five personality traits, Honesty-Humility, and the Dark Triad. As previously discussed, these personality traits were selected because they are the most frequently researched personality traits in the literature today.

The Big Five

Personality has been theorized in many different ways. However, the Big Five personality traits are arguably the most widely researched personality traits. Based on research conducted in the early 1990s (e.g., Costa & McCrae, 1992a; Goldberg, 1990),

the Big Five consists of conscientiousness, agreeableness, neuroticism/emotional stability, openness to experience and extraversion. Considering the prevalence of the Big Five traits, I investigated the equity orientation dimensions and their relations to the Big Five personality traits.

Conscientiousness. Conscientiousness is characterized by persistence, striving for achievement and being hardworking (Goldberg, 1990). Research on conscientiousness has found it to be related to variety of input-related variables. For example, conscientiousness has been demonstrated to relate to high achieving and persistence (Komarraju & Karau, 2005), intrinsic motivation (Hart, Stasson, Mahony & Story, 2007), and performance motivation (Judge & Ilies, 2002). In addition, Fong and Tosi (2007) found that conscientiousness predicted the amount of effort individuals put forth on a given activity.

In regards to outcomes, conscientiousness does not appear to have as clear a relation. For example, research has demonstrated that conscientiousness is unrelated to income (Boudreau, Boswell, & Judge, 2001), economic desire (Komarraju & Karau, 2005) and job status (Furnham, Eracleous & Chamorro-Premuzic, 2009). Further, Hart et al. (2007) found conscientiousness to be unrelated to extrinsic motivation.

Some research has also investigated how conscientiousness relates to both inputs and outcomes within the same study, testing Costa and McCrae's (1992) argument that conscientiousness individuals' achievement orientation is relatively independent of any desire for external rewards. In support of this, Burnett, Williamson and Bartol (2009) found conscientiousness related to job satisfaction even when external outcomes were low. In addition, Barrick, Stewart and Piotrowski (2002) found that conscientiousness

was positively related to status striving (outcome) through their accomplishment striving (input).

Based on these findings, it appears that conscientious individuals will have a high input orientation, whereas they seem to have a “take it or leave it” approach to outcomes. Therefore the following is hypothesized:

Hypothesis 1: Conscientiousness will be positively related to input orientation.

Agreeableness. Agreeableness is characterized by empathy, cooperation and generosity (Goldberg, 1990). Research on agreeableness and input-related constructs has generally found the two variables unrelated. For example, both Hart et al. (2007) and Komarraju, Karau and Schmeck (2009) found agreeableness to be positively related to intrinsic motivation; however, when included in a regression model with the other Big Five personality traits, agreeableness did not predict any unique variance. Further, Komarraju and Karau (2005) found agreeableness to be unrelated to achieving, and both Barrick and Mount (1991) and Witt, Burke, Barrick and Mount (2002) found agreeableness to be unrelated to job performance.

On the other hand, agreeableness has been found to negatively relate to a variety of outcomes. For example, research has found agreeableness to be negatively related to job status (Furnham et al., 2009), status striving (Barrick et al., 2002), income (Boudreau et al., 2001) and extrinsic motivation (Hart et al., 2007). Further, both Judge, Livingston and Hurst (2012) and Ng, Eby, Sorensen and Feldman (2005) found that disagreeable people value money more highly. Even further, Barry and Friedman (1998) found agreeableness to be negatively related to distributive bargaining (for compensation) because agreeable individuals do not value outcomes.

Based on the previous research, it seems as though agreeableness is unrelated with input-related behaviour. However, individuals who are high on agreeableness seem to lack a desire for outcomes. Therefore the following is hypothesized:

Hypothesis 2: Agreeableness will be negatively related to outcome orientation.

Extraversion. Extraversion is characterized by positivity, sociability, and talkativeness (Goldberg, 1990). Researchers have generally found a positive relation between extraversion and input-related behaviours. For example, extraversion has been found to positively relate to persistence and influencing others (Komarraju & Karau, 2005), intrinsic motivation (Hart et al., 2007; Sung & Choi, 2009), performance motivation (Judge & Ilies, 2002) and accomplishment striving (Barrick et al., 2002). In regards to job performance, extraversion has demonstrated to be positively related (Hurtz & Donovan, 2000), especially in jobs where the ability to socialize is considered an asset (Barrick & Mount, 1991; Salgado, 1997).

Extraversion has also been found to positively relate to outcomes in the research literature. For example, extraversion has been found to be positively related to both economic desire (Komarraju & Karu, 2005) and enterprising (Costa et al., 1984). This should not be too surprising considering early theorizing of extraversion proposed that extraverts are motivated by extrinsic rewards (Gray, 1973), which has been supported with empirical evidence (Hart et al., 2007). In addition, researchers have also found extraversion to be positively related to income (Boudreau et al., 2001; Judge et al., 1999). This relation may not be attributed to greed; rather, extraverts are more likely to perform when extrinsic rewards (i.e., outcomes) are high (Stewart, 1996).

Based on the previous research, it appears as though extraverts are individuals who have a desire to put forth effort and contribute. In addition, individuals who are high on extraversion seem to be motivated by a desire for outcomes. Therefore the following is hypothesized:

Hypothesis 3a: Extraversion will be positively related to input orientation

Hypothesis 3b: Extraversion will be positively related to outcome orientation

Neuroticism. Neuroticism is characterized by fears, insecurity and other negative emotions (e.g., envy and gullibility; Goldberg, 1990). Neuroticism research has generally found the trait to be unrelated to input-type behaviours. For example, researchers have found neuroticism to be unrelated to both persistence and achieving (Komarraju & Karau, 2005). In addition, although Hart et al. (2007) found neuroticism to be negatively related to intrinsic motivation, it did not predict unique variance when the other Big Five traits were included in a regression model. Further, Komarraju et al. (2009) found neuroticism to be unrelated to intrinsic motivation. Even further, van Doorn and Lang (2010) found that the amount of effort put forth by neurotic individuals varies, especially when taking into account task demands and dimensions of neuroticism.

Similar effects have been found in regards to neuroticism and outcomes. For example, although Barrick et al. (2002) found neuroticism to positively relate to status striving, Boudreau et al. (2001) found neuroticism to be negatively related to income. In addition, other research has found neuroticism to be unrelated to enterprising (i.e., a desire for outcomes; Costa, McCrae & Holland, 1984), economic desire (Komarraju & Karau, 2005) and extrinsic motivation (Hart et al., 2007).

Based on this research, it appears as though individuals who are high on neuroticism are neither interested in inputting nor do they have a desire for outcomes. Therefore no hypotheses are proposed with respect to this trait..

Openness to experience. Openness to experience is characterized by creativity, curiosity and an appreciation for arts (Goldberg, 1990). A review of the openness to experience literature reveals an interesting relation between openness to experience and input-related behaviours. In general, openness to experience has been found to relate to high persistence and achieving (Komarraju & Karau, 2005). In addition, researchers have also found openness to experience to be positively related to intrinsic motivation (Komarraju et al., 2009; Sung & Choi, 2009). However, intrinsic motivation does not always translate into putting forth effort and contributing during a social exchange (Grant, 2008). That might explain why openness to experience is consistently unrelated to job performance (Barrick & Mount, 1991; Barrick, Mount & Judge, 2001; Salgado, 1997).

In regards to outcomes, the relation with openness to experience is much clearer. For example, openness to experience has been demonstrated to be unrelated to enterprising (Costa et al., 1984), job status (Furnham et al., 2009), status striving (Barrick et al., 2002) and income (Boudreau et al., 2001; Judge, Higgins, Thoresen & Barrick, 1999). Moreover, although Hart et al. (2007) found a positive bivariate relation between openness to experience and extrinsic motivation, this effect disappeared when all of the Big Five traits were included in a regression. However, Sung and Choi (2009) found no relation between openness to experience and extrinsic motivation.

Based on the discussed findings, it is theorized that openness to experience will be neither related to an individual's desire to put forth effort, nor their desire for outcomes. Thus, no hypotheses are proposed.

Despite the widespread use of the Big Five model in the literature, other models – such as, the HEXACO model (Lee & Ashton, 2004) – have emerged as useful alternatives. The HEXACO is named for its six personality traits: honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience (Lee & Ashton, 2004). Although there is significant overlap between the Big Five and HEXACO models, the sixth factor in the HEXACO model, Honesty-Humility, has been demonstrated to contribute to our understanding of perceptions of equity beyond the Big Five (Woodley et al., 2016).

Honesty-Humility

Honesty-Humility is characterized by sincerity, greed avoidance, and fairness (Lee & Ashton, 2008). Limited research has been conducted regarding Honesty-Humility and input-related behaviours. This is not surprising considering that Honesty-Humility research has mainly focused on demonstrating its incremental validity over the Big Five traits (e.g., Ashton & Lee, 2008; de Vries, de Vries, de Hoogh & Feij, 2009; McKay & Tokar, 2012). Nonetheless, some research – mainly in the area of individual performance – has investigated Honesty-Humility and input-related behaviours. For example, Johnson, Rowatt and Petrini (2011) found Honesty-Humility to positively predict job performance in caregivers. Further, both Lee, Ashton and de Vries (2005) and Lee, Ashton and Shin (2005) found Honesty-Humility to be negatively related to workplace delinquency (e.g.,

absenteeism), whereas Hilbig, Glöckner and Zettler (2014) found Honesty-Humility positively related to prosocial behaviours (e.g., helping behaviour).

Similarly, limited research has investigated Honesty-Humility and outcomes. However, the existing research has demonstrated that Honesty-Humility might be negatively related to a desire for outcomes. For example, Hilbig and Zettler (2009) found that Honesty-Humility was negatively related to selfish decision making in regards to reward allocations. Further, individuals who are high in Honesty-Humility tend to have a lower desire for power and money (Lee, Ashton, Wiltshire, Bourdage, Visser & Gallucci, 2013). Even further, and possibly more germane to the current investigation, Lee and Ashton (2006) found that Honesty-Humility measures an unwillingness to take advantage of others in social exchanges.

Based on this review of the literature, it seems as though Honesty-Humility is associated with a desire to put forth effort, especially when the effort will result in helping others. In addition, Honesty-Humility seems to have a lack of desire for outcomes. Thus, the following is hypothesized:

Hypothesis 4a: Honesty-Humility will be positively related to input orientation.

Hypothesis 4b: Honesty-Humility will be negatively related to outcome orientation.

Dark Triad

The Dark Triad is made up of three anti-social personality traits: Machiavellianism, narcissism and psychopathy. Although these traits have different theoretical origins, researchers (e.g., Fehr, Samsom & Paulhus, 1992; McHoskey, Worzel & Szyarto, 1998) have argued that the three traits are actually very similar. However, more recent evidence (e.g., Jones & Paulhus, 2014; Paulhus & Williams, 2002) suggests

that these traits are unique and should be treated as such. In line with this statement, I treat the Dark Triad as three distinct but related personality traits.

Machiavellianism. Based on the writings of Machiavelli, Machiavellianism is a personality trait associated with being manipulative (Christie & Geis, 1970). The trait is further characterized by the use of deception (Geis & Moon, 1981) and unethical practices (Winter, Stylianou, & Giacalone, 2004) for personal gains. This suggests that individuals who are high on Machiavellianism should have less desire to exert effort due to their “selfish” tendencies. In addition, Machiavellian individuals are considered likely to manipulate others for personal gains (e.g., external outcomes). Commensurate with these arguments, Woodley and Allen (2014) found that Machiavellianism is positively associated with entitlement (i.e., low input, high outcome orientation). Thus, the following is hypothesized:

Hypothesis 5a: Machiavellianism will be negatively to input orientation.

Hypothesis 5b: Machiavellianism will be positively related to outcome orientation.

Narcissism. Narcissism is a Dark Triad personality trait that is based on a psychological disorder by the same name (Raskin & Hall, 1979). In their summary, Paulhus and Williams (2002) argued that research evidence has found narcissism to be characterized by entitlement, superiority, vanity and exhibitionism (Raskin & Terry, 1988). Although the former two characteristics may suggest narcissism would be oriented towards outcomes, the latter two characteristics suggest narcissistic individuals will incorrectly perceive themselves as being input oriented (i.e., they will falsely believe that they are contributors). In support of this, Woodley and Allen (2014) found narcissism to be unrelated to equity sensitivity, arguing that the narcissists would score high on both

input and outcome orientation, therefore perceiving themselves as being “equity sensitive”. Thus, the following is hypothesized:

Hypothesis 6a: Narcissism will be positively related to input orientation.

Hypothesis 6b: Narcissism will be positively related to outcome orientation.

Psychopathy. Psychopathy, like narcissism, is also a personality trait that is based on a psychological disorder by the same name (Hare, 1985). Paulhus and Williams (2002) argued that individuals who are high in this personality trait tend to be greedy (Albert, Brigante & Chase, 1959) and egocentric (Cleckley, 1988), with a lack of both empathy (Gough, 1960) and ambition (Albert, Brigante & Chase, 1959). Greed and egocentrism are characteristics that should positively relate to an individual's desire for outcomes. In addition, a lack of empathy and ambition suggest that psychopathy should negatively relate to an individual's desire to exert effort. In support of this, Woodley and Allen (2014) found psychopathy positively related to entitlement (i.e., low input, high outcome orientation). Thus, the following is hypothesized:

Hypothesis 7a: Psychopathy will be negatively related to input orientation.

Hypothesis 7b: Psychopathy will be positively related to outcome orientation.

Equity Orientation Profiles

Historically, an extensive amount of research has focused on the variable-centered approach to examining how variables interrelate when predicting outcomes. The most frequently used method is to conduct a moderation analysis, wherein an interaction variable is created between two or more variables to examine how they interrelate in regards to the outcome. This is beneficial because it helps describe the relations between variables and also tests for variance accounted for in the variable being predicted.

However, this approach is not without limitations (see Meyer, Stanley & Vandenberg, 2013; O’Neill, McLarnon, Hoffart, Woodley & Allen, 2015). Although these moderation analyses can often be described as testing the differences between subgroups (i.e., profiles), the focus is still on the variables and does not provide a method of testing for differences between subgroups within a sample. In addition, a moderation analysis requires a large sample size due to its lack of power to detect complex interactions.

On the other hand, a person-centered approach (e.g., cluster analysis or latent profile analysis) has the ability to address many of the limitations of the variable-centered approach. A person-centered approach focuses on categorizing individuals in a given sample into different subgroups. In this case, individuals are treated in a holistic fashion rather than being inferred from the interplay between variables (Meyer et al., 2013). In addition, the person-centered approach treats group membership as a variable, making it possible to test for differences between the identified subgroups. A person-centered approach is therefore advantageous when a researcher is trying to differentiate between certain theorized subgroups or profiles of individuals within a sample or population.

As a result, I take a person-centered approach to identify the theorized equity orientation profiles. I expect to discover all four of the theorized equity orientation profiles from analyzing our two equity orientation traits: input and outcome orientation. That is, I expect to find the following subgroups: equity enthusiasts (i.e., high input; high outcome), equity apathetics (i.e., low input; low outcome), equity altruistics (i.e., high input; low outcome) and equity egoistics (i.e., low input; high outcome).

Hypothesis 8: Latent profile analysis will reveal four equity profiles: equity altruistics, equity enthusiasts, equity egoistics and equity altruistics.

Due to the exploratory nature of using latent profile analysis to identify equity orientation profiles, no hypotheses regarding the potential profiles and the personality traits are proposed.

Methods

Measure development. Following the guidelines set out by Hinkin (1998), Jackson (1970), and Spector (1992), I took a deductive approach to developing a measure of equity orientation. I began with our definition of the construct. Equity orientation, which is based on Adams' (1963; 1965) equity theory, measures individual differences in what individuals perceive to be equitable. As previously discussed, Adams' argued that there are two main components to an individual's perception of equity: inputs and outcomes. Adams' argued that individuals will adjust their inputs and their outcomes such that their ratio of inputs to outcomes is equal to relevant comparison others. Adams' referred to this ideal ratio as the 'norm of equity.' However, as previously mentioned, Huseman et al. (1985) found that individuals do not always follow Adams' equity norm, arguing that individuals had differing equity sensitivity, finding that some individuals are more input focused while others were more outcome focused. A limitation to this approach was that the authors focused on individuals having an imbalance between their inputs and outcomes (i.e., more input focused being "benevolent" and more outcome focused being "entitled"), treating them as opposite ends of an equity sensitivity continuum (i.e., unidimensional). This approach forces the ratio between these theoretically independent constructs, ignoring that individuals could vary on their inputs (high or low) and outcomes (high or low) independently (Davison & Bing, 2008). Building on these findings, equity orientation takes a bidimensional approach to

measuring individual differences in perceptions of equity, arguing that individuals differ on how much they desire to put forth effort (i.e., input orientation) and how much they desire to receive rewards (i.e., outcome orientation).

Based on the aforementioned definitions of each dimension, I generated 40 items (20 per dimension) to measure the equity orientation construct. Three independent judges, who were all subject matter experts, were asked to evaluate the 40 generated items for wording, quality, and content validity. All three subject matter experts had previous experience with test development and two of the three have developed and published their own measures. After receiving feedback from the raters, eight items were removed due to either poor wording redundancy with others items, or content invalidity. Thus, 32 items were retained (16 per dimension) to measure equity orientation (See Table 1).

Participants and procedure. Participants were undergraduate students enrolled in a first year psychology course at a large Canadian university. A total of 836 participants were recruited for the investigation with a mean age of 18.5 years (range: 16 to 54). The sample was predominately female (70%) with the most prevalent ethnicities being Caucasian (57%) and East Asian (18%).

In accordance with the university's Non-Medical Research Ethics Board (see Appendix A), all participants provided electronic informed consent prior to participating in the study. Participants completed a battery of questionnaires for course credit through an online testing process. Participants were provided instructions for each questionnaire they completed.

Table 1. *The original 32 Equity Orientation Scale items.*

 Input Orientation

1. I am someone who puts in a lot of effort
2. I always try to give my all
3. I am constantly trying to minimize how much work I have to do (R)
4. I am always finding ways to contribute
5. I like to do as much as I can
6. Ideally, I'd prefer to sit back while others do the work (R)
7. I am known as someone who always helps
8. I try to help those around me
9. I can be lazy at times (R)
10. I often volunteer to take on more responsibilities
11. I frequently offer my assistance to others
12. I do not like when I have to do more than the bare minimum (R)
13. I give more than others around me
14. Those who know me well would refer to me as a giver
15. I try to do as little as possible (R)
16. I am frequently referred to as a hard worker

Outcome Orientation

1. The compensation I receive for my actions is important to me
2. I want to be rewarded for the work I complete
3. Generally, compensation is not what motivates my behaviour (R)
4. I base my decisions on the outcomes I will receive
5. I find knowing what I will get in return for my efforts motivates me
6. What I get out of situations is of little importance to me (R)
7. My actions are dictated by what I will get for them
8. I tend not to act until I know what is in it for me
9. I am rarely concerned with how I will personally benefit from a situation (R)
10. I put a lot of weight on personal gains and/or benefits when making decisions
11. When someone asks me for something, I think or say "what is in this for me?"
12. I tend not to be motivated by external rewards (R)
13. The rewards for my behaviour are very important to me

14. Outcomes (e.g., bonuses, rewards, or accolades) are a major source of motivation for me
 15. I do not worry about receiving rewards or benefits for my efforts (R)
 16. I try to get as much as I can in life
-

Measures. *Equity orientation.* Equity orientation was measured using the 32 remaining items from the item generation stage and administered to the participants (see Appendix B). The 16 input orientation items were administered together, as were the 16 outcome orientation items. A sample input orientation item is, “I am someone who puts in a lot of effort,” whereas a sample outcome orientation item is, “I want to be rewarded for the work I complete.” Each item was responded to on a seven-point Likert-type agreement scale (1 = strongly disagree; 7 = strongly agree).

The Big Five. Items based on Costa and McCrae’s (1992b) NEO PI-R from the International Personality Item Pool (IPIP; Goldberg et al., 2006) were used to measure the Big Five personality traits (see Appendix B). A 50-item questionnaire with 10 items per trait was used. For each trait, there were five positively worded and five negatively worded items. Participants will respond to these items on a five-point Likert-type agreement scale (1 = strongly disagree; 5 = strongly agree). The IPIP items have been demonstrated to have strong internal consistency with Cronbach’s alphas ranging from .77 to .86 (Goldberg et al., 2006).

Honesty-Humility. To measure Honesty-Humility, 10 items from the 60-item HEXACO questionnaire (Ashton & Lee, 2009) consisting of both positively and negatively keyed items were used (see Appendix B). Participants responded to these items on a five-point Likert-type agreement scale (1 = strongly disagree; 5 = strongly agree). Previous research with these items has found them to have strong internal consistency in both student and community samples (Ashton & Lee, 2009).

The Dark Triad. The original Short Dark Triad measure (SDT; Paulhus & Jones, 2011) was used to measure Machiavellianism, narcissism and psychopathy (see

Appendix B). The measure includes 28 positively and negative keyed items with nine-to-ten items per trait. Participants responded to each item on a five-point Likert-type agreement scale (1 = strongly disagree; 5 = strongly agree). Paulhus and Jones (2011) found strong internal consistency after administering the SDT to a student sample.

Results

Exploratory factor analysis. To investigate the dimensionality of the Equity Orientation Scale, I conducted an exploratory factor analysis using structural equation modeling (ESEM) in *Mplus 7*. An advantage of ESEM over either principal components or principal axis analysis is that it takes into account potential measurement error in the analysis. In addition, ESEM provides a test of the significance for item loadings, plus both model fit and modification indices that can be used for evaluating how well the factor structure fits the data and to reduce the number of items on the scale.

An ESEM model that tested one, two and three factors using an orthogonal (Geomin) rotation on the original 32 items was conducted. The model fit statistics for each model are presented in Table 2. After examining the factor loadings, internal consistencies and modification indices for each item, we removed 20 items resulting in a 12-item Equity Orientation Scale. We reran the one-, two- and three-factor ESEM models on the 12-item scale and found improved model fit (see Table 2). Although the three-factor model had the best model fit in both ESEM analyses, it lacked any theoretical support for the interpretation of the factors. Instead, the two-factor model, which still met the model fit criteria (Williams, Vandenberg & Edwards, 2009), was consistent with the proposed equity orientation theory. As a result, we adopted the two-factor model. The factor loadings for the two-factor model are presented in Table 3.

Table 2. Summary of the exploratory structural equation for modeling for the Equity Orientation Scale.

32 item scale						
Model	χ^2	$\Delta\chi^2$	RMSEA	SRMR	CFI	TLI
1 Factor	14904.15	-	.19	.19	.47	.43
2 Factor	5536.21	-9367.94	.12	.07	.81	.79
3 Factor	3821.77	-1714.44	.10	.05	.87	.85
12 item scale						
Model	χ^2	$\Delta\chi^2$	RMSEA	SRMR	CFI	TLI
1 Factor	3469.94	-	.28	.20	.54	.43
2 Factor	374.12	-3095.82	.10	.03	.96	.93
3 Factor	234.75	-139.37	.09	.03	.97	.95

Note. Geomin orthogonal rotation was used.

Table 3. *Factor loadings for the final 12-item Equity Orientation Scale.*

#	Items	F1	F2
IN1	I am someone who puts in a lot of effort	.68*	-.00
IN4	I am always findings ways to contribute	.83*	-.08*
IN5	I like to do as much as I can	.79*	-.06
IN7	I am known as someone who always helps	.76*	-.00
IN11	I frequently offer my assistance to others	.61*	-.11*
IN13	I give more than others around me	.59*	.03
OUT2	I want to be rewarded for the work I complete	.09*	.68*
OUT4	I base my decisions on the outcomes I will receive	-.01	.64*
OUT9	I am rarely concerned with how I will personally benefit from a situation (R)	.16*	-.56*
OUT10	I put a lot of weight on personal gains and/or benefits when making decisions	-.04	.70*
OUT13	The rewards for my behaviour are very important to me	-.04	.79*
OUT15	I do not worry about receiving rewards or benefits for my efforts (R)	.15*	-.65*

Note. IN, input orientation; OUT, outcome orientation.

* $p < .05$

Correlational analyses. The means, standard deviations, intercorrelations, and Cronbach's alphas for all variables are reported in Table 4. Input orientation and outcome orientation were negatively related to each other ($r = -0.12, p < .01$). In regards to the Big Five and Honesty-Humility, input orientation was positively related to Conscientiousness ($r = 0.55, p < .001$), Agreeableness ($r = 0.33, p < .001$) Openness to experience ($r = 0.15, p < .001$), Extraversion ($r = 0.30, p < .001$) and Honesty-Humility ($r = 0.11, p < .01$) providing support for Hypotheses 1, 3a, and 4a. In addition, input orientation was negatively related to Neuroticism ($r = -0.17, p < .001$). Outcome orientation was negatively related to Conscientiousness ($r = -0.14, p < .001$), Agreeableness ($r = -0.26, p < .001$), and Honesty-Humility ($r = -0.46, p < .001$), providing support for Hypotheses 2 and 4b. In addition, outcome orientation was positively related to Neuroticism ($r = 0.12, p < .05$), whereas both Openness to experience ($r = -0.04, ns$) and Extraversion ($r = 0.01, ns$) were unrelated.

In regards to the Dark Triad, input orientation was negatively related to both Machiavellianism ($r = -0.15, p < .01$) and psychopathy ($r = -0.28, p < .001$). In addition, input orientation was positively related to narcissism ($r = 0.24, p < .001$), providing support for Hypotheses 5a, 6a, and 7a. Further, outcome orientation was positively related to Machiavellianism ($r = 0.41, p < .001$), narcissism ($r = 0.22, p < .001$) and psychopathy ($r = 0.26, p < .001$), providing support for Hypotheses 5b, 6b, and 7b.

Multiple regression analyses. To further our understanding of the relations between the proposed personality models on input and outcome orientation, multiple regression analyses were conducted to determine each model's (i.e., Big Five and Honesty-Humility model and the Dark Triad model) unique contributions when

Table 4. Variable means, standard deviations, intercorrelations and Cronbach's alphas for Study 1.

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. IN	5.13	0.89	.83 ^a										
2. OUT	4.26	1.01	-.12	.81 ^a									
3. C	3.43	0.63	.55	-.14	.81 ^a								
4. A	3.65	0.52	.33	-.26	.30	.74 ^a							
5. N	2.69	0.78	-.17	.12	-.33	-.37	.88 ^a						
6. O	3.51	0.57	.15	-.04	.06	.08	-.00	.73 ^a					
7. E	3.45	0.76	.30	.01	.24	.16	-.39	.11	.89 ^a				
8. H	3.13	0.65	.11	-.46	.17	.37	-.08	.12	-.14	.74 ^a			
9. DTM	2.97	0.51	-.15	.41	-.19	-.51	.17	-.08	-.16	-.48	.72 ^a		
10. DTN	3.04	0.53	.24	.22	.17	.02	-.32	.09	.61	-.34	.12	.70 ^a	
11. DTP	2.13	0.60	-.28	.26	-.31	-.55	.15	-.06	.04	-.45	.47	.20	.77 ^a

Note. M, mean; SD, standard deviation; IN, input orientation; OUT, outcome orientation; C, Conscientiousness; A, Agreeableness; N, Neuroticism; O, Openness to Experience; E, Extraversion; H, Honesty-Humility; DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy.

r greater than: .12, $p < .001$; .10, $p < .01$; .07, $p < .05$. ^aCronbach's alpha.

predicting either dependent variable (i.e., input and outcome orientation). The results for the Big Five and Honesty-Humility are shown in Table 5, whereas the results for the Dark Triad are shown in Table 6.

The Big Five and Honesty-Humility accounted for a significant proportion of the variance in both input ($R^2 = 0.38, p < .001$) and outcome ($R^2 = 0.22, p < .001$) orientation. Conscientiousness ($\beta = 0.49, p < .001$), Agreeableness ($\beta = 0.19, p < .001$), Neuroticism ($\beta = 0.14, p < .001$) Openness to experience ($\beta = 0.09, p < .01$) and Extraversion ($\beta = 0.19, p < .001$) predicted unique variance in input orientation, providing further support for Hypotheses 1 and 3a. In addition, Agreeableness ($\beta = -0.09, p < .05$) and Honesty-Humility ($\beta = -0.43, p < .001$) predicted unique variance in outcome orientation, providing further support for Hypotheses 2 and 4b.

The Dark Triad accounted for a significant proportion of variance in both input ($R^2 = 0.17, p < .001$) and outcome ($R^2 = 0.20, p < .001$) orientation. Both narcissism ($\beta = 0.31, p < .001$) and psychopathy ($\beta = -0.33, p < .001$) predicted unique variance in input orientation, providing further support for Hypotheses 6a and 7a. In addition, Machiavellianism ($\beta = 0.36, p < .001$) and narcissism ($\beta = 0.16, p < .001$) predicted unique variance in outcome orientation, providing further support for Hypotheses 5b and 6b.

Relative importance analyses. I conducted relative importance analyses to examine which of the traits in each model (i.e., the Big Five and Honesty-Humility model and the Dark Triad model) accounted for the most variance in either input or outcome orientation. Relative importance analysis creates a clearer understanding of the relations between the multiple predictors and the dependent variable, especially when the predictor

Table 5. Summary of multiple regression and relative importance analysis for input and outcome orientation on the Big Five and Honesty-Humility traits in Study 1.

Variables	IN					OUT				
	β	rRW	RW%	CI _L	CI _U	β	rRW	RW%	CI _L	CI _U
C	.49***	.24	63.17	.20	.29	-.02	.01	2.92	.00	.02
A	.19***	.06	15.26	.04	.09	-.09*	.03	15.05	.02	.06
N	.14***	.01	2.40	.00	.02	.03	.01	2.22	-.00 ^a	.02 ^a
O	.09**	.01	3.69	.00	.03	.02	.00	0.35	-.01 ^a	.01 ^a
E	.19***	.05	14.05	.03	.08	-.02	.00	0.74	-.00 ^a	.01 ^a
H	-.02	.01	1.44	.00	.02	-.43***	.18	78.72	.13	.22
R^2	.38***					.22***				

Note. β , standardized regression weight; SE, standard error; R^2 , squared multiple correlation; rRW, raw relative weight; RW%, relative weight percentage; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval for the significance test. IN, input orientation; OUT, outcome orientation; C, Conscientiousness; A, Agreeableness; N, Neuroticism; O, Openness to Experience; E, Extraversion; H, Honesty-Humility.

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

Table 6. Summary of multiple regression and relative importance analysis for input and outcome orientation on the Dark Triad in Study 1.

Variables	IN					OUT				
	β	rRW	RW%	CI _L	CI _U	β	rRW	RW%	CI _L	CI _U
DTM	-.03	.01	7.65	.00	.03	.36***	.13	67.24	.09	.18
DTN	.31***	.08	44.44	.04	.12	.16***	.03	17.29	.01	.06
DTP	-.33***	.08	47.90	.05	.12	.05	.03	15.47	.01	.05
R^2	.17***					.20***				

Note. β , standardized regression weight; SE, standard error; R^2 , squared multiple correlation; rRW, raw relative weight; RW%, relative weight percentage; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval for the significance test. IN, input orientation; OUT, outcome orientation; DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy.

*** $p < .001$.

variables are correlated. Relative importance analysis partitions the variance accounted for (i.e., the R^2) from the regression model between the predictors to investigate how much each predictor contributes to the total R^2 (Johnson, 2000; Johnson & LeBreton, 2004; Tonidandel & LeBreton, 2011).

The relative importance analyses were conducted using Tonidandel and LeBreton's (2014) web-based tool and are presented in Table 5 for the Big Five and Honesty-Humility and Table 6 for the Dark Triad model. The analyses revealed that Conscientiousness (63%), Agreeableness (15%), Neuroticism (2%), Openness to experience (4%) and Extraversion (14%) accounted for a significant portion of the total variance in input orientation, whereas only Agreeableness (15%) and Honesty-Humility (79%) accounted for a significant portion of the total variance in outcome orientation, providing further support for Hypotheses 1, 2, 3a, and 4b.

In regards to the Dark Triad, the analyses revealed that Machiavellianism (8%), narcissism (44%) and psychopathy (48%) all accounted for a significant portion of the total variance in input orientation. In addition, the analyses revealed that Machiavellianism (67%), narcissism (17%) and psychopathy (16%) accounted for a significant portion of the total variance in outcome orientation, providing further support for Hypotheses 5a, 5b, 6a, 6b, 7a and 7b.

Latent profile analyses. To identify potential equity orientation subgroups – or “profiles” – latent profile analysis (LPA) with robust maximum likelihood estimator was conducted in *Mplus* 7. This approach has many advantages over the variable-centred approach to identifying subgroups (e.g., moderated multiple regression). In addition, other person-centric techniques (e.g., cluster analysis; Magidson & Vermunt, 2004;

Vermunt & Madgidson, 2002) are limited because they do not provide model fit indices, making subgroup decisions more subjective than the LPA approach. Thus, when investigating potential profiles based on continuous variables (e.g., input and outcome orientation), LPA is arguably the most valid technique (cf. Wang & Hanges, 2011; Morin, Morizot, Boudrias, & Madore, 2011).

Following the recommendations of Pastor, Barron, Miller and Davis (2007), the optimal solution was identified by starting with a single-profile model and then adding profiles in subsequent analyses. A profiles model that had the best combination of low Akaike Information Criteria (AIC), Bayesian Information Criterion (BIC) and sample-size adjusted BIC (aBIC) values were favoured. Further, the following ratio tests of significance, which compare a profile model with k profiles to a profile model with $k-1$ profiles (e.g., comparing a three profile model to a two profile model) were examined: the Vuong-Lo-Mendall-Rubin likelihood ratio test (VLMR), the Lo-Mendell-Rubin adjusted likelihood ratio test, and the bootstrapped likelihood ratio test (BLRT; McLachlan & Peel, 2000). Even further, profile models with both higher posterior probabilities and higher entropy were preferred.

Table 7 contains the model fit indices for the one- through five-profile LPAs in Study 1. Although the five-profile model had the lowest AIC, aBIC, and a significant BLRT, it had the smallest entropy, non-significant VLMR and aLMR, and high BIC. In contrast, the four-profile model had one of the smallest AIC, BIC, and aBIC, significant VLMR and aLMR, one of the largest entropy (.79) and posterior probabilities of profile membership ranging from 72% to 91%. In addition, the four-profile model is consistent with the proposed equity orientation theory. In accordance with Marsh, Ludtke,

Table 7. Summary of the latent profile analysis model fit indices for equity orientation in Study 1.

	Log-likelihood	AIC	BIC	aBIC	<i>p</i> VLMR	<i>p</i> aLMR	<i>p</i> BLRT	Entropy
1-profile	-2272.27	4552.55	4571.45	4558.75	-	-	-	-
2-profile	-2250.39	4514.79	4547.87	4525.64	.00	.00	.00	.80
3-profile	-2233.17	4486.33	4533.60	4501.84	.00	.00	.00	.76
4-profile	-2229.29	4484.58	4546.02	4504.74	.01	.02	.15	.79
5-profile	-2223.42	4478.84	4554.46	4503.65	.07	.09	.02	.64

Note. AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria; aBIC, sample-sized adjusted BIC; *p* VLMR, *p*-value for the Vuong-Lo-Mendell-Rubin likelihood ratio test; *p* aLMR, *p*-value for the Lo-Mendell-Rubin adjusted likelihood ratio test; *p* BLRT, *p*-value for the bootstrapped likelihood ratio test.

Trautwein and Morin (2009) and Muthén (2003), decisions about the appropriate number of profiles should have a strong theoretical reasoning. As a result, the four-profile model was retained. Figure 2 contains the pattern of input and outcome orientation for the four-profile model. The proposed equity orientation profiles of equity altruistic, equity enthusiastic, equity egoistic and equity apathetic were found, providing support for Hypothesis 8.

A Wald chi-square test of equality of means was conducted to examine mean differences in personality traits across the four equity orientation profiles. In regard to the Big Five personality traits and Honesty-Humility, the four equity orientation profiles differed significantly on Conscientiousness, Agreeableness, Neuroticism, Extraversion and Honesty-Humility; however, the four profiles did not differ on Openness to experience (see Table 8). More specifically, equity altruistics were the highest on Conscientiousness and Agreeableness, lowest on Neuroticism and highest on Honesty-Humility. Equity enthusiasts were also high on Conscientiousness and low on Neuroticism; however, they were also the second lowest on Honesty-Humility. Equity egoistics were the lowest on Conscientiousness, Agreeableness and Honesty-Humility, and the highest on Neuroticism. Finally, equity apathetics were the second lowest on Conscientiousness and the second highest on Honesty-Humility.

In regards to the Dark Triad traits, the four equity orientation profiles were found to differ significantly on all Dark Triad traits (see Table 9). More specifically, equity altruistics were the lowest on Machiavellianism, narcissism and psychopathy. Equity enthusiasts were the second highest on Machiavellianism and the highest on narcissism.

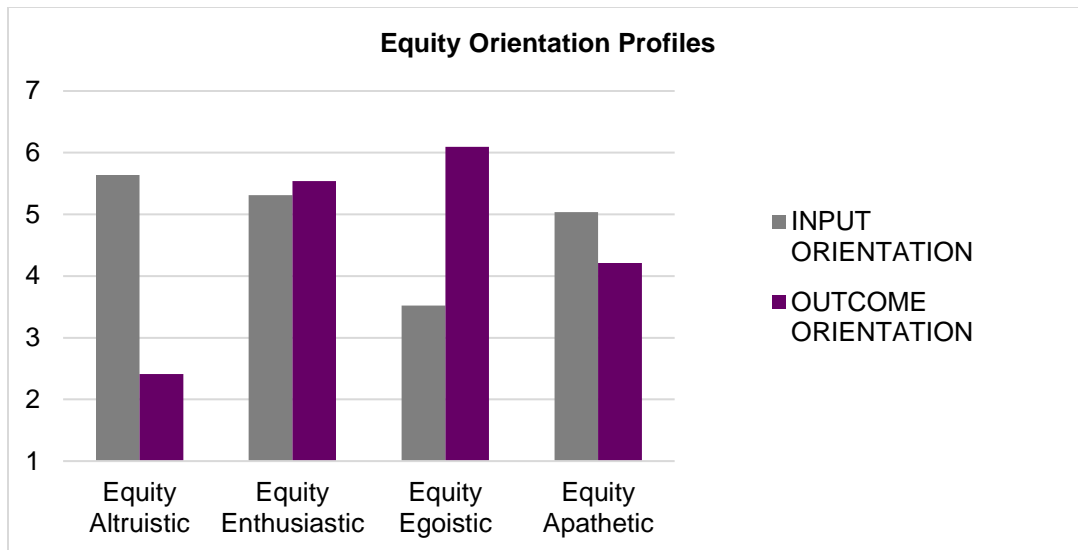


Figure 2. Equity orientation profiles in Study 1.

Table 8. Summary of the Wald Chi-Square Test of Mean Equality for the Big Five and Honesty-Humility traits across equity orientation profiles in Study 1.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
C	3.81 _a	3.64 _a	1.82 _b	3.35 _c	50.66***
A	4.07 _a	3.55 _b	2.68 _c	3.63 _b	63.75***
N	2.42 _a	2.69 _{a,c}	3.78 _b	2.71 _c	12.83**
O	3.62 _a	3.53 _a	3.43 _a	3.50 _a	2.61
E	3.54 _{a,b}	3.65 _a	2.86 _{a,b}	3.41 _b	5.47
H	3.81 _a	2.68 _b	1.99 _c	3.14 _d	139.33***

Note. C, Conscientiousness; A, Agreeableness; N, Neuroticism; O, Openness to Experience; E, Extraversion; H, Honesty-Humility.

Unshared subscripts indicate means that are significantly different by row.

*** $p < .001$. ** $p < .01$.

Table 9. Summary of the Wald Chi-Square Test of Mean Equality for the Dark Triad traits across equity orientation profiles in Study 1.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
DTM	2.45 _a	3.27 _b	3.90 _c	2.96 _d	127.90***
DTN	2.90 _a	3.41 _b	2.90 _{a,b}	2.98 _a	35.08***
DTP	1.63 _a	2.21 _b	2.96 _c	2.17 _b	74.79***

Note. DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy.

Unshared subscripts indicate means that are significantly different by row.

*** $p < .001$.

Equity egoistics were the highest on both Machiavellianism and psychopathy. Lastly, Equity apathetics were the second lowest on Machiavellianism.

Study 1 Discussion

The results of Study 1 provided initial support for the bidimensional structure of the equity orientation construct. An exploratory structural equation model (ESEM) was conducted to test the dimensionality of the Equity Orientation Scale and to reduce the number of items. The original 32 items were reduced to 12-items that loaded significantly on their respective factors. Although the three-factor model had a significantly improved chi-square over the two-factor model, an examination of the factor structure did not reveal any meaningful interpretations. As a result, the two-factor model, which produced two separate input and outcome orientation factors, was retained. In addition, the model fit indices for the two-factor model were acceptable (Williams, Vandenberg & Edwards, 2009), providing support for the bidimensional structure of the equity orientation construct.

Variable-centred analysis. The results of Study 1 found general support for many of the hypotheses regarding the relations between the Big Five and Honesty-Humility traits with input and outcome orientation. The hypotheses regarding Conscientiousness were partially supported. It was proposed that Conscientiousness would be positively related to input orientation (Hypothesis 1) and be unrelated to outcome orientation. I found support for the positive relation between Conscientiousness and input orientation with a positive and significant correlation between the two variables. This finding was further corroborated with both multiple regression and relative importance analyses wherein Conscientiousness predicted unique variance in

input orientation and accounted for the majority of variance (~63%) of the variance in the regression model. These findings provide support for a positive relation between Conscientiousness and input orientation. The relation between Conscientiousness and outcome orientation, however, was less clear. A significant and negative correlation was found between the two variables. In the multiple regression analysis, Conscientiousness did not predict unique variance in outcome orientation; nevertheless, it did account for a significant, but small (3%) portion of the variance accounted for in the regression model. Thus, Conscientiousness might have a small, negative relation to outcome orientation.

The hypotheses regarding Agreeableness were also partially supported. Agreeableness was proposed to be unrelated to input orientation and negatively related to outcome orientation (Hypothesis 2). I found a medium and positive correlation between Agreeableness and input orientation. In addition, the multiple regression analysis revealed that Agreeableness predicted unique variance in input orientation and a significant portion of the variance accounted for in the regression model suggesting that Agreeableness might have a positive relation to input orientation. Interestingly, however, I found a significant correlation between Agreeableness and outcome orientation. In addition, Agreeableness predicted unique variance in outcome orientation and a significant portion of the variance accounted for in the regression model, providing support for Agreeableness having a negative relation to outcome orientation.

It was proposed that Neuroticism would be unrelated to both input and outcome orientation. I found a significant small and negative correlation between Neuroticism and input orientation. Interestingly, in the regression model, Neuroticism predicted unique variance in input orientation and a significant, but small (<3%), portion of the variance

accounted for in the regression model; however, this relation was *positive* suggesting that the relations between Neuroticism and input orientation found in Study 1 could be spurious. In addition, I found a significant small and positive correlation between Neuroticism and outcome orientation. Nonetheless, this relation was not corroborated with either multiple regression or relative importance analysis. I found that Neuroticism did not predict unique variance in outcome orientation and did not account for a significant portion of the variance accounted for in the regression model, suggesting that Neuroticism has no relation to outcome orientation.

Similar to Neuroticism, it was proposed that Openness to experience would be unrelated to input and outcome orientation. I found a significant small and positive correlation between Openness to experience and input orientation. In addition, Openness to experience predicted unique variance in input orientation and accounted for a significant, but small (<4%), portion of the variance in the regression model. These findings suggest that Openness to experience has a small, positive relation to input orientation. However, I found a non-significant relation between Openness to experience and outcome orientation. In addition, Openness to experience did not predict unique variance in outcome orientation nor did it account for a significant portion of the variance in the regression model. Thus, Openness to experience was found to be unrelated to outcome orientation.

The hypotheses regarding Extraversion were partially supported. It was proposed that Extraversion would be the only Big Five trait to be positively related to both input (Hypothesis 3a) and outcome (Hypothesis 3b) orientation. I found a significant medium and positive correlation between Extraversion and input orientation. This positive relation

was corroborated with both the multiple regression and relative importance analyses. However, I found that Extraversion was unrelated to outcome orientation. In addition, both multiple regression and relative importance analyses found non-significant relations between Extraversion and outcome orientation. These results did not support Hypothesis 3b, suggesting that Extraversion and outcome orientation are unrelated.

The hypotheses regarding Honesty-Humility were also partially supported. It was proposed that Honesty-Humility would be positively related to input orientation (Hypothesis 4a) and negatively related to outcome orientation (Hypothesis 4b). I found a significant small and positive correlation between Honesty-Humility and input orientation. In the multiple regression model, however, Honesty-Humility did not predict unique variance in input orientation and only accounted for a small (<2%), but significant, portion of the variance in the regression model. These results provide partial support for the proposed positive relation between Honesty-Humility and input orientation. I found a significant medium and negative correlation between Honesty-Humility and outcome orientation. In addition, Honesty-Humility predicted unique variance in outcome orientation and accounted for the majority of the variance (~79%) in the regression model. These findings suggest that Honesty-Humility is negatively related to outcome orientation.

The results of Study 1 also found general support for the relations between the Dark Triad traits with input and outcome orientation. The hypotheses regarding Machiavellianism were mostly supported. Machiavellianism was proposed to be negatively related to input orientation (Hypothesis 5a) and positively related to outcome orientation (Hypothesis 5b). I found that Machiavellianism had a significant small and

negative correlation with input orientation. In the regression model, however, Machiavellianism did not predict unique variance in input orientation, but accounted for a small portion (<8%) of the variance accounted for in the model. These results provide partial support for the proposed negative relation between Machiavellianism and input orientation. In addition, I found a significant medium and positive relation between Machiavellianism and outcome orientation. This finding was further corroborated with both multiple regression and relative importance analyses wherein Machiavellianism predicted unique variance in outcome orientation and accounted for the majority (~67%) of the variance in the regression model. These findings support the proposed positive relation between Machiavellianism and outcome orientation.

The hypotheses regarding narcissism were both supported. It was proposed that narcissism would be positively related to both input (Hypothesis 6a) and outcome (Hypothesis 6b) orientation. I found that narcissism had a significant small and positive correlation with input orientation. This finding was further corroborated with both multiple regression and relative importance analyses wherein narcissism predicted unique variance in input orientation and accounted for a significant portion of the variance in the regression model. These findings support the proposed positive relation between narcissism and input orientation. Similarly, I found that narcissism had a significant small and positive correlation with outcome orientation. This finding was also corroborated with both multiple regression and relative importance analyses wherein narcissism predicted unique variance in input orientation and accounted for a significant portion of the variance in the regression model. These findings support the proposed positive relation between narcissism and outcome orientation.

Similar to Machiavellianism, the hypotheses regarding psychopathy were mostly supported. Psychopathy was proposed to be negatively related to input orientation (Hypothesis 7a) and positively related to outcome orientation (Hypothesis 7b). I found a significant small and negative relation between psychopathy and input orientation. This finding was further corroborated with both multiple regression and relative importance analyses wherein psychopathy predicted unique variance in outcome orientation and accounted for the largest portion (~48%) of the variance in the regression model. These findings support the proposed negative relation between psychopathy and input orientation. In addition, I found that psychopathy had a significant small and positive correlation with outcome orientation. In the regression model, however, psychopathy did not predict unique variance in outcome orientation, but accounted for the smallest portion (<16%) of the variance accounted for in the model. These results provide partial support for the proposed positive relation between psychopathy and outcome orientation.

The results of the variable-centred analyses for Study 1 demonstrated that input and outcome orientation had unique relations with the Big Five and Honesty-Humility personality model and the Dark Triad model. In general, for the Big Five and Honesty-Humility, I found that Conscientiousness and Extraversion were related to input orientation, whereas Agreeableness and Honesty-Humility were related to outcome orientation. For the Dark Triad, Machiavellianism and narcissism were related to input orientation, whereas narcissism and psychopathy were related to outcome orientation. In sum, the Big Five and Honesty-Humility model and the Dark Triad model contributed to the understanding of the nomological network on the equity orientation construct and its two dimension (i.e., input and outcome orientation).

Person-centred analysis. The person-centred analysis found initial support for Hypothesis 8, which proposed that there would be four equity orientation profiles: equity altruistic (high input orientation, low outcome orientation), equity enthusiastic (high input and outcome orientation), equity egoistic (low input orientation, high outcome orientation) and equity apathetic (low input and outcome orientation). Further, I found that the profiles differed significantly on many of the personality traits examined. In regards to the Big Five and Honesty-Humility traits, equity altruistics were found to be high on Conscientiousness, Agreeableness and Honesty-Humility, and low on Neuroticism. Equity enthusiasts were also high on Conscientiousness and low on Neuroticism. In addition, relatively speaking, equity enthusiasts appear to be higher on Extraversion. In contrast, equity egoistics are low on Conscientiousness, Agreeableness, and Honesty-Humility and high on Neuroticism. Interestingly, equity apathetics tended to fall in between the other profiles in regards to most of the traits. In fact, relatively speaking, the equity apathetic scores are extremely similar if not identical to the mean scores for the Big Five and Honesty-Humility traits.

In regards to the Dark Triad traits, the four equity orientation profiles differed significantly on Machiavellianism, narcissism and psychopathy. Equity altruistics were found to be low on Machiavellianism, narcissism and psychopathy. Equity enthusiasts were somewhat high on Machiavellianism and the high on narcissism. Equity egoistics were high Machiavellianism and psychopathy and low on narcissism. Again, equity apathetics were neither high nor low on the Dark Triad traits with their mean scores nearly identical to the sample means for each trait. These results, in combination with the

Big Five and Honesty-Humility traits, help to develop an understanding of the personalities of the individuals that are in each of the equity orientation profiles.

Nonetheless, being the first study to investigate these interrelations means the results should be interpreted with caution and need to be replicated. Further, these results are based on self-report data that can result in common method bias, which can negatively influence results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Even further, the data was based on the Big Five model and the addition of Honesty-Humility, rather than the full HEXACO personality model (Ashton & Lee, 2008). I therefore conducted a second study to address these issues.

Study 2

Study 2 was conducted to address potential limitations of the previous study. First, although Study 1 introduced the personality trait of Honesty-Humility as an incremental predictor of equity orientation beyond what is predicted to be found with the Big Five, the full HEXACO personality model was not implemented. In some cases, the HEXACO model as a whole does a better job of predicting criteria than the Big Five plus Honesty-Humility (e.g., Ashton & Lee, 2008; Lee et al., 2013; Woodley et al., 2015). Both theoretically and analytically, there are important differences between the Big Five and the HEXACO beyond the presence of the Honesty-Humility trait. Indeed, the agreeableness and emotionality factors are rotational variants in comparison to their Big Five counterparts. Second, more recent research on dark personality traits has revealed a fourth trait: sadism. Therefore, I sought to investigate whether sadism adds to our understanding of equity orientation beyond what is found in Study 1 with the Dark Triad. Third and finally, the first study consisted of self-report data, which is susceptible to

validity concerns such as common method bias (Podsakoff et al., 2003). It is important to demonstrate support for hypotheses beyond self-reports measures (e.g., peer-reports) when investigating the relations between personality traits (Hofstee, 1994). Moreover, there are likely to be unique aspects of the relations that may go unnoticed if observer reports of personality traits are not incorporated into the validation process (Oh, Lee, Ashton, & De Vries, 2011).

In sum, the current study investigates the relation between personality and equity orientation using the entirety of the HEXACO personality model. Further, I included a fourth anti-social personality trait, sadism, to examine whether it provides any unique contributions to our understanding of equity orientation dimensions and profiles. Even further, both self-ratings and peer-ratings were obtained for all personality traits to examine the robustness of our findings across sources.

The Dark Tetrad

More recent research on subclinical levels of antisocial personality traits has revealed a fourth trait, creating the “Dark Tetrad” rather than the “Dark Triad.” Paulhus (2014) argues that this fourth trait, sadism, differs from the original three (i.e., Machiavellianism, psychopathy and narcissism) in that individuals take enjoyment in the suffering of others, whereas the other three traits do not share this characteristic.

Sadism. Similar to other dark personality traits (e.g., subclinical narcissism), sadism (also referred to as “everyday sadism”) is a subclinical version of a personality disorder. Individuals who score high on everyday sadism are considered to take pleasure and enjoyment out of being cruel to others (Buckels, Jones & Paulhus, 2013). These individuals are likely to play violent video games (Greitemeyer, 2015) and troll others on

the Internet (Buckels, Trapnell & Paulhus, 2014). Although research on subclinical sadism has been increasing in recent years, there is still much research to be done. Consequently, there is a lack of research relating sadism to inputs and/or outcomes. Nonetheless, theoretically speaking, individuals who score high on sadism should be less likely to put forth effort or contribute, preferring to let others suffer and struggle with what needs to be done. However, watching people suffer and struggle might be considered an external reward to someone who scores high on sadism. Based on this theorizing, the following is hypothesized:

Hypothesis 9a: Sadism will be negatively related to input orientation

Hypothesis 9b: Sadism will be positively related to outcome orientation

Equity Orientation Profiles

As previously mentioned, I take a person-centered approach to examining equity orientation profiles. I expect to replicate the number of profiles found in Study 1, revealing all four equity orientation profiles (i.e., equity enthusiastic, equity apathetic, equity altruistic and equity egoistic). In addition, based on the findings of Study 1 in regards to the equity orientation profiles and the other dark personalities, I expect to find a similar pattern regarding levels of sadism and equity orientation profiles herein. More specifically, it is hypothesized that the equity altruistics will score the lowest and the equity egoistics will score the highest on sadism. Thus, the following is hypothesized:

Hypothesis 10: The equity orientation profiles will differ significantly on everyday sadism.

Methods

Participants and procedure. Participants were undergraduate students enrolled in a first year psychology course at a large Canadian university and a peer that they selected to bring to the study as a peer participant. A total of 600 participants (300 dyads) were recruited for the investigation with a mean age of 18.5 years (range: 16 to 53). The sample was predominately female (65%) with the most prevalent ethnicities being Caucasian (38%), East Asian (35%) and South Asian (13%). In regards to each dyad's relationship, they were predominately friends (72%) and/or roommate (39%) with some partners (7%) and family members (7%). Overall, participants reported knowing each other, on average, for four years and five months ($SD = 5$ years) with a range of 1 month (for roommates only) to 20 years.

In accordance with the university's Non-Medical Research Ethics Board (see Appendix C), all participants provided written informed consent prior to participating in the study. Participants completed a battery of questionnaires through an online testing process. Participants were provided instructions for each questionnaire they completed. Although the participant who signed up for the study had to receive course credit for participating, in some instances the peer they brought was not enrolled in the course and therefore could not receive course credit. In these instances, the peer participant was given a \$5 gift card for participating.

Measures. *Equity orientation.* The 12-item (6 input orientation, 6 outcome orientation) Equity Orientation Scale from Study 1 was administered (see Appendix D). A sample input orientation item is, "I am someone who puts in a lot of effort." A sample of an outcome orientation item is, "I want to be rewarded for the work I complete." Each

item was responded to on a seven-point Likert-type scale (1 = strongly disagree; 7 = strongly agree).

HEXACO. The HEXACO personality traits will be measured using the 24-item, Brief HEXACO Inventory (de Vries, 2013; see Appendix D). Each personality trait was measured with 4 items (a single item per facet for each trait). Participants responded to each item on a five-point Likert-type agreement scale (1 = strongly disagree; 5 = strongly agree).

The Dark Tetrad. The Dark Tetrad was measured using the Short Dark Triad measure (SD3; Jones & Paulhus, 2014) and seven items from the Varieties of Sadistic Tendencies (VAST; Paulhus & Jones, 2015; see Appendix D). The seven items have been used previously to measure sadism as a part of the Dark Tetrad (Buckels et al., 2013). Participants responded to each item on a five-point Likert-type agreement scale (1 = strongly disagree; 5 = strongly agree).

Results

Confirmatory factor analysis. To verify the dimensionality of the Equity Orientation Scale (EOS), confirmatory factor analyses (CFA) on the self- and peer-reported indicators were conducted using *Mplus7*. Three measurement models were investigated for model fit: unidimensional, bidimensional-correlated, and bidimensional-orthogonal (See Table 10). Based on the delta chi-square value, the bidimensional-correlated model had the best model fit for both the self-reported (CFI = .86, TLI = .82, RMSEA = .10, SRMR = .07) and the peer-reported (CFI = .88, TLI = .85, RMSEA = .12, SRMR = .06) indicators. However, these model fit indices were less than ideal. To address this issue, the modification indices for both the self- and peer-reported models

Table 10. Summary of the confirmatory factor analyses for self- and peer-reported equity orientation for Study 2.

Model	Self-reported							
	χ^2	χ^2 df	$\Delta\chi^2$	$\Delta\chi^2$ df	RMSEA	SRMR	CFI	TLI
Unidimensional	1248.45	54	-	-	.19	.16	.48	.36
Bidimensional	381.59	53	866.89	-1	.10	.07	.86	.82
Bidimensional-orthogonal	396.11	54	-14.53	+1	.10	.09	.85	.82
Model	Peer-reported							
	χ^2	χ^2 df	$\Delta\chi^2$	$\Delta\chi^2$ df	RMSEA	SRMR	CFI	TLI
Unidimensional	1614.68	54	-	-	.23	.19	.54	.43
Bidimensional	461.12	53	1153.55	-1	.12	.06	.88	.85
Bidimensional-orthogonal	476.71	54	-15.59	+1	.12	.09	.87	.85
Model	Self-reported – modified							
	χ^2	χ^2 df	$\Delta\chi^2$	$\Delta\chi^2$ df	RMSEA	SRMR	CFI	TLI
Unidimensional	667.43	50	-	-	.14	.15	.73	.64
Bidimensional	224.87	49	442.55	-1	.08	.06	.92	.90
Bidimensional-orthogonal	238.28	50	-13.40	+1	.08	.08	.92	.89
Model	Peer-reported – modified							
	χ^2	χ^2 df	$\Delta\chi^2$	$\Delta\chi^2$ df	RMSEA	SRMR	CFI	TLI
Unidimensional	1345.34	50	-	-	.22	.18	.62	.49
Bidimensional	232.09	49	1113.25	-1	.08	.05	.95	.93
Bidimensional-orthogonal	249.19	50	-17.10	+1	.09	.08	.94	.92

RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; CFI, comparative fit index; TLI, Tucker-Lewis index.

were examined and the residual variances amongst three input orientation items were allowed to correlate; as well, the residual variances between two outcome orientation variables were allowed to correlate. The unidimensional, bidimensional-correlated and bidimensional-orthogonal models were rerun with these modifications (see Table 10). The modifications improved model fit across all models; however, model fit – based on the delta chi-square value – was the best for the bidimensional-correlated model with both the self-reported (CFI = .92, TLI = .90, RMSEA = .08, SRMR = .06) and the peer-reported (CFI = .95, TLI = .93, RMSEA = .08, SRMR = .05) models demonstrating adequate model fit (Williams, Vandenberg & Edwards, 2009).

Correlational analyses. The means, standard deviations, intercorrelations and Cronbach's alphas for self- and peer-reports of equity orientation and the HEXACO traits are reported in Table 11. Self-reported input orientation was negatively related to self-reported ($r = -.18, p < .001$), but unrelated to peer-reported ($r = -.01, ns$), outcome orientation. Peer-reported input orientation was unrelated to self-reported ($r = -.05, ns$), but negatively related to peer-reported ($r = -.10, p < .05$), outcome orientation. Further, self- and peer-reported input orientation ($r = .22, p < .001$) and self- and peer-reported outcome orientation ($r = .12, p < .01$) were positively related.

In regards to the HEXACO traits, self-reported input orientation was positively related to self-reported Honesty-Humility ($r = .11, p < .01$), self- and peer-reported Extraversion ($r = .31, p < .001$; $r = .13, p < .01$), self-reported Agreeableness ($r = .17, p < .001$), self- and peer-reported Conscientiousness ($r = .29, p < .001$; $r = .25, p < .001$, respectively) and self-reported Openness to experience ($r = .15, p < .001$), whereas self-reported Emotionality was negatively related ($r = -.09, p < .05$). Peer-reported input

Table 11. Variable means, standard deviations, intercorrelations and Cronbach's alphas for self- and peer-ratings of both equity orientation and the HEXACO traits in Study 2.

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. INs	5.60	0.56	.80 ^a															
2. OUTs	4.53	1.05	-.18	.82 ^a														
3. INp	5.53	0.95	.22	-.05	.89 ^a													
4. OUTp	4.74	1.29	-.01	.12	-.10	.83 ^a												
5. Hs	3.43	0.63	.11	-.37	.18	-.11	.38 ^a											
6. Es	3.03	0.72	-.09	.11	.03	-.03	.09	.48 ^a										
7. Xs	3.81	0.59	.31	-.07	.07	.11	-.08	-.21	.49 ^a									
8. As	3.03	0.61	.17	-.27	.09	-.09	.18	-.04	.05	.42 ^a								
9. Cs	3.43	0.66	.29	-.07	.13	.01	.15	-.13	.08	.09	.57 ^a							
10. Os	3.64	0.59	.15	-.17	.01	-.03	.01	-.07	.10	.11	.09	.39 ^a						
11. Hp	3.54	0.69	.08	-.21	.40	-.38	.32	.12	-.12	.18	.08	.06	.54 ^a					
12. Ep	2.88	0.69	.05	.00	-.06	.08	.06	.46	-.13	.09	.02	.04	.08	.50 ^a				
13. Xp	3.83	0.66	.13	-.06	.25	.03	-.05	-.10	.34	.02	-.05	-.01	-.03	-.15	.55 ^a			
14. Ap	3.12	0.73	.07	-.17	.30	-.18	.11	-.03	.00	.28	-.04	.13	.33	-.11	.07	.57 ^a		
15. Cp	3.51	0.76	.25	-.02	.41	-.06	.17	.07	-.04	.02	.38	.07	.32	.06	-.06	.07	.67 ^a	
16. Op	3.41	0.62	.01	-.06	.31	.07	.01	-.04	.01	.03	.01	.35	.16	-.01	.13	.18	.14	.39 ^a

Note. M, mean; SD, standard deviation; IN, input orientation; OUT, outcome orientation; H, Honesty-Humility; E, Emotionality; X, Extraversion; A, Agreeableness; C, Conscientiousness; O, Openness to Experience; s, self-report; p, peer-report. r greater than: .14, $p < .001$; .10, $p < .01$; .08, $p < .05$. ^a Cronbach's alpha.

orientation was positively related to self- and peer-reported Honesty-Humility ($r = .18, p < .001$; $r = .40, p < .001$, respectively), peer-reported Extraversion ($r = .25, p < .001$), self- and peer-reported Agreeableness ($r = .09, p < .05$; $r = .30, p < .001$, respectively), self- and peer-reported Conscientiousness ($r = .13, p < .01$; $r = .41, p < .001$, respectively) and peer-reported Openness to experience ($r = .31, p < .001$), with all other bivariate relations with self- and peer-reported input orientation being non-significant. These results provide support for Hypotheses 1, 3a and 4a. Additionally, self-reported outcome orientation was negatively related to self- and peer-reported Honesty-Humility ($r = -.37, p < .001$; $r = -.21, p < .001$, respectively), self- and peer-reported Agreeableness ($r = -.27, p < .001$; $r = -.17, p < .001$, respectively) and self-reported Openness to experience ($r = -.17, p < .001$), whereas self-reported Emotionality was positively related ($r = .11, p < .01$). Peer-reported outcome orientation was negatively related to self- and peer-reported Honesty-Humility ($r = -.11, p < .05$; $r = -.38, p < .001$, respectively), self- and peer-reported Agreeableness ($r = -.09, p < .05$; $r = -.18, p < .001$, respectively), whereas self-reported Extraversion was positively related ($r = .11, p < .01$), with all other bivariate relations with self- and peer-reported outcome orientation being non-significant. These results provide further support for Hypothesis 4b.

The means, standard deviations, intercorrelations and Cronbach's alphas for self- and peer-reports of equity orientation and the Dark Tetrad traits are reported in Table 12. Self-reported input orientation was negatively related to self- and peer-reported Machiavellianism ($r = -.10, p < .05$; $r = -.11, p < .05$, respectively), self- and peer-reported psychopathy ($r = -.20, p < .001$; $r = -.12, p < .01$, respectively) and self- and peer-reported sadism ($r = -.31, p < .001$; $r = -.11, p < .01$, respectively), whereas only

Table 12. *Variable means, standard deviations, intercorrelations and Cronbach's alphas for self- and peer-ratings of both equity orientation and the Dark Tetrad traits.*

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. INs	5.60	0.75	.80 ^a											
2. OUTs	4.53	1.05	-.18	.82 ^a										
3. INp	5.53	0.05	.22	-.05	.89 ^a									
4. OUTp	4.74	1.29	-.01	.12	-.10	.83 ^a								
5. DTMs	3.22	0.59	-.10	.52	-.13	.06	.74 ^a							
6. DTNs	3.01	0.52	.26	.21	-.05	.15	.25	.67 ^a						
7. DTPs	2.28	0.57	-.20	.27	-.18	.07	.48	.31	.71 ^a					
8. DTSs	1.73	0.51	-.31	.30	-.17	.09	.39	.18	.60	.63 ^a				
9. DTMp	2.96	0.64	-.11	.15	-.26	.45	.18	.14	.19	.20	.78 ^a			
10. DTNp	2.98	0.55	.07	.09	-.04	.32	.12	.40	.21	.12	.31	.72 ^a		
11. DTPp	2.21	0.64	-.12	.13	-.37	.27	.19	.24	.39	.25	.50	.35	.76 ^a	
12. DTSp	1.86	0.57	-.11	.09	-.44	.19	.15	.17	.29	.27	.44	.19	.63	.72 ^a

Note. M, mean; SD, standard deviation; IN, input orientation; OUT, outcome orientation; DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy; DTS, sadism. s, self-report; p, peer-report.

r greater than: .14, $p < .001$; .10, $p < .01$; .08, $p < .05$. ^aCronbach's alpha.

self-reported narcissism was positively related ($r = .26, p < .001$). Peer-reported narcissism was unrelated to self-reported input orientation, ($r = .07, ns$). Peer-reported input orientation was negatively related to self- and peer-reported Machiavellianism ($r = -.13, p < .01$; $r = -.26, p < .001$, respectively), self- and peer-reported psychopathy ($r = -.18, p < .001$; $r = -.37, p < .001$, respectively) and self- and peer-reported sadism ($r = -.17, p < .001$; $r = -.44, p < .001$, respectively), whereas self- and peer-reported narcissism were unrelated ($r = -.05, ns$; $r = -.11, ns$, respectively). These results provide further support for Hypotheses 5a, 7a and 9a. Additionally, self-reported outcome orientation was positively related to self- and peer-reported Machiavellianism ($r = .52, p < .001$; $r = .15, p < .001$, respectively), self- and peer-reported narcissism ($r = .21, p < .001$; $r = .09, p < .05$, respectively), self- and peer-reported psychopathy ($r = .27, p < .001$; $r = .13, p < .01$, respectively) and self- and peer-reported sadism ($r = .30, p < .001$; $r = .09, p < .05$, respectively). Peer-reported outcome orientation was positively related to peer-reported Machiavellianism ($r = .45, p < .001$), self- and peer-reported narcissism ($r = .15, p < .001$; $r = .32, p < .001$, respectively), peer-reported psychopathy ($r = .27, p < .001$) and self- and peer-reported sadism ($r = .09, p < .05$; $r = .19, p < .001$, respectively). These results provide further support for Hypotheses 5b, 7b and 9b.

Multiple regression analyses. The results of the multiple regression analyses for input orientation and the HEXACO traits are presented in Table 13, whereas the results for outcome orientation and the HEXACO traits are presented in Table 14. Self- and peer-reported HEXACO traits accounted for a significant amount of variance in self-reported input orientation ($R^2 = .20, p < .001$; $R^2 = .09, p < .001$, respectively) and peer-reported input orientation ($R^2 = .05, p < .001$; $R^2 = .38, p < .001$, respectively). Further,

Table 13. Summary of the multiple regression and relative weight analyses for self- and peer-ratings of input orientation and the HEXACO traits in Study 2.

Variable	INs					INp				
	β	rRW	RW%	CI _L	CI _U	β	rRW	RW%	CI _L	CI _U
Hs	.07	.01	4.47	-.00 ^a	0.03 ^a	.16***	.03	49.69	.01	.06
Es	.01	.00	1.28	-.01 ^a	.01 ^a	.05	.00	3.40	-.00 ^a	.02 ^a
Xs	.28***	.08	42.81	.05	.14	.09*	.01	11.67	-.00 ^a	.03 ^a
As	.11**	.02	9.98	.00	.05	.06	.01	10.40	-.00 ^a	.03 ^a
Cs	.24***	.07	34.91	.04	.11	.10*	.01	24.76	-.00 ^a	.04 ^a
Os	.08*	.01	6.55	-.00 ^a	.04 ^a	-.00	.00	0.08	-.01 ^a	.01 ^a
R^2	.20***					.05***				
Hp	-.01	.00	3.17	-.01 ^a	.01 ^a	.22***	.09	23.55	.04	.13
Ep	.07	.00	4.10	-.01 ^a	.02 ^a	-.04	.00	0.83	-.02 ^a	.01 ^a
Xp	.16***	.02	21.97	.00	.06	.23***	.06	14.79	.01	.09
Ap	.06	.00	3.62	-.01 ^a	.02 ^a	.17***	.05	13.01	.01	.08
Cp	.26***	.06	66.24	.03	.11	.32***	.13	33.73	.07	.18
Op	-.05	.00	0.91	-.01 ^a	.01 ^a	.17***	.05	14.09	.02	.08
R^2	.09***					.38***				

Note. Raw relative weight; RW%, relative weight percentage; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval for the significance test; IN, input orientation; H, Honesty-Humility; E, Emotionality; X, Extraversion; A, Agreeableness; C, Conscientiousness; O, Openness to Experience; s, self-report; p, peer-report.

*** $p < .001$. ** $p < .01$. * $p < .05$. ^aConfidence intervals that contain zero are considered to be non-significant.

Table 14. Summary of the multiple regression and relative weight analyses for self- and peer-ratings of outcome orientation and the HEXACO traits in Study 2.

Variable	OUTs					OUTp				
	β	rRW	RW%	CI _L	CI _U	β	rRW	RW%	CI _L	CI _U
Hs	-.35***	.12	57.30	.08	.17	-.09*	.01	30.06	-.01 ^a	.03 ^a
Es	.12**	.01	6.12	-.00 ^a	.04 ^a	-.01	.00	1.59	-.02 ^a	.01 ^a
Xs	-.05	.00	1.54	-.01 ^a	.02 ^a	.11*	.01	40.91	-.01 ^a	.04 ^a
As	-.19***	.05	23.87	.02	.09	-.08	.01	23.16	-.01 ^a	.03 ^a
Cs	.03	.00	0.59	-.01 ^a	.01 ^a	.02	.00	0.84	-.02 ^a	.00 ^a
Os	-.14***	.02	10.58	.01	.05	-.03	.00	3.42	-.02 ^a	.01 ^a
R^2	.22***					.03*				
Hp	-.19***	.04	59.01	.01	.07	-.39***	.13	79.45	.09	.19
Ep	-.00	.00	0.27	-.02 ^a	.00 ^a	.11**	.01	5.68	-.00 ^a	.03 ^a
Xp	-.06	.00	5.42	-.01 ^a	.02 ^a	.05	.00	1.15	-.00 ^a	.02 ^a
Ap	-.10*	.02	30.56	-.00 ^a	.05 ^a	-.04	.02	9.52	.00	.04
Cp	.05	.00	2.19	-.02 ^a	.01 ^a	.07	.00	2.23	-.00 ^a	.01 ^a
Op	-.01	.00	2.54	-.02 ^a	.01 ^a	-.03	.00	1.96	-.00 ^a	.02 ^a
R^2	.06***					.17***				

Note. Raw relative weight; RW%, relative weight percentage; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval for the significance test; OUT, outcome orientation; H, Honesty-Humility; E, Emotionality; X, Extraversion; A, Agreeableness; C, Conscientiousness; O, Openness to Experience; s, self-report; p, peer-report.

*** $p < .001$. ** $p < .01$. * $p < .05$. ^a Confidence intervals that contain zero are considered to be non-significant.

self- and peer-reported HEXACO traits accounted for a significant amount of variance in self-reported outcome orientation ($R^2 = .22, p < .001$; $R^2 = .06, p < .001$, respectively) and peer-reported outcome orientation ($R^2 = .03, p < .05$; $R^2 = .17, p < .001$, respectively).

In regards to input orientation, self- and peer-reported Extraversion ($\beta = .28, p < .001$; $\beta = .16, p < .001$, respectively), self-reported Agreeableness ($\beta = .11, p < .01$), self- and peer-reported Conscientiousness ($\beta = .24, p < .001$; $\beta = .26, p < .001$, respectively) and self-reported Openness to experience ($\beta = .08, p < .05$) predicted unique variance in self-reported input orientation. In addition, self- and peer-reported Honesty-Humility ($\beta = .16, p < .001$; $\beta = .22, p < .001$, respectively), self- and peer-reported Extraversion ($\beta = .09, p < .05$; $\beta = .23, p < .001$, respectively), peer-reported Agreeableness ($\beta = .17, p < .001$), self- and peer-reported Conscientiousness ($\beta = .10, p < .05$; $\beta = .32, p < .001$, respectively) and peer-reported Openness to experience ($\beta = .17, p < .001$) accounted for a significant amount of variance in peer-reported input orientation.

In regards to outcome orientation, self- and peer-reported Honesty-Humility ($\beta = -.35, p < .001$; $\beta = -.19, p < .001$, respectively), self-reported Emotionality ($\beta = .12, p < .01$), self- and peer-reported Agreeableness ($\beta = -.19, p < .001$; $\beta = -.10, p < .05$, respectively) and self-reported Openness to experience ($\beta = -.14, p < .001$) predicted unique variance in self-reported outcome orientation. Additionally, self- and peer-reported Honesty-Humility ($\beta = -.09, p < .05$; $\beta = -.39, p < .001$, respectively), peer-reported Emotionality ($\beta = .11, p < .01$) and self-reported Extraversion ($\beta = .11, p < .05$) accounted for a significant amount of variance in peer-reported outcome orientation.

The results of the multiple regression analyses for input orientation and the Dark Tetrad are presented in Table 15, whereas the results for outcome orientation and the

Table 15. Summary of the multiple regression and relative weight analyses for self- and peer-ratings of input orientation and the Dark Tetrad traits in Study 2.

Variable	INs					INp				
	β	rRW	RW%	CI _L	CI _U	β	rRW	RW%	CI _L	CI _U
DTMs	-.01	.01	3.27	-.01 ^a	.02 ^a	-.05	.01	17.94	-.02 ^a	.02 ^a
DTNs	.51***	.09	43.90	.05	.15	.02	.00	1.48	-.03 ^a	.00 ^a
DTPs	-.17**	.03	14.92	.01	.06	-.11	.02	43.68	-.01 ^a	.03 ^a
DTSs	-.43***	.08	37.92	.04	.12	-.09	.01	36.91	-.01 ^a	.03 ^a
R^2	.21***					.04***				
DTMp	-.09	.01	23.72	-.00 ^a	.03 ^a	-.07	.03	13.18	.00	.06
DTNp	.14**	.01	32.13	.00	.04	.10*	.00	1.85	-.02 ^a	.01 ^a
DTPp	-.10	.01	25.92	-.00 ^a	.03 ^a	-.16**	.07	29.88	.03	.10
DTSp	-.04	.01	18.23	-.00 ^a	.03 ^a	-.33***	.12	55.09	.07	.17
R^2	.04**					.22***				

Note. Raw relative weight; RW%, relative weight percentage; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval for the significance test; IN, input orientation; DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy; DTS, sadism; s, self-report; p, peer-report.

*** $p < .001$. ** $p < .01$. * $p < .05$. ^aConfidence intervals that contain zero are considered to be non-significant.

Dark Tetrad are presented in Table 16. Self- and peer-reported Dark Tetrad accounted for a significant amount of variance in self-reported input orientation ($R^2 = .21, p < .001$; $R^2 = .04, p < .01$, respectively) and peer-reported input orientation ($R^2 = .04, p < .001$; $R^2 = .22, p < .001$, respectively). Further, self- and peer-reported Dark Tetrad traits accounted for a significant amount of variance in self-reported outcome orientation ($R^2 = .29, p < .001$; $R^2 = .03, p < .01$, respectively) and peer-reported outcome orientation ($R^2 = .03, p < .01$; $R^2 = .24, p < .001$, respectively).

In regards to input orientation, self- and peer-reported narcissism ($\beta = .51, p < .001$; $\beta = .14, p < .01$, respectively), self-reported psychopathy ($\beta = -.17, p < .01$) and self-reported sadism ($\beta = -.43, p < .001$) predicted unique variance in self-reported input orientation. In addition, peer-reported narcissism ($\beta = .10, p < .05$), peer-reported psychopathy ($\beta = -.16, p < .01$) and peer-reported sadism ($\beta = -.33, p < .001$) accounted for a significant amount of variance in peer-reported input orientation.

In regards to outcome orientation, self- and peer-reported Machiavellianism ($\beta = -.47, p < .001$; $\beta = .11, p < .05$, respectively), self-reported narcissism ($\beta = .09, p < .05$) and self-reported sadism ($\beta = .15, p < .01$) predicted unique variance in self-reported outcome orientation. Additionally, peer-reported Machiavellianism ($\beta = .39, p < .001$), self- and peer-reported narcissism ($\beta = .14, p < .01$; $\beta = .20, p < .001$) accounted for a significant amount of variance in peer-reported outcome orientation.

Relative importance analyses. The results of the relative importance analyses are presented in Table 13 and 14 for the HEXACO model and Table 15 and 16 for the Dark Tetrad model. The analyses revealed that self- and peer-reported Extraversion (43%; 22%, respectively), self-reported Agreeableness (10%) and self- and peer-reported

Table 16. Summary of the multiple regression and relative weight analyses for self- and peer-ratings of outcome orientation and the Dark Tetrad traits in Study 2.

Variable	OUTs					OUTp				
	β	rRW	RW%	CI _L	CI _U	β	rRW	RW%	CI _L	CI _U
DTMs	.47***	.20	70.06	.14	.25	.01	.00	4.80	-.01 ^a	.01 ^a
DTNs	.09*	.02	7.41	-.00 ^a	.04 ^a	.14**	.02	69.94	.00	.05
DTPs	-.07	.02	7.88	.00	.04	-.03	.00	4.55	-.01 ^a	.01 ^a
DTSs	.15**	.04	14.65	.02	.07	.08	.01	20.71	-.00 ^a	.03 ^a
R^2	.29***					.03**				
DTMp	.11*	.01	50.71	.00	.04	.39***	.14	58.93	.09	.19
DTNp	.03	.00	11.15	-.00 ^a	.02 ^a	.20***	.06	26.52	.03	.10
DTPp	.07	.01	27.90	-.00 ^a	.03 ^a	.02	.02	9.97	.01	.05
DTSp	-.00	.00	10.24	-.00 ^a	.02 ^a	-.03	.01	4.59	.00	.02
R^2	.03**					.24***				

Note. Raw relative weight; RW%, relative weight percentage; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval for the significance test; OUT, outcome orientation; DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy; DTS, sadism; s, self-report; p, peer-report.

*** $p < .001$. ** $p < .01$. * $p < .05$. ^aConfidence intervals that contain zero are considered to be non-significant.

Conscientiousness (35%; 66%, respectively) accounted for a significant portion of the total variance in self-reported input orientation, whereas self- and peer-reported Honesty-Humility (50%; 24%, respectively), peer-reported Extraversion (15%), peer-reported Agreeableness (13%), peer-reported Conscientiousness (34%) and peer-reported Openness to experience (14%) accounted for a significant portion of the total variance in peer-reported input orientation. Further, the analyses revealed that self- and peer-reported Honesty-Humility (57%; 59%, respectively), self-reported Agreeableness (24%) and self-reported Openness to experience (11%) accounted for a significant amount of the total variance in self-reported outcome orientation, whereas peer-reported Honesty-Humility (80%) and peer-reported Agreeableness (10%) accounted for a significant portion of the total variance in peer-reported outcome orientation.

In regards to the Dark Tetrad, the analyses revealed that self- and peer-reported narcissism (44%; 32%, respectively) self-reported psychopathy (15%) and self-reported sadism (38%) accounted for a significant portion of the total variance in self-reported input orientation, whereas peer-reported Machiavellianism (13%), peer-reported psychopathy (30%) and peer-reported sadism (55%) accounted for a significant amount of the total variance in peer-reported input orientation. In addition, the analyses revealed that self- and peer-reported Machiavellianism (70%; 51%, respectively), self-reported psychopathy (8%) and self-reported sadism (15%) accounted for a significant portion of the total variance in self-reported outcome orientation, whereas peer-reported Machiavellianism (59%), self- and peer-reported narcissism (70%; 27%, respectively), peer-reported psychopathy (10%) and peer-reported sadism (5%) accounted for a significant amount of the total variance in peer-reported outcome orientation.

Latent profile analyses. The same model fit criteria used in Study 1 were implemented in Study 2. Table 17 contains the model fit indices for the one- through five-profile LPAs for both self- and peer-reported equity orientation. For self-reported equity orientation, the three-profile model had the lowest AIC, BIC and aBIC, significant VLMR, aLMR and BLRT and the highest entropy (.71) The four-profile model, in comparison, had the second lowest AIC and aBIC, the VLMR and aLMR were trending towards significance, the entropy (.64) was the second highest, and the posterior probabilities ranged from 67% to 87%. In regards to the peer-reported equity orientation, the five-profile model had the lowest AIC and aBIC, and significant VLMR, aLMR and BLRT and high entropy (.80). However, the four-profile model had the second lowest AIC, BIC, aBIC, and a significant BLRT and the same entropy (.80) as the five-profile model, and posterior probabilities ranging from 70% to 92%. Most importantly, and as stated in Study 1, the four-profile model is consistent with the proposed equity orientation theory, which is important to consider when making decisions about the appropriate number of profiles (Marsh et al., 2009; Muthén, 2003). In addition, the goal is to use self- and peer-reported equity orientation to make comparisons between the profiles, so it is therefore important to keep the number of profiles consistent across the two rating sources. As a result, the four-profile models, for both self- and peer-reported equity orientation, were retained. The patterns of input and outcome orientation for the self- and peer-reported four-profile models are presented in Figure 3 and 4, respectively. The proposed equity orientation profiles of equity altruistic, equity enthusiastic, equity egoistic and equity apathetic were replicated in both the self- and peer-reported four-profile models, providing further support for Hypothesis 8.

Table 17. Summary of the latent profile analysis model-fit indices for self- and peer-reported equity orientation in Study 2.

	Log-likelihood	AIC	BIC	aBIC	<i>p</i> VLMR	<i>p</i> aLMR	<i>p</i> BLRT	Entropy
Self-reported								
1-profile	-1556.52	3121.04	3138.63	3125.93	-	-	-	-
2-profile	-1535.70	3085.39	3116.17	3093.95	.00	.00	.00	.62
3-profile	-1521.44	3062.88	3106.85	3075.11	.04	.04	.00	.71
4-profile	-1519.15	3064.30	3121.46	3080.19	.07	.08	.49	.64
5-profile	-1516.89	3065.79	3136.14	3085.34	.39	.41	.45	.63
Peer-reported								
1-profile	-1672.41	3352.82	3370.07	3357.37	-	-	-	-
2-profile	-1631.32	3276.64	3306.83	3284.61	.00	.00	.00	.78
3-profile	-1598.37	3216.73	3259.85	3228.11	.00	.00	.00	.77
4-profile	-1588.91	3203.82	3259.87	3218.60	.20	.21	.00	.80
5-profile	-1581.20	3194.40	3263.39	3212.60	.02	.02	.00	.80

Note. AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria; aBIC, sample-sized adjusted BIC; *p* VLMR, *p*-value for the Vuong-Lo-Mendell-Rubin likelihood ratio test; *p* aLMR, *p*-value for the Lo-Mendell-Rubin adjusted likelihood ratio test; *p* BLRT, *p*-value for the bootstrapped likelihood ratio test.

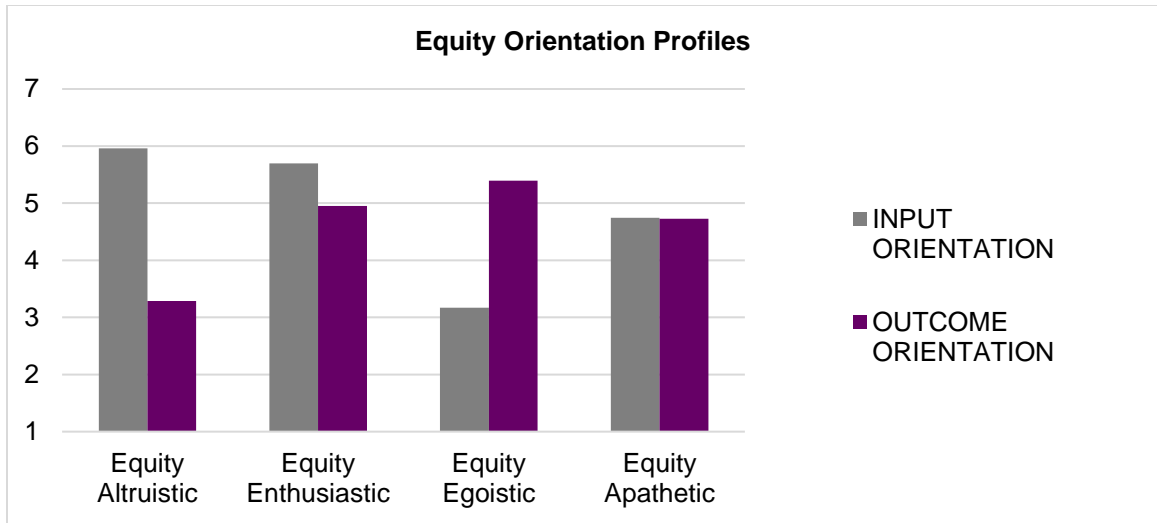


Figure 3. Self-reported equity orientation profiles in Study 2.

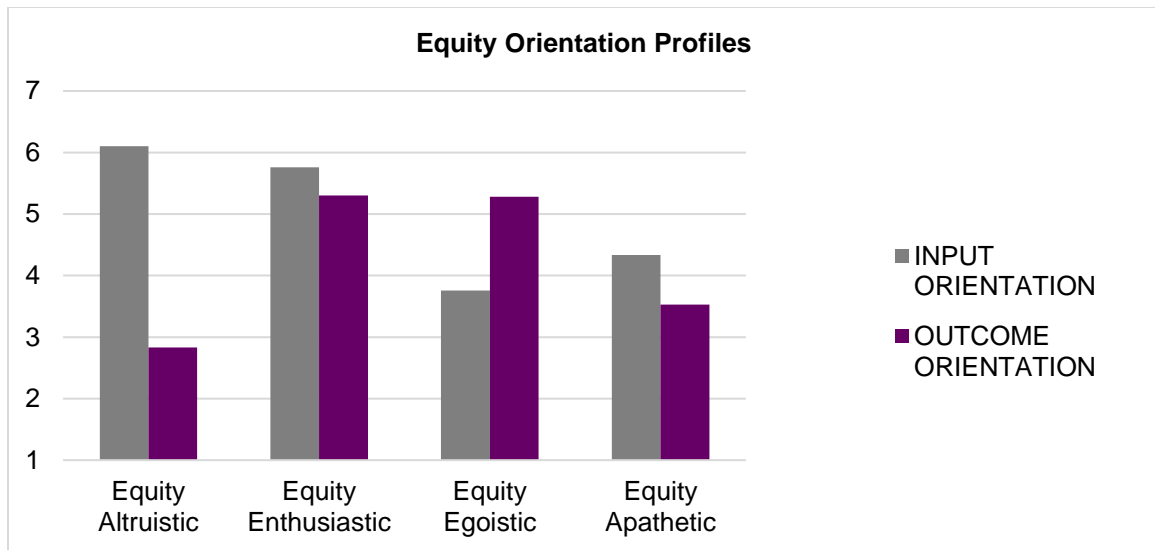


Figure 4. Peer-reported equity orientation profiles in Study 2.

HEXACO. A Wald chi-square test of equality of means was conducted to examine mean differences in the HEXACO traits across the four profiles for self- and peer-reported equity orientation. For self-reported equity orientation, differences in means across self- and peer-reported HEXACO traits are presented in Table 18. The four self-reported equity orientation profiles differed significantly on self- and peer-reported Honesty-Humility, self-reported Extraversion, self- and peer-reported Agreeableness, self- and peer-reported Conscientiousness and self-reported Openness to experience; however, the four profiles did not differ significantly on either self- or peer-reported Emotionality. More specifically, self-reported equity altruistics were the highest on self- and peer-reported Honesty-Humility, one of the two highest on self-reported Extraversion, the highest on self- and peer-reported Agreeableness, one of the highest on self- and peer-reported Conscientiousness, and one of the highest on self-reported Openness to experience. Self-reported equity enthusiasts were also one of the highest on self-reported Extraversion, and one of the highest on self- and peer-reported Conscientiousness. Self-reported equity egoistics were the one of the lowest on self-reported Extraversion, one of the lowest on self-reported Agreeableness, and one of the lowest on self-reported Conscientiousness. Finally, self-reported equity apathetics were one of the lowest on self- and peer-reported Honesty-Humility, one of the lowest on self-reported Extraversion, one of the lowest on self- and peer-reported Agreeableness, one of the lowest on self- and peer-reported Conscientiousness, one of the lowest on self-reported Openness to experience.

For peer-reported equity orientation, differences in means across self- and peer-reported HEXACO traits are presented in Table 19. The four peer-reported equity

Table 18. Summary of the Wald Chi-Square Test of Mean Equality for the HEXACO traits across self-reported equity orientation profiles in Study 2.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
Hs	3.87 _a	3.35 _b	3.43 _{a,b}	3.02 _b	64.04***
Es	2.83 _a	3.10 _b	3.38 _{a,b}	3.00 _{a,b}	7.24
Xs	3.87 _a	3.91 _a	3.00 _b	3.30 _b	24.72***
As	3.38 _a	2.92 _b	2.63 _b	2.92 _b	32.10***
Cs	3.62 _a	3.47 _a	2.67 _b	2.97 _b	27.18***
Os	3.86 _a	3.59 _b	3.26 _a	3.52 _b	15.67**
Hp	3.90 _a	3.48 _b	3.39 _{a,b}	3.19 _b	24.70***
Ep	2.87 _a	2.90 _a	2.70 _a	2.84 _a	0.39
Xp	3.94 _a	3.84 _a	3.25 _a	3.65 _a	4.87
Ap	3.38 _a	3.11 _b	2.94 _a	2.71 _b	15.58**
Cp	3.64 _a	3.58 _a	3.02 _{a,b}	2.80 _b	14.50**
Op	3.50 _a	3.39 _a	3.66 _a	3.33 _a	3.90

Note. H, Honesty-Humility; E, Emotionality; X, Extraversion; A, Agreeableness; C, Conscientiousness; O, Openness to Experience; s, self-report; p, peer-report.

Unshared subscripts indicate means that are significantly different by row.

*** $p < .001$. ** $p < .01$.

Table 19. Summary of the Wald Chi-Square Test of Mean Equality for the HEXACO traits across peer-reported equity orientation profiles in Study 2.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
Hs	3.58 _a	3.44 _a	3.18 _b	3.21 _{a,b}	12.01**
Es	3.01 _a	3.01 _a	3.04 _a	3.06 _a	0.13
Xs	3.75 _a	3.88 _a	3.81 _a	3.56 _a	4.82
As	3.17 _a	3.02 _{a,b}	2.91 _b	2.94 _{a,b}	5.33
Cs	3.50 _a	3.47 _a	3.16 _b	3.26 _{a,b}	8.04*
Os	3.72 _a	3.62 _a	3.71 _a	3.66 _a	1.59
Hp	4.06 _a	3.50 _b	2.79 _c	3.62 _b	85.29***
Ep	2.70 _a	2.90 _b	3.03 _b	3.01 _{a,b}	7.13
Xp	3.87 _a	3.90 _a	3.55 _b	3.50 _b	13.64**
Ap	3.49 _a	3.11 _b	2.79 _c	2.65 _c	33.07***
Cp	3.70 _a	3.61 _a	2.66 _b	3.36 _a	38.62***
Op	3.56 _a	3.46 _{a,c}	3.05 _b	3.13 _{b,c}	22.01***

Note. H, Honesty-Humility; E, Emotionality; X, Extraversion; A, Agreeableness; C, Conscientiousness; O, Openness to Experience; s, self-report; p, peer-report.

Unshared subscripts indicate means that are significantly different by row.

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

orientation profiles differed significantly on self- and peer-reported Honesty-Humility, peer-reported Extraversion, peer-reported Agreeableness, self- and peer-reported Conscientiousness and peer-reported Openness to experience; however, the four profiles did not differ significantly on either self- or peer-reported Emotionality. More specifically, peer-reported equity altruistics were one of the highest on self- and peer-reported Honesty-Humility, one of the lowest on peer-reported Emotionality, one of the highest on self-reported Agreeableness and the highest on peer-reported Agreeableness, one of the highest on self- and peer-reported Conscientiousness, and one of the highest on peer-reported Openness to experience. Peer-reported equity enthusiasts were also one of the highest on self-reported Honesty-Humility, one of the highest on self-reported Extraversion, one of the highest on self- and peer-reported Conscientiousness, and one of the highest on peer-reported Openness to experience. Peer-reported equity egoistics were the one of the lowest on self-reported Honesty-Humility and the lowest on peer-reported Honesty-Humility, one of the highest on peer-reported Extraversion, the second highest on peer-reported Agreeableness, one of the highest on self- and peer-reported Conscientiousness, and one of the highest on Openness to experience. Finally, self-reported equity apathetics were one of the lowest on self-reported Honesty-Humility and the lowest on peer-reported Honesty-Humility, one of the lowest on peer-reported Extraversion, one of the lowest on peer-reported Agreeableness, one the lowest on self-reported Conscientiousness and the lowest on peer-reported Conscientiousness, and the lowest on peer-reported Openness to experience.

Dark Tetrad. A Wald chi-square test of equality of means was also conducted to examine mean differences in the Dark Tetrad traits across the four profiles for self- and

peer-reported equity orientation. For self-reported equity orientation, differences in means across self- and peer-reported Dark Tetrad traits are presented in Table 20. The four self-reported equity orientation profiles differed significantly on self- and peer-reported Machiavellianism, self-reported narcissism, self- and peer-reported psychopathy, and self- and peer-reported sadism. More specifically, self-reported equity altruistics were the lowest on self-reported Machiavellianism and one of the lowest on peer-reported Machiavellianism, one of the lowest on self- and peer-reported psychopathy, and one of the lowest on self- and peer-reported sadism. Self-reported equity enthusiasts were one of the highest on self- and peer-reported Machiavellianism, and the highest on self-reported Narcissism. Self-reported equity egoistics were the one of the highest on self-reported Machiavellianism. Finally, self-reported equity apathetics were one of the highest on self- and peer-reported Machiavellianism, one of the highest on self- and peer-reported psychopathy, and the highest on self- and peer-reported sadism.

For peer-reported equity orientation, differences in means across self- and peer-reported Dark Tetrad traits are presented in Table 21. The four peer-reported equity orientation profiles differed significantly on peer-reported Machiavellianism, peer-reported narcissism, self- and peer-reported psychopathy, and self- and peer-reported sadism; however, the four profiles did not differ significantly on either self-reported Machiavellianism or self-reported narcissism. More specifically, peer-reported equity altruistics were the lowest on peer-reported Machiavellianism, one of the lowest on peer-reported narcissism, the lowest on peer-reported psychopathy, and one of the lowest on self-reported sadism and the lowest on peer-reported sadism. Peer-reported equity enthusiasts were the second highest on peer-reported Machiavellianism, the second

Table 20. Summary of the Wald Chi-Square Test of Mean Equality for the Dark Triad traits across self-reported equity orientation profiles in Study 2.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
DTMs	2.66 _a	3.37 _b	3.28 _b	3.53 _b	96.99***
DTNs	2.84 _a	3.14 _b	2.44 _a	2.78 _a	20.93***
DTPs	1.94 _a	2.28 _b	2.21 _{a,b}	2.89 _c	44.73***
DTSs	1.35 _a	1.73 _b	1.67 _{a,b}	2.40 _c	87.35***
DTMp	2.64 _a	3.02 _b	3.10 _a	3.21 _b	22.94***
DTNp	2.92 _a	3.02 _a	2.77 _a	2.83 _a	3.43
DTPp	1.88 _a	2.28 _{b,c}	2.00 _{a,b}	2.63 _c	29.12***
DTSp	1.67 _a	1.86 _b	1.55 _{a,b}	2.30 _c	16.46**

Note. DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy; DTS, sadism; s, self-report; p, peer-report.

Unshared subscripts indicate means that are significantly different by row.

*** $p < .001$. ** $p < .01$.

Table 21. *Summary of the Wald Chi-Square Test of Mean Equality for the Dark Triad traits across peer-reported equity orientation profiles in Study 2.*

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
DTMs	3.13 _a	3.22 _a	3.38 _a	3.16 _a	3.85
DTNs	2.86 _a	3.06 _b	3.01 _{a,b}	3.06 _{a,b}	7.40
DTPs	2.14 _a	2.25 _{a,b}	2.50 _b	2.40 _{a,b}	9.26*
DTSS	1.57 _a	1.71 _b	1.90 _b	1.75 _{a,b}	11.57**
DTMp	2.40 _a	3.05 _b	3.56 _c	2.76 _d	92.74***
DTNp	2.68 _a	3.05 _b	3.23 _b	2.65 _a	42.78***
DTPp	1.75 _a	2.24 _b	2.72 _c	2.44 _{b,c}	63.10***
DTSp	1.55 _a	1.83 _b	2.36 _c	2.24 _c	63.10***

Note. DTM, Machiavellianism; DTN, narcissism; DTP, psychopathy; DTS, sadism; s, self-report; p, peer-report.

Unshared subscripts indicate means that are significantly different by row.

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

highest on peer-reported narcissism, and the second lowest on peer-reported sadism.

Peer-reported equity egoistics were the highest on peer-reported Machiavellianism, one of the highest on peer-reported narcissism, one of the highest on peer-reported psychopathy, and one of the highest on peer-reported sadism. Finally, self-reported equity apathetics were the second lowest on peer-reported Machiavellianism, the second lowest on peer-reported narcissism, and one of the highest on peer-reported sadism.

Study 2 Discussion

Study 2 was designed to replicate and expand on the results from Study 1 by investigating the measurement model for the Equity Orientation Scale (EOS), utilizing the full HEXACO model, the recently developed Dark Tetrad model (i.e., the inclusion of sadism with the Dark Triad), and incorporating both self- and peer-reports of personality. First, confirmatory factor analyses were conducted separately on the self- and peer-reported EOS responses. Support was found for the bidimensional structure of the two equity orientation dimensions: input and outcome orientation. The bidimensional model that best fit the data was the correlated model, however, rather than the orthogonal model, suggesting that the two dimensions might have a weak and negative relation to each other. In addition, it was found that some of the items had residuals that were correlated, requiring the models to be modified to improve fit.

Variable-centred analyses. The results of Study 2 demonstrated further support for the hypotheses regarding the broad (i.e., HEXACO) and anti-social (i.e., Dark Tetrad) personality traits with the equity orientation dimensions (i.e., input and outcome orientation). These results were also replicated across self- and peer-reported data, resulting in four comparisons for each hypothesis (i.e., self-reported equity orientation

with self- and peer-reported HEXACO and peer-reported equity orientation with self- and peer-reported HEXACO). Conscientiousness was positively related to input orientation and unrelated to outcome orientation across all four comparisons, providing further support for Hypotheses 1. Agreeableness was positively related to input orientation in three of the four comparisons and negatively related to outcome orientation in all four comparisons, providing further support for Hypothesis 2. Emotionality – the HEXACO model’s version of Neuroticism – was unrelated to input orientation in three comparisons and unrelated to outcome orientation in two comparisons with weak, positive correlations in the other two comparisons. Openness to experience was positively related to input orientation in two of the four comparisons and negatively related to outcome orientation in one of the four comparisons. Extraversion was positively related to input orientation in three of the four comparisons and positively related to outcome orientation in one of the four comparisons, providing further support for Hypothesis 3a. Finally, Honesty-Humility was positively related to input orientation and negatively related to outcome orientation in all four comparisons, providing further support for Hypotheses 4a and 4b. For all comparisons between the self- and peer-reported HEXACO and self- and peer-reported equity orientation dimensions, the results were generally supported with both multiple regression and relative importance analyses, providing support for each of the discussed comparisons.

For the Dark Tetrad traits, Machiavellianism was negatively related to input orientation in all four comparisons and positively related to outcome orientation in three of the four comparisons, providing further support for Hypotheses 5a and 5b. The input orientation results, however, were not supported by either the multiple regression or the

relative important analyses, whereas the outcome orientation results were, suggesting that Machiavellianism is not a key contributor to the understanding of input orientation when compared to the three other anti-social personality traits (i.e., narcissism, psychopathy and sadism). Narcissism was positively related to input orientation in one of the four comparisons (unrelated in all the other comparisons) and positively related to outcome orientation in all four comparisons, providing support for Hypotheses 6b, but not 6a. Narcissism did predict unique variance in three of the four regression models for both input and outcome orientation; however, narcissism only accounted for a significant portion of the variance in the regression models for self-reported input orientation and peer-reported outcome orientation. Psychopathy was negatively related to input orientation in all four comparisons and positively related to outcome orientation in three of the four comparisons, providing further support for Hypotheses 7a and 7b. These results were generally corroborated with multiple regression and relative importance analyses that included the same rater source for both the independent and dependent variable (e.g., self-reported input orientation with self-reported psychopathy and peer-reported outcome orientation with peer-reported psychopathy). Sadism was negatively related to input orientation and positively related to outcome orientation in all four comparisons, providing support for Hypotheses 9a and 9b. Similar to psychopathy, the results were generally corroborated with multiple regression and relative importance analyses for input orientation that included the same rater source. For outcome orientation, however, the results were only supported for the multiple regression analysis with self-reported sadism and self-reported outcome orientation, whereas the relative importance analyses were significant for the analyses that included the same rater source.

Person-centred analysis. The person-centred analysis found further support for Hypothesis 8, which proposed that there would be four equity orientation profiles: equity altruistic, equity enthusiastic, equity egoistic and equity apathetic. In addition, the profiles in Study 2 (see Figures 3 and 4) were visually similar in structure to the profiles in Study 1 (see Figure 2). As in Study 1, I found that the profiles differed significantly on many of the personality traits examined. In regards to the HEXACO traits, equity altruistics were found to be high on Conscientiousness, Agreeableness and Honesty-Humility in all four comparisons, high on Extraversion in two of the four comparisons, and low on Emotionality in two of the four comparisons. Equity enthusiasts were also high on Conscientiousness in four of the four comparisons and high on Extraversion in two of four comparisons. Equity egoistics were low on Conscientiousness in four of four comparisons and were low on Extraversion and Honesty-Humility in two of four comparisons. In addition, equity egoistics were relatively high on Emotionality in two of four comparisons. Equity apathetics were low on Conscientiousness, Agreeableness and Honesty-Humility in three of the four comparisons and low on Extraversion and Openness to experience in two of the four comparisons.

In regards to the Dark Tetrad traits, equity altruistics were low on Machiavellianism and narcissism in three of the four comparisons and low on psychopathy and sadism in all four comparisons. Equity enthusiasts were high on Machiavellianism in two of four comparisons and high on narcissism in three of the four comparisons. Equity egoistics were high on Machiavellianism in two of the four comparisons and rated themselves low on narcissism whereas peers rated equity egoistics as high on narcissism, psychopathy and sadism. Equity apathetics were high on both

psychopathy and sadism in three of the four comparisons. These results further our understanding of the personality traits underlying the four equity orientation profiles.

Chapter 2 Discussion

The goals of the first two studies were to: (1) validate a new measure of individual differences in perceptions of equity (i.e., the Equity Orientation Scale [EOS]), (2) develop input and outcome orientations' nomological networks and (3) investigate the potential equity orientation profiles and examine their relations with particular personality traits.

With respect to the first goal, I developed a 12-item measure of equity orientation that consists of six positively worded items to measure input orientation, and four positively worded and two negatively worded items to measure outcome orientation. Exploratory structural equation modeling (Study 1) and confirmatory factor analysis (Study 2) confirmed the expected factor structure and provided further evidence for the bidimensional approach to measuring individual differences in perceptions of equity. The EOS, however, was designed such that the input and outcome orientation dimensions would be unrelated to each other (i.e., orthogonal). This was not supported with confirmatory factor analysis in Study 2. Instead, the two dimensions had a weak and negative correlation between them for both self- and peer-reports; this parallels the pattern observed in the self-report data that was examined in Study 1.

With respect to the second goal, I examined the relations among the equity orientation dimensions and both the broad personality traits that make up the HEXACO personality model and the anti-social personality traits that make up the Dark Tetrad model (note: sadism was only investigated in Study 2). It was hypothesized that

Conscientiousness, Extraversion and Honesty-Humility would be positively related to input orientation. Correlational, multiple regression and relative importance analyses across both studies demonstrated robust support for these hypothesized positive relations. These results suggest that input oriented individuals are more likely to be achievement oriented, which seems feasible because, in order to be successful, individuals often have to put forth a considerable amount of effort. Further, input oriented individuals are more honest, which is consistent with the idiom, “an honest day’s work,” meaning that putting forth effort and working hard is the honest thing to do. Even further, input oriented individuals are more sociable and enjoy interacting with others. This makes sense when one considers that, if one was trying to contribute, being social in a *social* exchange would be beneficial. Interestingly, Agreeableness and Openness to experience were generally found to be positively related to input orientation. Moreover, multiple regression and relative importance analyses found mixed results, with some significant and small relations in some analyses and non-significant relations in others. Clearly, further research is required to investigate these relations and examine the consistency of these findings. It is worth mentioning that the only times in which significant results were found were when the rating source was the same for both variables (i.e., both variables were either self-reported or peer-reported). This suggests that these results could be attributed to a rater effect, a possibility that also deserves further investigation.

In regards to the Dark Tetrad traits, input orientation was hypothesized as being negatively related to Machiavellianism, psychopathy and sadism; input orientation was also hypothesized, however, as being positively related to narcissism. These hypotheses were supported across both studies, with Machiavellianism, psychopathy and sadism

being negatively correlated with input orientation in all comparisons in which they were included. Results of the multiple regression and relative importance analyses, however, demonstrated that only psychopathy and sadism predicted unique variance and accounted for a significant portion of the variance in the regression models, whereas Machiavellianism did not. This suggests that the negative correlation between Machiavellianism and input orientation may be attributed to the shared variance among the Dark Tetrad traits (Paulhus & Williams, 2002), indicating that the more robust relations with input orientation are psychopathy and sadism. Thus, input oriented individuals' tend to be more empathetic and are disinterested in harming others. Narcissism, on the other hand, was hypothesized to be positively related to input orientation because of the narcissistic mentality of grandiosity. Interestingly, the only comparisons where narcissism was related to input orientation was with self-reported input orientation and self-reported narcissism, any comparison that included peer-reported input orientation and/or peer-reported narcissism found non-significant correlations. Although these latter results provide some support for the proposed theory, it also suggests that narcissists incorrectly perceive themselves as input oriented, whereas their peers do not see them as input oriented. This finding could be attributed to self-deception among narcissists – a form of socially desirable responding (Paulhus, 1984) – and therefore provides evidence for the value of peer-reported equity orientation over the potentially biased responding that may occur with self-reported equity orientation.

For outcome orientation, it was hypothesized that it would be negatively related to Agreeableness and Honesty-Humility, and positively related to Extraversion. Generally, the results supported the negative relation between both Agreeableness and Honesty-

Humility with outcome orientation. These results were corroborated with multiple regression and relative importance analyses across both studies, providing support for the robustness of these negative relations. These findings suggest that outcome oriented individuals are less likely to agree with others, which is understandable when one considers that others may interfere with an outcome-oriented individuals' ability to attain rewards. Further, these results suggest that outcome-oriented individuals are greedy and insincere. This finding should not be surprising because outcome-oriented individuals care about getting outcomes (i.e., greed) and may care less about how they get them (i.e., insincere). Extraversion, however, was generally uncorrelated with outcome orientation, providing no support for its hypothesis. Therefore, the proposed relation between Extraversion and outcomes may be attributed to another factor other than a desire for outcomes. For example, extraverts are considered to be better at self-promotion (Kristof-Brown, Barrick & Franke, 2002) and achieve greater career success because their social skills lead to increased visibility in the workplace (Seibert & Kraimer, 2001). Their increased outcomes, therefore, may not be the result of having a desire for outcomes; rather, outcomes may be a distal consequence that results from the social skills associated with Extraversion.

In regards to the Dark Tetrad traits, outcome orientation was hypothesized as being positively related to all four traits (i.e., Machiavellianism, narcissism, psychopathy and sadism). Generally, all four traits were found to positively relate to outcome orientation. Nevertheless, only the relations for Machiavellianism and narcissism were corroborated across multiple regression and relative importance analyses in both studies. These results suggest that the most robust findings for outcome orientation were observed

with Machiavellianism and narcissism, whereas psychopathy and sadism – in a similar fashion to the relation between Machiavellianism and input orientation – may be attributed to the shared variance between the Dark Tetrad traits. These results suggest that outcome-oriented individuals are likely to manipulate others to try and maximize their outcomes and/or may also feel that they are entitled to any and all outcomes.

In regards to the two personality models as a whole, neither the HEXACO model nor the Dark Tetrad accounted for all of the variance in either input or outcome orientation. At best, the HEXACO model accounted for 38% of the variance in input orientation and 22% of the variance in outcome orientation. Further, the Dark Triad/Tetrad model, at best, accounted for 22% of the variance in input orientation and 29% of the variance in outcome orientation. Overall, the HEXACO personality traits were a better predictor of input orientation, whereas the Dark Triad/Tetrad traits were better predictors of outcome orientation. Nonetheless, neither the HEXACO model nor the Dark Tetrad model accounted for all the variance in either input orientation or outcome orientation. This finding indicates that equity orientation and its two dimensions are unique traits that add to our understanding of individuals' personality, especially in the context of social exchanges.

With respect to the third and final purpose of this research, I examined whether the four proposed equity orientation profiles (equity altruistic, equity enthusiastic, equity egoistic, and equity apathetic) emerged using both self- and peer-reported data. Figures 2, 3 and 4 display the four profiles (based on mean scores) found in Studies 1 and 2 and across rater sources. Visually, these profiles appear vary similar in structure. However, for the peer-reported profiles, profile membership was more evenly distributed than in the

two self-reported datasets. More specifically, there was an increased number of individuals who were identified as being members of the equity egoistic profile in the peer-reported data. This result may also be attributed to socially desirable responding in self-reported data (Zerbe & Paulhus, 1987). Nonetheless, examinations with the HEXACO and Dark Tetrad models of personality did find consistent results across both self- and peer-reported data.

In regards to the HEXACO model, it was found that the four profiles differed significantly on Conscientiousness, Agreeableness and Honesty-Humility in all of the comparisons. More specifically, equity altruistics were high on Conscientiousness, Agreeableness and Honesty-Humility, suggesting that individuals in this profile are understandably more persistent, more agreeable with others and more fair/sincere. Equity enthusiasts were also high on Conscientiousness, but were neither consistently high nor low on either Agreeableness or Honesty-Humility, suggesting that individuals in this profile are generally more achievement oriented and persistent. Equity egoistics were generally low on Conscientiousness, Agreeableness and Honesty-Humility in three of the five comparisons, suggesting that individuals in this profile are less hard working, less agreeable with others and more likely to be dishonest. Equity apathetics were generally found to be low on Agreeableness, however, were generally found to fall near the mean on the other traits, suggesting that equity apathetics tend to be less agreeable with others.

In regards to the Dark Tetrad, it was found that the four profiles generally differed on psychopathy, sadism, Machiavellianism and narcissism. Drawing attention to each unique profile, equity altruistics were generally low on Machiavellianism, sadism, psychopathy and narcissism, suggesting that equity altruistics are generally less

manipulative, do not like harming others, are more empathetic, and do not think overly highly of themselves. Equity enthusiasts, surprisingly, were generally high on Machiavellianism and narcissism, suggesting that their high sensitivity to fairness might have a dark component of being manipulative and entitled. Equity egoists were generally high on psychopathy, suggesting they care less about others. For narcissism and sadism, however, an interesting pattern within self- and peer-reported equity egoists emerged. Equity egoists rated *themselves* as low on narcissism and sadism, whereas their *peers* rated equity egoists as high on narcissism and sadism. These results suggest the value of the peer-reported equity orientation; potentially, the use of such measures identify behaviours that are unnoticed with self-reported data. Equity apathetics were generally low on narcissism, high on sadism, and were either second highest or highest on psychopathy, suggesting that they lack care and concern for others and that their apathy might have a darker undertone. Further, equity apathetics rated themselves as being higher on Machiavellianism, whereas their peers rated them as being somewhat lower on Machiavellianism. This result is intriguing because it suggests that equity apathetics consider themselves to be manipulative, but their peers are not observing this tendency or behaviour.

It is worth noting a couple puzzling aspects of the findings from these two studies. First, the relations between self- and peer-reports of the personality traits (e.g., self- and peer-reported Conscientiousness or self- and peer-reported input orientation) ranged from small to medium in size; thus, evidence of convergent validity is modest and variable. For most of the traits, these intercorrelations were smaller than what has been found with other personality traits (Connolly, Kavanagh & Viswesvaran, 2007; Holtzman, 2011).

This was especially apparent with the equity orientation dimensions. Self- and peer-reported input orientation and self- and peer-reported outcome orientation both had small, positive correlations. This lack of convergence between self- and peer-reports could be attributed to participants perceiving themselves in a more favourable light (i.e., self-deception; Paulhus, 1984; Zerbe & Paulhus, 1987), which would also explain why peer-reports resulted in an increase in membership for the least socially desirable profile (i.e., equity egoistics). On the other hand, the lack of convergence could be attributed to peers not being able to assess the desires of another individual, making it challenging for peers to accurately rate each other.

A second limitation is the low Cronbach's alphas for the HEXACO traits as measured with the Brief HEXACO Inventory (BHI). The observed alphas ranged from .38 to .67, suggesting that all of the BHI scales had poor reliability. However, these low alphas are similar to what de Vries (2013) found when developing the BHI. In addition, de Vries (2013) found that the BHI scales still had strong correlations with the HEXACO-PI-R, arguing that the low alphas did not negatively affect the validity a scale (McCrae, Kurtz, Yamagata & Terracciano, 2011; Sijtsma, 2009). Nevertheless, these low alphas also suggest that the results regarding the HEXACO dimensions should be interpreted cautiously.

Overall, I was able to develop a measure of equity orientation and to develop the nomological network for both its dimensions and the equity orientation profiles. Using both self- and peer-reported data, we were able to find robust findings for each dimension and the four profiles with the HEXACO and Dark Tetrad personality models. These results add to the construct validity of equity orientation and its measurement using the

EOS. To further develop the equity orientation construct, however, it is important to also demonstrate equity orientation's ability to predict behaviours (i.e., to develop its criterion-related validity), especially in a social exchange setting (e.g., work teams).

CHAPTER 3: EQUITY ORIENTATION IN A TEAM ENVIRONMENT

The overall purpose of Phase 1 of this research was to validate a measure of equity orientation and develop its nomological network to provide a basis for theorizing relations for the equity orientation dimensions and profiles. The purpose of Phase 2 was to apply the evidence accumulated in Phase 1 to a social exchange context to predict behaviour (i.e., develop equity orientations criterion validity). As previously mentioned, Adams' (1963; 1965) argued that perceived equity is not limited to just employer-employee exchanges; rather, it plays a role in any and all social exchanges (e.g., leaders and followers, romantic relationships and teamwork).

One such social exchange occurs frequently in the context of organizations: work teams. Social exchanges occur between teammates as they work interdependently. Take, for example, a cross-functional project team in an organization. Cross-functional teams consist of individuals from many different backgrounds within the organization (e.g., finance, human resources, operations, marketing). Consequently, these cross-functional teams are dependent on their teammates putting in effort and contributing to the team by sharing their respective knowledge and expertise. For example, the finance representative can provide assistance with budgeting, whereas the operations representative can help with implementation. However, if the team members do not contribute their expertise (i.e., share their unique information) then the team will not perform as well as they might otherwise (Mesmer-Magnus & DeChurch, 2009). By not performing well, the team members will not receive any outcomes (e.g., a team reward or team recognition). Thus, the concept of a social exchange of inputs for outcomes plays an important role in understanding teams and how they function.

Team Functioning Frameworks

Initial research on teams in organizations followed the input-process-output (IPO) framework, which was established in definitive works by Steiner (1972), McGrath (1984) and Hackman (1987). This framework is a systems model for how teams perform, proposing that inputs lead to process that subsequently lead to outcomes. Inputs occur prior to the team processing and can be either global team properties (e.g., project budget, the team's purpose) or configural team properties (e.g., individuals' age, personality, expertise; Klein & Kozlowski, 2000). Team processes describe the nature of the team members' interactions (e.g., monitoring progress toward goals and conflict management; Marks, Mathieu, & Zaccaro, 2001). Finally, outputs are the results of the team's processes (e.g., team performance or team rewards).

Although commonly used, the IPO framework is not without limitations. Marks et al. (2001), for example, identified that many of the mechanisms through which teams function are not processes; rather, they are emergent states that occur in teams during the team's interactions. Further, the IPO framework implies that teams are on a linear path towards performing, progressing through each stage of the model (i.e., I to P to O). This ignores, however, that team performance provides integral feedback that helps manage team processes and emergent states (Ilgen, Hollenbeck, Johnson, & Jundt, 2005).

To address the aforementioned limitations (and others) of the IPO framework, Ilgen et al. (2005) introduced a new framework that consists of input-mediator-output-input (IMOI). The IMOI framework switches out the term "process" for "mediator" to include the important influences of emergent states. Also, Ilgen et al. (2005) added a

second “I” to make the feedback loop clear, demonstrating that inputs and efforts might change as the team members interact and continue to work together.

What remained consistent between the two frameworks, however, is the presence of both inputs and outputs (i.e., outcomes). As previously mentioned, inputs occur prior to the team functioning and can be either global or configural in nature. In addition, these inputs influence team functioning, impacting how team members behave. This, in turn, influences whether, or how well, the team performs well as a unit, having a significant impact on whether they achieve their outcomes. Therefore, at the team-level the inputs of each individual and the desire to achieve team outcomes play a key role in understanding behaviour in a team environment.

Combining this understanding of team development with our understanding of social exchanges and equity orientation, I argue that an individual’s desire to put forth effort (i.e., input orientation) and desire to obtain outcomes (i.e., outcome orientation) are important to understanding how an individual will perform in a team environment. Therefore, across two studies, I investigated the relations between equity orientation and performance-related behaviour in work teams.

Study 3

The purpose of Study 3 was to examine the effects of equity orientation on individuals’ behaviour in a team environment. More specifically, I sought to investigate how equity orientation related to individuals’ performance-related behaviours (i.e., task performance, contextual performance, and counterproductive behaviour) while working in a team setting. As previously discussed, equity orientation plays an important role in social exchanges. In addition, work teams are dependent on the inputs of all team

members to achieve a common goal and/or outcome. Therefore, it seems self-evident that equity orientation, which examines individuals' desire to put forth effort and their desire for outcomes, would play an important role in understanding how individuals will perform in a team setting.

The subsequent sections will present theory explaining how equity orientation dimensions and profiles will relate to individual performance while working in a team. In addition, I discuss task performance, contextual performance and counterproductive behaviour, theorizing that effects will differ between the three performance-related behaviours.

Task Performance

Although there have been many different conceptualizations of task performance, they generally involve a collective of behaviours that are important to completing a task (Rotundo & Sackett, 2002). For example, Borman and Motowidlo (1993) defined task performance as activities that are identified as being important to an individual's work responsibilities. Thus, in a team setting, individual-level task performance can be defined as the behaviour an individual performs that helps the team complete its task(s).

In regards to input orientation, most research focuses on how motivation predicts task performance. For example, van Knippenberg (2000) theorized that work motivation is positively related to task performance. In addition, Zapata-Phelan, Colquitt, Scott, and Livingston (2009) found that intrinsic motivation was positively related to task performance, whereas Richardson and Abraham (2009) found achievement motivation was positively related to task performance. Moreover, it is not too distant a theoretical

lead to propose that individuals who are driven to put forth effort are more likely to perform better when completing their tasks.

Similarly, individuals who have a desire for outcomes are more likely to perform their tasks well. For example, providing incentives have been demonstrated to positively relate to task performance (Pritchard & Curtis, 1973). This relation is not robust, however, suggesting that incentives may only be effective for individuals who are motivated by rewards (e.g., outcome-oriented individuals). Theoretically speaking, outcome-oriented individuals mostly care about the outcome; they care less about the means to which they achieve that outcome. As a result, in situations where they know they can receive an outcome without having to do anything, outcome-oriented individuals will not perform well. In sum, outcome-oriented individuals may perform well under certain circumstances and may perform poorly in other situations.

Based on these findings and arguments, the following is hypothesized:

Hypothesis 11: Input orientation will be positively related to task performance

Contextual Performance

Contextual performance is a collection of behaviours that are not considered to be at the technical core of completing a task. Whereas task performance is prescribed by an individual's role, contextual performance is more discretionary in nature (Motowidlo & Scotter, 1994) and includes behaviours such as helping and cooperating with others. In a team setting, contextual performance plays an important role because of the strong interdependence of the team's task(s).

Similar to task performance, van Knippenberg (2000) theorized that work motivation is positively related to contextual performance. Building on this, empirical

research has found support for the prediction that input orientation would be positively related to contextual performance. For example, intrinsic motivation (Tang & Ibrahim, 1998), need for achievement (Baruch, O’Creevy, Hind & Vigoda-Gadot, 2004; Tang & Ibrahim, 1998) and ambition (Hogan, Rybicki & Borman, 1998) have all been demonstrated to positively relate to contextual performance.

The relation between outcome orientation and contextual performance, however, is less clear. For example, Lee, Iijima and Reade (2011) found contextual performance to be unrelated to salary and performance-based pay, respectively. Moreover, whether pay is linked to performance or not seems to have no influence on individuals’ contextual performance (Deckop Mangel, & Cirka, 1999). It appears reasonable to predict, therefore, that outcome orientation would have no relation with individuals’ contextual performance.

Based on these findings and arguments, the following is hypothesized:

Hypothesis 12: Input orientation will be positively related to contextual performance

Counterproductive Behaviour

Counterproductive behaviours are behaviours that hurt or negatively impact the productivity of an organization or its members (Spector & Fox, 2002). Although there are a variety of counterproductive behaviours, not all of them are applicable in a team setting (e.g., counterproductive behaviours aimed at the organization). Arguably, much counterproductive behaviour in teams is interpersonal in nature (e.g., distracting teammates or being late for team meetings).

Individuals who are driven to put forth effort are theorized to be less likely to act counterproductively. In line with expectancy theory, Martinko and Gardner (1982)

argued that – as long as the expectation that effort will lead to performance is high – individuals are less likely to perform counterproductive behaviours. Furthermore, both work ethic (i.e., continuously putting in effort to complete a task; Meriac, 2012) and task performance (Devonish & Greenidge, 2010) have been demonstrated to relate negatively to counterproductive behaviour.

On the other hand, theory on distributive justice suggests that individuals who have a desire for rewards and incentives may be more likely to behave counterproductively. For example, theoretically, outcome-oriented individuals should be more sensitive to a lack of distributive justice (i.e., outcome oriented individuals will respond negatively to a lack of distributive justice), which has been demonstrated to relate to increased counterproductive behaviour (Devonish & Greenidge, 2010; Marcus & Schuler, 2004). However, outcomes are the result of a team performing effectively or being “productive.” Counterproductive behaviours prevent a team from achieving its goal(s), reducing a team’s ability to achieve any desired outcomes. Taken together, whether an outcome-oriented individual will or will not perform counterproductive behaviour will vary depending on the situation in a team. For example, if an outcome-oriented individual perceives that the team has no, or little, chance to meet the team goal(s) to receive an outcome, they may be more likely to perform counterproductively. In contrast, if an outcome-oriented individual perceives that the team has a reasonable chance to meet the team goal(s) to receive an outcome, they would be less likely to perform counterproductively to make sure the team meets its goal(s). In sum, and outcome-oriented individual may perform counterproductive behaviours in some situations and not in others.

Based on these findings and arguments, the following is hypothesized:

Hypothesis 13: Input orientation will be negatively related to counterproductive behaviour

Equity Orientation Profiles

As previously discussed, I take a person-centered approach to examining equity orientation profiles using latent profile analysis. I expect to replicate the number of profiles found in both Study 1 and 2, revealing all four of the equity orientation profiles. In addition, I propose that the equity profiles are unique, and their combinations of inputs and outcomes will have a strong influence on the types of performance-related behaviour individuals in each profile will conduct. I therefore hypothesize the following:

Hypothesis 14a: The four equity orientation profiles will differ in task performance

Hypothesis 14b: The four equity orientation profiles will differ in contextual performance

Hypothesis 14c: The four equity orientation profiles will differ in counterproductive behaviour

Due to the exploratory nature of the current investigation, and the fact that the results for Study 1 and 2 are unknown, I am currently unable to hypothesize more specific relations between the equity orientation profiles and the three performance-related behaviours.

Methods

Participants and procedure. Participants for Study 3 were 433 undergraduate students enrolled in a first year engineering course. Each was assigned to one of 102 project teams ranging in size from three to five members (average size = 4.25). The average age of the participants was 19 years (ranging from 16 to 36) and the majority

were male (81%) and Caucasian (59%). In accordance with the university's Non-Medical Research Ethics Board (see Appendix E), participants provided electronic informed consent prior to participating in the following investigation.

The data collected for this investigation is part of a larger, longitudinal research program at a Canadian university. Researchers collect data at three different time points: at the beginning of the school year (Time 1), half way through the school year (Time 2) and at the end of the school year (Time 3). The type of data collected at each time point depends on the research questions. For example, personality data is typically collected during Time 1, prior to students being assigned to their teams, whereas team processes and performance data are typically collected during Time 2 and Time 3. For the purpose of the present study, equity orientation data were collected at Time 1 and the peer-ratings of task performance, contextual performance, and counterproductive behaviour were collected during Time 3.

At each time point, participants completed a battery of measures through an online survey tool. Participants received course credit towards their final mark for each of the three questionnaires they completed. Instructions for each measure were provided within the questionnaire. Each questionnaire took approximately 20 minutes to complete. All measures of relevance to the present research are described below.

Measures. *Equity orientation.* Equity orientation was measured using the 12-item Equity Orientation Scale developed in Study 1 and 2 (see Appendix F). The measure consists of six input orientation items and six outcome orientation items. Participants responded to the 12-items using a seven-point Likert-type agreement scale (1 = strongly disagree to 7 = strongly agree).

Peer-ratings of behaviour. Team members rated each other's performance-related behaviour over the length of their time working together (approximately 7 months). Specifically, individuals' task performance, contextual performance and counterproductive behaviour were measured (see Appendix F). All items were responded to on a seven-point Likert –type frequency scale (1 = never to 7 = always).

Task performance. Team members' task performance was measured using three items from adapted from van Dyne and LePine (1998). A sample item is, "To what extent does (group member's first name) produce quality work that meets performance expectations?"

Contextual performance. Although contextual performance has multiple dimensions, I focused on measuring the helping component of contextual performance because of its relevance to a team setting. Three items based on Lee and Allen's (2002) scale were used. Items were reworded to be applicable to the team environment and referred to each team member separately. A sample item is, "To what extent does (group member's first name) assist others with their duties?"

Counterproductive behaviour. Team members' deviant behaviour in the team was measured using four items that were created for this investigation. Items were written to address deviant behaviour that would have a negative effect on a team's productivity (e.g., derailing the team's progress, treating others with disrespect). A sample item is, "To what extent does (group member's first name) distract team members during team meetings?"

Aggregation. Peer ratings for the performance-related behaviours (i.e., task performance, contextual performance and counterproductive behaviour) were aggregated

across raters to create scores for each participant. To demonstrate interrater agreement I calculated intraclass correlations (i.e., ICC[1] and ICC[2]) for each performance-related behaviour. All intraclass correlations were acceptable, with task performance (ICC[1] = .42, ICC[2] = .75, $p < .001$), contextual performance (ICC[1] = .41, ICC[2] = .74, $p < .001$) and counterproductive behaviour (ICC[1] = .10, ICC[2] = .31, $p < .05$) all having significant intraclass correlations. These findings justify aggregating the data across peer ratings.

Results

Confirmatory factor analysis. The measurement model was examined using *Mplus7* to investigate the discriminant validity of the five variables included in the current study (see Table 22). Five measurement models were tested: First, all indicators were loaded on a single factor. Second, the equity orientation indicators were loaded on one factor and performance-related behaviour indicators on a second factor. Third, the input and outcome orientation indicators were loaded on separate factors and the performance-related behaviour indicators were loaded on a third factor. Fourth, input orientation, outcome orientation and counterproductive behaviour were loaded on separate factors, whereas task and contextual performance were loaded on the same factor. Fifth, the five study variables were loaded on separate factors; however, this model had to be modified to be positive definite¹. This was achieved by allowing the first three indicators (i.e., raters) of task performance to be correlated with their corresponding indicators (i.e., raters) of contextual performance. The results of this modified five-factor

¹The indicators for the performance-related behaviours were the scores that had been aggregated to the rater level. Thus, the large amount of shared variance amongst raters resulted in residual variances that were highly correlated, which the base five-factor model to be not positive definite.

Table 22. *Summary of the confirmatory factor analyses for Study 3 variables.*

Model	χ^2	χ^2 df	$\Delta\chi^2$	$\Delta\chi^2$ df	RMSEA	SRMR	CFI	TLI
1 Factor	2044.52	252	-	-	.13	.14	.47	.42
2 Factor	1408.66	251	635.86	-1	.10	.11	.66	.62
3 Factor	898.16	249	510.49	-2	.08	.08	.81	.79
4 Factor	868.62	246	29.54	-3	.08	.08	.82	.79
5 Factor - modified	511.95	239	356.67	-7	.05	.08	.92	.91

RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; CFI, comparative fit index; TLI, Tucker-Lewis index.

model (CFI = .92, TLI = .91, RMSEA = .05, SRMR = .08) demonstrating adequate model fit (Williams, Vandenberg & Edwards, 2009). In addition, the delta chi-square value indicated a significant improvement in fit for the five-factor model over all other models, providing support for the discriminant validity of the measures.

Correlational analysis. The means, standard deviations, intercorrelations and Cronbach's alphas for all variables are reported in Table 23. Input orientation and outcome orientation were positively related to each other ($r = .27, p < .001$). In regards to the performance-related behaviours, input orientation was positively related to both task performance ($r = .32, p < .001$) and contextual performance ($r = 0.33, p < .001$) but unrelated to counterproductive behaviour ($r = -.08, ns$), providing support for Hypotheses 11 and 12, but not Hypothesis 13. In addition, outcome orientation was positively related to task performance ($r = .13, p < .05$), but unrelated to contextual performance ($r = .08, ns$) and counterproductive behaviour ($r = .06, ns$).

Latent profile analysis. The same model fit criteria used in Study 1 and 2 were implemented in Study 3. Table 24 contains the model fit indices for the one- through five-profile LPAs. The four-profile model had the smallest AIC and aBIC, significant BLRT, the second largest entropy (.65) and posterior probabilities of profile membership ranging from 79% to 84%. As in Study 1 and 2, the four-profile model is consistent with the proposed equity orientation theory. As a result, the four-profile model was retained. Figure 5 illustrates the pattern of input and outcome orientation for the four-profile model². The proposed equity orientation profiles of equity altruistic, equity enthusiastic,

²The mean values for each profile were standardized and a linear transformation (i.e., adding a value of 2 to all mean values) to make the characteristics of each profile clearer.

Table 23. *Variable means, standard deviations, intercorrelations and Cronbach's alphas for self-ratings of equity orientation and peer-ratings of performance-related behaviours in Study 3.*

Variable	M	SD	1.	2.	3.	4.	5.
1. IN	5.47	0.72	.83 ^a				
2. OUT	4.53	0.94	.27	.80 ^a			
3. TP	5.72	1.33	.32	.13	.93 ^a		
4. CP	4.96	0.81	.33	.08	.85	.95 ^a	
5. CB	1.87	1.15	-.08	.06	-.46	-.43	.75 ^a

Note. M, mean; SD, standard deviation; IN, input orientation; OUT, outcome orientation; TP, task performance; CP, contextual performance; CB, counterproductive behaviour.

r greater than: .17, $p < .001$; .14, $p < .01$; .11, $p < .05$. ^aCronbach's alpha.

Table 24. *Summary of the latent profile analysis model fit indices for equity orientation in Study 3.*

	Log-likelihood	AIC	BIC	aBIC	<i>p</i> VLMR	<i>p</i> aLMR	<i>p</i> BLRT	Entropy
1-profile	-939.65	1887.29	1903.09	1890.40	-	-	-	-
2-profile	-925.35	1864.71	1892.36	1870.15	.00	.00	.00	.37
3-profile	-919.51	1859.02	1898.53	1866.80	.04	.04	.02	.58
4-profile	-913.41	1852.82	1904.18	1862.93	.41	.43	.02	.65
5-profile	-911.31	1854.63	1917.84	1867.07	.20	.21	.57	.69

Note. AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria; aBIC, sample-sized adjusted BIC; *p* VLMR, *p*-value for the Vuong-Lo-Mendell-Rubin likelihood ratio test; *p* aLMR, *p*-value for the Lo-Mendell-Rubin adjusted likelihood ratio test; *p* BLRT, *p*-value for the bootstrapped likelihood ratio test.

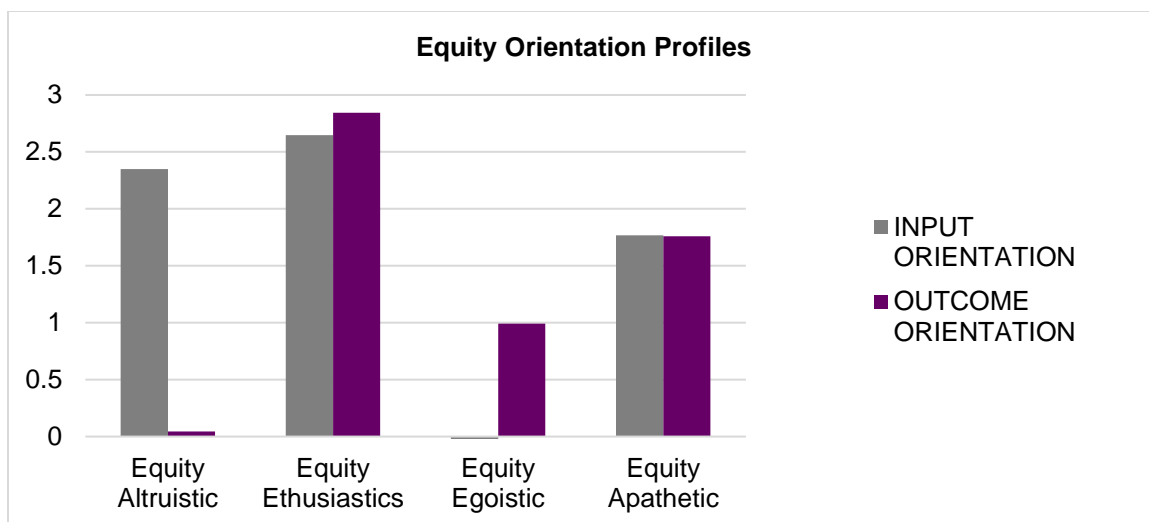


Figure 5. Equity orientation profiles in Study 3.

equity egoistic and equity apathetic were found, providing more support for Hypothesis 8.

A Wald chi-square test of equality of means was conducted to examine mean differences in task performance, contextual performance and counterproductive behaviour across the four equity orientation profiles (see Table 25). Overall, the four equity orientation profiles differed significantly on both task and contextual performance; however, the four profiles did not differ significantly on counterproductive behaviour, providing support for Hypotheses 14a and 14b, but not 14c. More specifically, equity altruistics were one of the highest on both task and contextual performance. Equity enthusiasts were also one of the highest on task and contextual performance. Equity egoistics, on the other hand, were the lowest on both task and contextual performance. Finally, equity apathetics were the second lowest on both task and contextual performance.

Study 3 Discussion

Variable-centred analysis. The results of Study 3 provide initial criterion-related validity for the equity orientation construct when applied to a team setting. Participants had rated their own input and outcome orientation and were later rated by their peers (i.e., teammates) on their task performance, contextual performance and counterproductive behaviour during their time working together. Input orientation was found to have a significant and moderate correlation with both task and contextual performance, providing support for Hypothesis 11 and 12; however, input orientation was found to be unrelated to counterproductive behaviour, which does not support Hypothesis 13. Outcome orientation was found to have no relation to either contextual or

Table 25. Summary of the Wald Chi-Square Test of Mean Equality for the peer-reported performance-related behaviours across self-reported equity orientation profiles in Study 3.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
TP	6.23 _{a,c}	6.28 _a	4.52 _b	5.63 _{b,c}	23.50***
CP	5.80 _a	5.54 _a	3.04 _b	4.92 _c	25.71***
CB	1.55 _a	1.70 _a	1.67 _a	1.93 _a	3.67

Note. TP, task performance; CP, contextual performance; CB, counterproductive behaviour.

Unshared subscripts indicate means that are significantly different by row.

*** $p < .001$.

counterproductive behaviour; however, outcome orientation was found to have a significant and small correlation with task performance. Overall, the results provide some initial support for the importance of input orientation as a personality trait that may be an antecedent to some performance-related behaviours in a team.

Person-centred analysis. The latent profile analysis in Study 3 revealed that a four profiles solution was again the best option. The four-profile model produced the proposed four equity orientation profiles, however, the profiles in Study 3 (see Figure 5) were visually different than the equity profiles found in Study 1 and 2 (see Figure 2, 3 and 4, respectively). It was found that the equity orientation profiles did differ significantly on both task and contextual performance, but did not differ significantly on counterproductive behaviour, providing support for Hypotheses 14a and 14b, but not 14c. Further, equity altruistics and equity enthusiasts were found to score high on both task and contextual performance. Equity egoistics were found to score low on both task and contextual performance, whereas equity apathetics scored in the middle, again scoring relatively close to the means for the three performance-related behaviours.

As this is the first study to investigate equity orientation and its relations with performance-related behaviours in a team setting, the results need to be interpreted cautiously and require replication. Further, the current study did not examine any potential mechanisms through which input orientation influences performance-related behaviour. Thus, I conducted a fourth study to address this issue by proposing and assessing a mediating mechanism.

Study 4

Study 4 was conducted to add to our understanding of the relations between equity orientation and individuals' performance-related behaviour in a team environment. More specifically, I examined a potential mediating mechanism – social loafing – that would add to our understanding of the relations between equity orientation and performance-related behaviours in teams. Mediation analyses are an integral part of organizational research, helping researchers move beyond bivariate relations into understanding how a third variable (i.e., the mediator) can explain the effects of one variable on another (Baron & Kenny, 1986; James & Brett, 1984; MacKinnon, Lockwood, Hoffman, & Sheets, 2002; Shrout & Bolger, 2002). Thus, conducting a mediation analysis is an important next step in understanding the relations between equity orientation and performance-related behaviours in teams.

In addition, I sought to replicate the findings from Study 3 and examine whether they are consistent across both peer- and self-reported ratings of performance. Although self-report ratings are not without limitations (Donaldson & Grant-Vallone, 2002; Podsakoff, et al., 2003), it was important for future research that findings were corroborated across self-reports because of the difficulties of collecting peer-reports when conducting research in organizations. Further, previous research has found that self- and peer-reports of task performance (Conway & Huffcutt, 1997; Harris & Schaubroeck, 1988), contextual performance (Rioux & Penner, 2001) and counterproductive behaviour (Fox, Spector, Goh & Bruursema, 2007) demonstrate some convergence, indicating the value of including the self-report measures.

In sum, the current study sought to replicate the findings of Study 3 regarding equity orientation – its dimensions and profiles – and performance-related behaviours in teams with both self- and peer-reports. In addition, I examined whether social loafing is a mediating mechanism between equity orientation and performance-related behaviour in teams. In regards to social loafing, the subsequent sections will discuss our proposed theory surrounding its relations with equity orientation, performance-related behaviour, and its potential mediating effect on the variables.

Social Loafing

Social loafing is the tendency for individuals who are working in a group to put forth less effort than they would if they were working independently (Latané, Williams, & Harkins, 1979). A meta-analysis by Karau and Williams (1993) found social loafing effects to be robust and generalized across tasks and participant populations. It should be noted that the research included in this meta-analysis examined social loafing in experimental settings, treating it as a general response occurring across all individuals. This research, however, ignores the possibility that individuals may differ on how much they actually social loaf.

There are multiple causes of social loafing, such as a deindividuation in groups (Williams, Harkins & Latané, 1981) and/or a lack of challenge (Harkins & Petty, 1982). One important antecedent to social loafing is an individual's disposition. To address this, George (1992) developed a questionnaire to measure the extent to which individuals engage in social loafing in organizational settings and found general support for its validity.

In the current investigation, it is argued that the personality construct of equity orientation – dimensions and profiles – will contribute to our understanding of who is more or less likely to engage in social loafing behaviour. To further elucidate this point, the following sections will propose theory regarding the relations between the social loafing and both the equity orientation dimensions and profiles.

Input Orientation

As noted throughout this dissertation, input orientation is an individual's desire to put forth effort and contribute in a given social exchange situation. Individuals who score high on this trait are more likely to complete their responsibilities and work hard when completing a task. Although no research has yet been conducted to examine input orientation and social loafing directly, a study by Hoon and Tan (2008) found that Conscientiousness was negatively related to social loafing for reasons that are similar to those used to theorize that Conscientiousness would be positively related to input orientation (e.g., hard working). Further, social loafing occurs when individuals working in a team suppress their own efforts and therefore should be negatively related to input orientation (Latané et al., 1979).

Outcome Orientation

Again, as previously mentioned throughout this dissertation, outcome orientation is an individual's desire to receive outcomes in a given social exchange situation. Individuals who score high on this trait are motivated by receiving rewards and focus on what they can get from a given situation. Limited research has been conducted to examine the relation between social loafing and a desire for outcomes. Social loafers, however, have been referred to as "free riders" (Dommeyer, 2007) because they remain

with a team so they can reap the benefits of the shared rewards (e.g., compensation or recognition) without having to contribute to the team. This suggests that outcome-oriented individuals may withhold their efforts in a team that is performing well so they can receive their reward with minimal effort. However, it can also be theorized that if a team is not performing well, outcome-oriented individuals will put forth more effort in an attempt to improve the team's ability to obtain a reward. Therefore, it is theorized that individuals who are motivated by outcomes may social loaf in one team setting and not in another.

In sum, social loafing is a lack of putting forth effort and therefore should be negatively related to input orientation. However, outcome oriented individuals may or may not social loaf depending on whether they perceive it will influence the team's ability obtain an outcome. Therefore, the following is hypothesized:

Hypothesis 15: Input orientation will be negatively related to social loafing

Task Performance

Within the social loafing literature, task performance has received minimal research attention. The majority of research examining task performance and social loafing has focused on demonstrating that individuals will often not try their hardest in a team setting in comparison to working alone. However, theory surrounding social loafing suggests that it should (negatively) relate to individual task performance. Ingham, Levinger, Graves and Peckham (1974) proposed that social loafing occurs when individuals withhold effort. Further, George (1992) argued that social loafing leads to productivity losses in groups. Thus, an individual who is high in social loafing is likely to

withhold their efforts in a team setting and with therefore be perceived by his or her teammates as someone who is not completing their tasks as expected.

Contextual Performance

My review of the literature revealed only one study that investigated the relation between contextual performance and social loafing. Hoon and Tan (2008) found that contextual performance and social loafing were unrelated. Theoretically, contextual performance is considered to be “extra-role” behaviour. Because social loafing is theorized to be an individual’s intentional reduction of productivity in a group setting, individuals who social loaf should be less likely to perform behaviours that go above and beyond what is asked of them (i.e., contextual performance). For example, an individual who is social loafing should be less likely to help their fellow team members when they are struggling with their tasks.

Counterproductive Behaviour

Similarly to contextual performance, my review of the literature revealed only one study that investigated the relation between counterproductive behaviour and social loafing. Hung, Chi, and Lu (2009) found that social loafing was positively related to counterproductive behaviours aimed towards individuals (i.e., coworkers). However, social loafing was unrelated to counterproductive behaviours aimed towards the organization (e.g., stealing). Although only a single investigation, this study suggests that social loafing is more of an interpersonal transgression, having a negative effect on those surrounding the social loafer. Thus, because working in teams requires individuals to work more interdependently than working as coworkers, this effect could become amplified.

Based on the previously discussed theory regarding performance-related behaviour and social loafing, I hypothesize the following:

Hypothesis 16a: Social loafing will be negatively related to task performance

Hypothesis 16b: Social loafing will be negatively related to contextual performance

Hypothesis 16c: Social loafing will be positively related to counterproductive behaviour

Mediation

I predict that social loafing will be an important mediating mechanism between the equity orientation dimensions and the performance-related behaviours of team members. As I already discussed, individuals who are high in input orientation are less likely to social loaf. Thus, their teammates will perceive them as being more likely to be productive as a teammate and assist the team's functioning by completing tasks assigned to him or her (i.e., task performance), help other teammates when they are struggling (i.e., citizenship behaviour), and to not perform activities that might derail or diminish their teams' performance (i.e., counterproductive behaviour).

In regards to outcome orientation, it was proposed that it would be unrelated to social loafing, task performance, contextual performance and counterproductive behaviour. Therefore no mediation (i.e., indirect effect) is proposed.

Based on these arguments, the following is hypothesized:

Hypothesis 17a: Social loafing will mediate the relations between input orientation and task performance

Hypothesis 17b: Social loafing will mediate the relations between input orientation and contextual performance

Hypothesis 17c: Social loafing will mediate the relations between input orientation and counterproductive behaviour

Equity Orientation Profiles

Again, a person-centered approach was used to examine equity orientation profiles. I expect to replicate the number of profiles found in Study 1, 2 and 3, revealing all four equity orientation profiles. Based on the premise that social loafing will be negatively related to input orientation and positively related to outcome orientation, I propose that this effect will have a similar pattern with respect to the equity orientation profiles. Individuals who are input oriented will always seek to contribute to their team, no matter the conditions. Therefore, individuals with profiles that are high on input orientation (i.e., equity altruistics and equity enthusiasts) should score low on social loafing, whereas those with profiles that are low on input orientation (i.e., equity apathetics and equity egoistics) should be more likely to social loaf as they will not need to contribute in order to reap the benefits of the group's work (Jones, 1984).

Hypothesis 18: Equity altruistics and equity enthusiasts will have low scores on social loafing, whereas equity apathetics and equity egoistics will have high scores on social loafing.

Profile mediation. I theorize that social loafing will mediate the relation between the equity orientation profiles and the three performance-related behaviours. It was proposed that the two profiles that are low on input orientation (i.e., equity apathetics and equity egoistics) would be more likely to social loaf. As a result, their teammates will perceive these individuals as being detrimental to the team's functioning by not completing tasks (i.e., task performance), nor helping other teammates in need of

assistance (i.e., contextual performance), and behaving in ways that will prevent the team from being productive (i.e., counterproductive behaviour). Individuals characterized by the other profiles (i.e., equity altruistics and equity enthusiasts, who are both high in input orientation), are less likely to social loaf and will therefore perform more of the performance-related behaviours. Based on this argument, the following is hypothesized:

Hypothesis 19a: Social loafing will mediate the relation between the equity orientation profiles and team members' task performance

Hypothesis 19b: Social loafing will mediate the relation between the equity orientation profiles and team members' contextual performance

Hypothesis 19c: Social loafing will mediate the relation between the equity orientation profiles and team members' counterproductive behaviour

Methods

Participants and procedure. The sample used in this study consisted of 490 undergraduate students enrolled in a first year engineering course at a large university in Canada. The average age of the participants was 19 years (ranging from 17 to 34). In addition, the majority of the participants were male (77%) and Caucasian (58%) or East Asian (19%). In accordance with the university's Non-Medical Research Ethics Board (see Appendix G), participants provided written informed consent prior to participating in the following investigation.

Consistent with Study 3, the data collected for this investigation is part of a larger, longitudinal research program at the university. The equity orientation data was collected halfway through the school year (Time 2) and the social loafing and performance-related behaviours data was collected at the end of the school year (Time 3).

Participants completed questionnaires through an online survey tool at each time point. Participants receive course credit towards their final mark for each questionnaire completed (e.g., Time 2 questionnaires). Instructions for each measure are provided within the questionnaire. Each questionnaire took approximately 20 minutes for participants to complete.

Measures. *Equity orientation.* Equity orientation was measured with 12 items – six input orientation items and six outcome orientation items – developed in Study 1 (see Appendix H). Participants responded to the 12-item scale on a seven-point Likert-type agreement scale (1 = strongly disagree to 7 = strongly agree). The equity orientation data was collected during Time 1.

Self- and peer-ratings of behaviour. Team members rated each other's performance-related behaviour, as well as their own, over the length of their time working together (approximately 7 months). Specifically, individuals' task performance, contextual performance, and counterproductive behaviour were measured (see Appendix H). All items were responded to on a seven-point Likert-type frequency scale (1 = never to 7 = always).

Social loafing. Team members' social loafing in the team was measure using four items adapted from George's (1992) investigation. Items were reworded to fit with the peer-ratings in the current investigation. A sample item is, "To what extent does (group member's first name) put forth less effort than other members of your team?"

Task performance. Team members' task performance was measured using three items from a measure developed by Van Dyne and LePine (1998) and adapted for the

current investigation. A sample item is, “To what extent does (group member’s first name) produce quality work that meets performance expectations?”

Contextual performance. Team members’ contextual performance in the team was assessed using three items based on Lee and Allen’s (2002) measure of organizational citizenship behaviour. Items were reworded to be applicable to the team environment. A sample item is, “To what extent does (group member’s first name) assist others with their duties?”

Counterproductive behaviour. Team members’ deviant behaviour in the team will be measured using four items that were created for this investigation. Items were written to address deviant behaviour that would have a negative effect on a team’s productivity (e.g., derailing the team’s progress, treating others with disrespect). A sample item is, “To what extent does (group member’s first name) distract team members during team meetings?”

Aggregation. As in Study 3, peer ratings for social loafing and the performance-related behaviours were aggregated across raters to create scores for each participant. Again, I calculated intraclass correlations (i.e., ICC[1] and ICC[2]) for social loafing and each performance-related behaviour. All intraclass correlations were acceptable, with social loafing (ICC[1] = .41, ICC[2] = .73, $p < .001$), task performance (ICC[1] = .43, ICC[2] = .75, $p < .001$), contextual performance (ICC[1] = .30, ICC[2] = .63, $p < .001$) and counterproductive behaviour (ICC[1] = .15, ICC[2] = .42, $p < .05$) all having significant intraclass correlations. These findings justify aggregating the data across peer ratings.

Results

Confirmatory factor analysis. In congruence with Study 3, the measurement model was examined using *Mplus7* to investigate the discriminant validity of the variables included (see Table 26). Ten different factor models were investigated: First, all indicators were loaded on a single factor. Second, equity orientation indicators were loaded on a single factor and self- and peer-reported social loafing and performance-related-behaviours were loaded on a second factor. Third, Input orientation and outcome orientation indicators were loaded on separate factors, whereas the social loafing and performance-related behaviour indicators (i.e., both self and peer) were still loaded on a single, third factor. Building on the third model, the four-factor model had self- and peer-reported social loafing and performance-related behaviour indicators loading on two separate factors (i.e., a self-reported factor and a peer-reported factor). The five, six and seven factor models, self-reported social loafing, counterproductive behaviour, contextual performance and task performance indicators were loaded on separate indicators, respectively. The eight, nine and ten factor models were treated similarly with regard to the peer-reported indicators of social loafing, counterproductive behaviour, contextual performance and task performance, respectively. However, as in Study 3, the aggregated scores caused the eight- through ten-factor models to be not positive definite³. To address this, in the eight-factor model the residuals for social loafing and task performance were allowed to correlate. For the nine-factor model, the residuals for social loafing were allowed to correlate with both task and contextual performance. Finally, in the ten-factor

³Again, this is attributed to the high levels of shared variance across peer-ratings of social loafing and the performance-related behaviours.

Table 26. *Summary of the confirmatory factor analyses for Study 4 variables.*

Model	χ^2	χ^2 df	$\Delta\chi^2$	$\Delta\chi^2$ df	RMSEA	SRMR	CFI	TLI
1 Factor	6731.66	819	-	-	.11	.13	.35	.32
2 Factor	5612.25	818	1119.42	1	.11	.12	.47	.45
3 Factor	5028.07	816	584.18	2	.10	.12	.54	.51
4 Factor	3758.00	813	1270.07	3	.09	.09	.68	.66
5 Factor	3389.83	809	368.16	4	.08	.10	.72	.70
6 Factor	2853.83	804	536.00	5	.07	.08	.78	.76
7 Factor	2373.02	798	480.82	6	.06	.07	.83	.81
8 Factor - modified	1850.35	782	522.67	16	.05	.07	.88	.87
9 Factor - modified	1817.51	774	32.84	8	.05	.06	.89	.87
10 Factor - modified	1443.65	762	373.86	12	.04	.06	.93	.92

RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; CFI, comparative fit index; TLI, Tucker-Lewis index.

model, the residuals for social loafing, task performance and contextual performance were allowed to correlate. The results of the modified ten-factor model (CFI = .93, TLI = .92, RMSEA = .04, SRMR = .06) demonstrated adequate model fit (Williams, Vandenberg & Edwards, 2009). In addition, the delta chi-square value demonstrated improved model fit over all other models, providing support for the discriminant validity of the measures.

Correlational analyses. The means, standard deviations, intercorrelations and Cronbach's alphas for all variables are reported in Table 27. Input orientation and outcome orientation were positively related ($r = .18, p < .001$). In addition, input orientation was negatively related to self and peer-reported social loafing ($r = -.25, p < .001$; $r = -.25, p < .001$, respectively), providing support for Hypothesis 15. In regards to the performance-related behaviours, input orientation was positively related to self- and peer-reported task performance ($r = .32, p < .001$; $r = .26, p < .001$, respectively) and self- and peer-reported contextual performance ($r = 0.35, p < .001$; $r = .22, p < .001$, respectively), providing further support for Hypotheses 11 and 12. Further, input orientation was negatively related to self-reported counterproductive behaviour ($r = -.10, p < .05$); however, it was unrelated to peer-reported counterproductive behaviour ($r = -.08, ns$), providing only partial support for Hypothesis 13. Outcome orientation, on the other hand, was unrelated to self- and peer-reported social loafing ($r = .01, ns$; $r = -.09, ns$, respectively). In regards to the performance-related behaviours, outcome orientation

Table 27. Variable means, standard deviations, intercorrelations and Cronbach's alphas for self-ratings of equity orientation and peer-ratings of social loafing and performance-related behaviours in Study 4.

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. INs	5.53	0.88	.88 ^a									
2. OUTs	4.53	0.97	.18	.77 ^a								
3. SLs	1.61	0.87	-.25	.01	.90 ^a							
4. TPs	6.24	0.78	.32	.02	-.53	.83 ^a						
5. CPs	5.44	1.17	.35	.04	-.34	.46	.92 ^a					
6. CBs	2.01	0.92	-.10	.06	.60	-.32	-.16	.55 ^a				
7. SLp	2.09	1.11	-.25	-.09	.28	-.25	-.21	.21	.94 ^a			
8. TPs	5.82	1.02	.26	.04	-.26	.31	.25	-.19	-.77	.93 ^a		
9. CPp	5.06	1.21	.22	.03	-.27	.28	.30	-.18	-.70	.82	.95 ^a	
10. CBp	2.22	0.78	-.08	-.08	.18	-.17	-.07	.17	.61	-.38	-.32	.64 ^a

Note. M, mean; SD, standard deviation; IN, input orientation; OUT, outcome orientation; SL, social loafing; TP, task performance; CP, contextual performance; CB, counterproductive behaviour; s, self-report; p, peer-report.

r greater than: .16, $p < .001$; .13, $p < .01$; .10, $p < .05$. ^aCronbach's alpha.

was unrelated to self- and peer-reported task performance ($r = .02, ns$; $r = .04, ns$, respectively), self- and peer-reported contextual performance ($r = .04, ns$; $r = .03, ns$, respectively) and self- and peer-reported counterproductive behaviour ($r = .06, ns$; $r = -.08, ns$, respectively).

Mediation analysis. Figure 6 demonstrates the proposed mediation effect between input orientation, social loafing and performance-related behaviours. The mediation analyses were conducted using SPSS macro PROCESS (Hayes, 2013) with the recommended 5000 bias corrected bootstrapping technique.

The results of the mediation analyses with self-reported social loafing and self-reported performance-related behaviours are presented in Table 28. It was found that indirect effect of input orientation on self-reported task performance through self-reported social loafing was significant (95%CI = [.05, .17]). Further, the indirect effect of input orientation on self-reported contextual performance through self-reported social loafing was significant (95%CI = [.04, .15]). Even further, the indirect effect of input orientation on self-reported counterproductive behaviour through self-reported social loafing was significant (95%CI = [-.24, -.10]). It is worth noting, however, that the direct effects for input orientation on self-reported task performance and self-reported contextual performance were still significant (95%CI = [.11, .25]; 95%CI = [.26, .49], respectively), whereas the direct effect for counterproductive behaviour was non-significant (95%CI = [-.03, .14]) suggesting that the relation was partially mediated for self-reported task and contextual performance and fully mediated self-reported counterproductive behaviour, providing support for Hypotheses 17a, 17b and 17c.

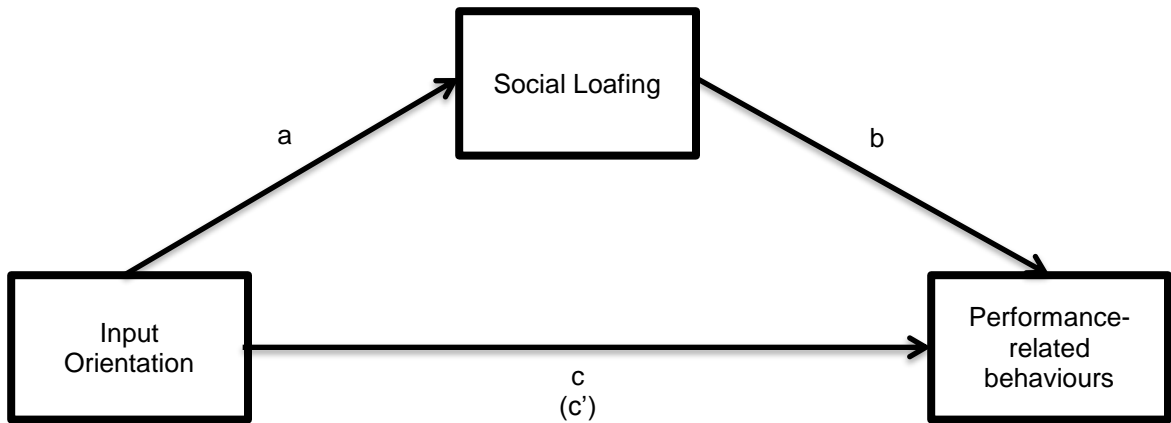


Figure 6. Mediation model for input orientation on the self- and peer-reported performance-related behaviours through self- and peer-reported social loafing.

Table 28. Summary of the mediated regression analyses for self-reported input orientation, self-reported social loafing and self-reported performance-related behaviours.

Variable	B	SE	t	CI _L	CI _U
<i>Task performance</i>					
Block 1					
IN	.29***	.04	7.10	.21	.37
<i>R</i> ²	.10***				
Block 2					
IN	.18***	.04	4.96	.11	.25
SLs	-.44***	.04	-11.83	-.51	-.37
<i>R</i> ²	.32***				
<i>Contextual performance</i>					
Block 1					
IN	.46***	.06	7.82	.35	.58
<i>R</i> ²	.12***				
Block 2					
IN	.38***	.06	6.41	.26	.49
SLs	-.35***	.06	-5.87	-.47	-.24
<i>R</i> ²	.19***				
<i>Counterproductive behaviour</i>					
Block 1					
IN	-.11*	.05	-2.14	-.20	-.01
<i>R</i> ²	.01*				
Block 2					
IN	.06	.04	1.34	-.03 ^a	.14 ^a
SLs	.67***	.04	15.95	.58	.75
<i>R</i> ²	.37***				

Note. Outcome variables are self-reported and in *italics*. B, unstandardized regression coefficient; SE, standard error; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval; IN, input orientation; SLs, self-reported social loafing.

*** $p < .001$. * $p < .05$.

^aConfidence intervals that contain zero are considered to be non-significant.

The results of the mediation analyses with peer-reported social loafing and peer-reported performance-related behaviours are presented in Table 29. It was found that indirect effect of input orientation on peer-reported task performance through peer-reported social loafing was significant (95% CI = [.13, .30]). Further, the indirect effect of input orientation on peer-reported contextual performance through peer-reported social loafing was significant (95% CI = [.14, .33]). Even further, the indirect effect of input orientation on peer-reported counterproductive behaviour through peer-reported social loafing was significant (95% CI = [-.19, -.09]). It is worth noting, however, that the direct effects for input orientation on peer-reported task performance was still significant (95% CI = [.01, .16]), whereas the direct effect for contextual performance and counterproductive behaviour was non-significant (95% CI = [-.03, .17; 95% CI = [-.00, .13], respectively) suggesting that the relation was partially mediated for peer-reported task performance and fully mediated for both peer-reported contextual performance and counterproductive behaviour. These results provide further support for Hypotheses 17a, 17b and 17c.

Latent profile analysis. The same model fit criteria used in Study 1, 2 and 3 were implemented in Study 4. Table 30 contains the model fit indices for the one- through five-profile LPAs. The five-profile model had the smallest AIC and aBIC, a significant BLRT, and the largest entropy. However, a review of the profile means revealed that the fifth profile was redundant and did not add theoretically to the understanding of equity orientation. The four-profile model, on the other hand, had the second smallest AIC and aBIC, the smallest BIC, and a significant BLRT. Although the entropy (.58) was small,

Table 29. Summary of the mediated regression analyses for self-reported input orientation, peer-reported social loafing and peer-reported performance-related behaviours.

Variable	B	SE	t	CI _L	CI _U
<i>Task performance</i>					
Block 1					
IN	.29***	.05	5.52	.19	.40
<i>R</i> ²	.07***				
Block 2					
IN	.09*	.04	2.34	.01	.16
SLp	-.69***	.03	-22.68	-.74	-.63
<i>R</i> ²	.58***				
<i>Contextual performance</i>					
Block 1					
IN	.30***	.06	4.64	.17	.42
<i>R</i> ²	.05***				
Block 2					
IN	.07	.05	1.44	-.03 ^a	.17 ^a
SLp	-.76***	.04	-18.65	-.84	-.68
<i>R</i> ²	.48***				
<i>Counterproductive behaviour</i>					
Block 1					
IN	-.06	.04	-1.55	-.15 ^a	.02 ^a
<i>R</i> ²	.01				
Block 2					
IN	.07	.04	1.88	-.00 ^a	.13 ^a
SLp	.43***	.03	15.08	.37	.49
<i>R</i> ²	.35***				

Note. Outcome variables are peer-reported and in *italics*. B, unstandardized regression coefficient; SE, standard error; CI_L and CI_U, lower and upper bounds, respectively, of the 95% confidence interval; IN, input orientation; SLp, peer-reported social loafing.

*** $p < .001$. * $p < .05$.

^aConfidence intervals that contain zero are considered to be non-significant.

Table 30. *Summary of the latent profile analysis model fit indices for equity orientation in Study 4.*

	Log-likelihood	AIC	BIC	aBIC	<i>p</i> VLMR	<i>p</i> aLMR	<i>p</i> BLRT	Entropy
1-profile	-1221.35	2450.70	2467.20	2454.50	-	-	-	-
2-profile	-1210.95	2435.90	2464.77	2442.56	.02	.02	.00	.59
3-profile	-1195.80	2411.60	2452.85	2421.11	.00	.00	.00	.64
4-profile	-1187.61	2401.22	2454.84	2413.58	.18	.20	.00	.58
5-profile	-1181.99	2395.98	2461.98	2411.20	.50	.51	.04	.82

Note. AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria; aBIC, sample-sized adjusted BIC; *p* VLMR, *p*-value for the Vuong-Lo-Mendell-Rubin likelihood ratio test; *p* aLMR, *p*-value for the Lo-Mendell-Rubin adjusted likelihood ratio test; *p* BLRT, *p*-value for the bootstrapped likelihood ratio test.

the posterior probabilities of profile membership ranged from 72% to 79%. In addition, and as discussed in all the previous studies herein, the four-profile model is consistent with the proposed equity orientation theory. As a result, the four-profile model was retained over the five-profile. Figure 7 contains the pattern of input and outcome orientation for the four-profile model⁴. The proposed equity orientation profiles of equity altruistic, equity enthusiastic, equity egoistic and equity apathetic were found, providing more support for Hypothesis 8.

A Wald chi-square test of equality of means was conducted to examine mean differences in self- and peer-reported social loafing, task performance, contextual performance and counterproductive behaviour across the four equity orientation profiles (see Table 31). Overall, the four equity orientation profiles differed significantly on self- and peer-reported task performance and self- and peer-reported contextual performance, providing further support for Hypotheses 14a and 14b. Further, the four equity orientation profiles differed significantly on self-reported counterproductive behaviour, providing partial support for Hypothesis 14c. Even further, the four equity orientation profiles differed significantly on self- and peer-reported social loafing, providing initial support for Hypothesis 18. More specifically, equity altruistics were one of the lowest on both self- and peer-reported social loafing, one of the highest on self- and peer-reported task and contextual performance, and the lowest on self-reported counterproductive behaviour. Equity enthusiasts were one of the lowest on self- and peer-reported social loafing, one of the highest on self- and peer-reported task and contextual performance. Equity egoistics, on the other hand, were the highest on both self- and peer- reported

⁴The mean values for each profile were standardized and a linear transformation (i.e., adding a value of 2 to all mean values) to make the characteristics of each profile clearer.

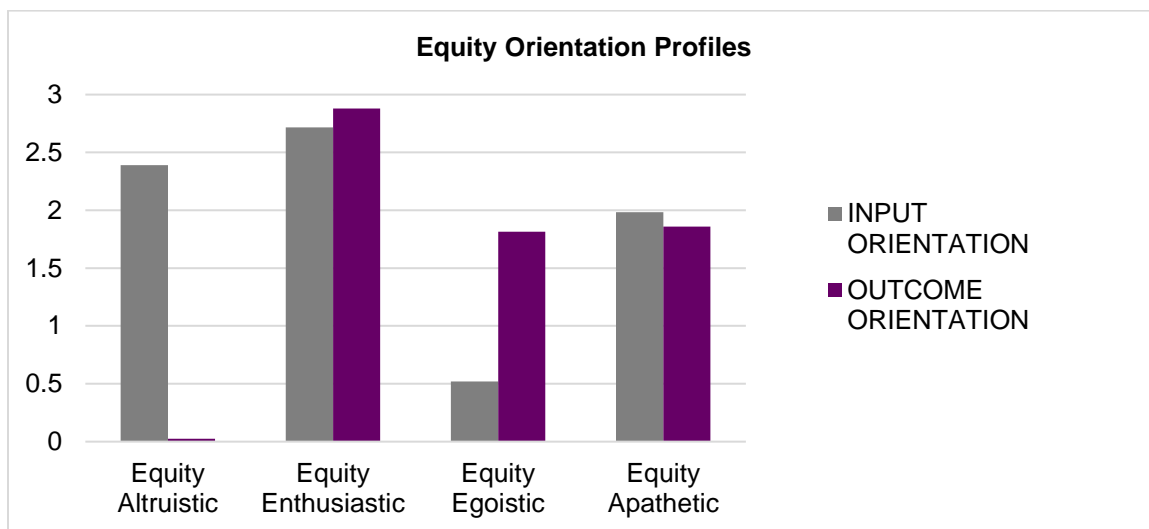


Figure 7. Equity orientation profiles in Study 4.

Table 31. Summary of the Wald Chi-Square Test of Mean Equality for self- and peer-reported social loafing and performance-related behaviour across self-reported equity orientation profiles in Study 4.

Variables	Equity Altruistic	Equity Enthusiastic	Equity Egoistic	Equity Apathetic	Overall $\chi^2(3)$
SLs	1.27 _a	1.43 _{a,c}	2.02 _b	1.60 _c	13.36**
TPs	6.64 _a	6.51 _a	5.61 _b	6.23 _c	27.47***
CPs	5.88 _{a,c}	5.91 _a	4.67 _b	5.39 _c	23.86***
CBs	1.36 _a	1.95 _b	2.25 _b	2.02 _b	26.69***
SLp	1.86 _a	1.73 _a	2.66 _b	2.04 _a	17.58**
TPp	5.97 _a	6.16 _a	5.32 _b	5.87 _a	18.75***
CPp	5.26 _{a,b}	5.34 _a	4.62 _b	5.14 _{a,b}	10.17*
CBp	2.28 _a	2.16 _a	2.46 _a	2.08 _a	4.30

Note. SL, social loafing; TP, task performance; CP, contextual performance; CB, counterproductive behaviour; s, self-report; p, peer-report.

Unshared subscripts indicate means that are significantly different by row.

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

social loafing, the lowest on self- and peer-reported task performance, and the lowest on self-reported contextual performance and one of the lowest on peer reported contextual performance. Finally, equity apathetics were the second highest on self-reported social loafing and the second lowest on self-reported task and contextual performance.

Latent profile mediation analysis. Advances in structural equation mixture modeling (Bauer & Curran, 2004) allow for the inclusion of mediation analysis in LPA. Procedures described by Asparouhov and Muthén (2014) and Nylund-Gibson, Grimm, Quirk, & Furlong (2014) allow the equity orientation profiles to be utilized as independent variables in a mediation framework. Although this technique is novel, similar techniques have been used in previous research (e.g., O’Neill, McLarnon, Xiu, & Law, 2015). Herein, the BCH approach proposed by Bolck, Croon, and Hagenars (2004) – a three-step approach to conducting mediation analysis with latent profiles – was used. The BCH approach has been demonstrated to outperform other approaches to running this analysis and was therefore utilized for the current investigation (see Asparouhov & Muthén, 2015; Bakk & Vermunt, 2016).

The latent profile mediation analyses were conducted using *Mplus* 7. Figure 8 demonstrates the proposed mediation model between the equity orientation profiles, social loafing and performance-related behaviours (i.e., task performance, contextual performance and counterproductive behaviour)⁵. As recommended by Hayes and Preacher (2014), bias-corrected bootstrapping was used to investigate the significance of the mediation effects. In addition, the assumption of homogeneity of regression (i.e., the

⁵ For self-reported performance-related behaviours, self-reported social loafing was the mediating mechanism, whereas for peer-reported performance-related behaviours, peer-reported social loafing was the mediating mechanism.

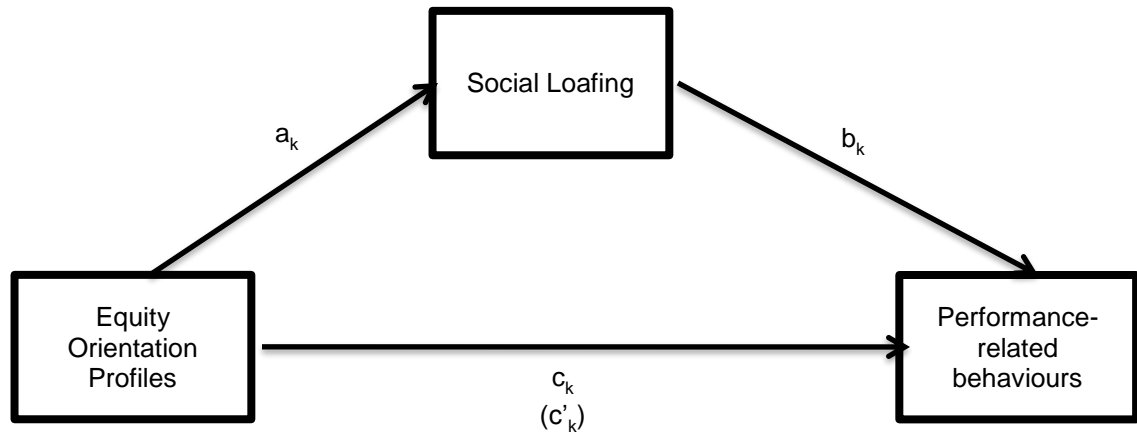


Figure 8. Mediation model for the equity orientation profiles on the self- and peer-reported performance-related behaviours through self- and peer-reported social loafing.

b_k is estimated as equal across profiles) was also used. For this procedure, a referent profile has to be selected for which the other profiles will be compared. The equity egoistic profile was selected as the referent profile to compare all others (i.e., equity altruistic, equity enthusiastic and equity apathetic) because it had the highest social loafing mean.

The latent profile mediation analyses revealed multiple significant indirect effects. Relative to equity egoistics, both equity altruistics and equity enthusiasts were associated with higher self-reported task performance (95% CI = [.11, .77]; 95% CI = [.05, .58], respectively) and self-reported contextual performance (95% CI = [.09, .60]; 95% CI = [.04, .47], respectively). In contrast, equity altruistics, equity enthusiasts and equity apathetics were all associated with higher peer-reported task performance (95% CI = [.16, .99]; 95% CI = [.33, 1.03]; 95% CI = [.02, .82], respectively) and peer-reported contextual performance (95% CI = [.16, 1.04]; 95% CI = [.34, 1.10]; 95% CI = [.03, .89], respectively) through the indirect mechanism linking the equity orientation profiles to self- and peer-reported task and contextual performance through self- and peer-reported social loafing. Further, relative to the equity egoistics, equity altruistics and equity enthusiasts were associated with lower self-reported counterproductive behaviour (95% CI = [.11, .77]; 95% CI = [.05, .58], respectively), whereas equity altruistics, equity enthusiasts and equity apathetics were associated with lower peer-reported counterproductive behaviour (95% CI = [.16, 1.04]; 95% CI = [.34, 1.10]; 95% CI = [.03, .89], respectively) through the indirect mechanism linking the equity orientation profiles to self- and peer-reported task and contextual performance through self- and peer-reported social loafing. These results provide support for Hypotheses 19a, 19b and 19c.

Study 4 Discussion

Variable-centred analysis. The results of Study 4 provide further support for the relations between equity orientation and performance-related behaviours. More specifically, further support was found for the relations between input orientation and both self- and peer-reported task and contextual performance, providing further support for Hypotheses 11 and 12. In addition, the current study found a significant weak and negative correlation between input orientation and self-reported counterproductive behaviour, but not peer-reported counterproductive behaviour, providing partial support for Hypothesis 13. Further, outcome orientation was unrelated to self- and peer-reported task performance, contextual performance and counterproductive behaviour. In regards to social loafing, self- and peer-reported social loafing was positively related to each other. Further, input orientation had a significant and negative relations with both self- and peer-reported social loafing, providing support for Hypotheses 15, whereas outcome orientation was unrelated to both self- and peer-reported social loafing. In addition, self- and peer-reported social loafing was found to negatively relate to self- and peer-reported task and contextual performance, and positively relate to self- and peer-reported counterproductive behaviour.

I examined whether the relation between input orientation and the three performance-related behaviours were mediated by social loafing. The results of these analyses demonstrated that the relation between input orientation and self- and peer-reported task performance were partially mediated by self- and peer-reported social loafing, respectively, providing support for Hypothesis 17a. Further, input orientation and self-reported contextual performance was partially mediated by self-reported social

loafing, whereas input orientation and peer-reported contextual performance was fully mediated by peer-reported social loafing, providing support for Hypothesis 17b. Even further, input orientation and self- and peer-reported counterproductive behaviour was fully mediated by self- and peer-reported social loafing, providing support for Hypothesis 17c. These results demonstrated the role of social loafing as a mediating mechanism through which input orientation relates to the three performance-related behaviours.

Person-centred analysis. The latent profile analysis in Study 4 found structurally similar profiles (see Figure 7) as the four profiles found in Study 3 (see Figure 5). It was found that the equity orientation profiles differed significantly on self- and peer-reported task and contextual performance, providing further support for Hypotheses 14a and 14b. Moreover, the four equity profiles differed significantly on self-reported counterproductive behaviour, but not peer-reported counterproductive behaviour, providing partial support for Hypothesis 14c. In addition, the four equity profiles were found to differ significantly on both self- and peer-reported social loafing, providing initial support for Hypothesis 18. More specifically, both equity altruistics and equity enthusiasts were found to score high on self- and peer-reported task and contextual performance and low on both self- and peer-reported social loafing. In addition, equity altruistics were found to score low on self-reported counterproductive behaviour, but not peer-reported counterproductive behaviour. Equity egoistics were found to score low on both self- and peer-reported task and contextual performance and high on self- and peer-reported social loafing. Consistent with Study 3, equity apathetics scored in the middle for self-reported task performance, contextual performance and social loafing. Interestingly, equity apathetics were not significantly lower on peer-reported task

performance, contextual performance or social loafing in comparison to the equity altruistics and equity enthusiasts profiles.

For the latent profile mediation analysis, the equity egoistic profile was selected as the referent profile because it scored significantly higher than the other profiles on both self- and peer-reported social loafing. The mediation analysis revealed that, for self-reported social loafing and performance-related behaviours, the equity altruistics and equity enthusiasts had significantly higher task and contextual performance and significantly lower counterproductive behaviour than the equity egoistics, whereas the equity apathetics were not significantly different from the equity egoistics. For peer-reported social loafing and performance-related behaviours, however, all three profiles (i.e., equity altruistics, equity enthusiasts and equity apathetics) were significantly higher on task and contextual performance and lower on counterproductive behaviour than the equity egoistics.

In sum, Study 4 provided initial evidence that social loafing is an important mediating mechanism that relates both equity orientation dimensions and profiles to performance-related behaviours in a team setting. This, however, is the first study investigating this relation and further research is required.

Chapter 3 Discussion

The purpose of the two Phase 2 studies was to: (1) examine whether equity orientation dimensions and profiles were related to performance-related behaviours in a team setting and (2) examine whether social loafing mediated the relation between equity orientation dimensions and profiles and performance-related behaviours.

With respect to the first purpose, I examined the relations among the equity orientation dimensions and performance-related behaviours (i.e., task performance, contextual performance and counterproductive behaviour). It was hypothesized that input orientation would be positively related to task performance and contextual performance, and negatively related to counterproductive behaviour. Correlational analyses across the two studies found support for a positive relation between input orientation and both task and contextual performance, suggesting that input oriented individuals are more likely to get their work done and to help teammates when working on a team setting. The relation with counterproductive behaviour, however, was less clear. Input orientation was found to negatively relate to counterproductive behaviour, but only in Study 4. In addition, the correlation between the two variables was weak, suggesting that counterproductive behaviour and input orientation may not have a strong direct relation. Outcome orientation, on the other hand, was hypothesized to be unrelated to the performance-related behaviours. These hypotheses were generally supported with outcome orientation being unrelated to contextual performance and counterproductive behaviour in both Study 3 and 4. Outcome orientation, however, was positively correlated to task performance in Study 3, but not in Study 4. Although the positive correlation was weak, further research is needed to understand whether this was a spurious effect.

In regards to the four equity orientation profiles, it was hypothesized that they would differ on all three performance-related behaviours. It was found that the equity profiles did differ significantly across self- and peer-reported task performance and contextual performance, with the peer-reported effect being replicated in Study 3 and 4. The equity orientation profiles, however, only differed significantly on self-reported

counterproductive behaviour, whereas peer-reported counterproductive behaviour did not differ significantly between profiles. More specifically, equity altruistics and equity enthusiasts were both high on task performance and contextual performance across all comparisons. Equity egoistics were rated as low on task and contextual performance across all comparisons. Equity apathetics, however, had scores that generally fell below the equity altruistics and equity enthusiasts and above the equity egoistics. In addition, the means scores in the equity apathetic profile were relatively similar to the means scores on the performance-related behaviours in their respective samples. It is worth noting that the four equity orientation profiles only differed on counterproductive behaviour when it was self-reported, with equity altruistics reporting they performed the fewest counterproductive behaviour and the other three profiles not demonstrating significant differences. This suggests that equity altruistics might perceive themselves as being helpful and contributing in their team. Their constant inputting, which they perceive as being helpful to the team, might actually be perceived as counterproductive if it continuously distracts the teammates and derails progress on a task. As a result, peers might perceive equity altruistic individuals as being just as likely as any other individual to be counterproductive. In sum, these results suggest that equity altruistics and equity enthusiasts perceive themselves, and are perceived by their peers (i.e., teammates), as better at completing their tasks and more likely to help other teammates. Equity egoistics, however, are perceived as individuals who do not complete their tasks and are less likely to help their teammates.

To further understand why these differences occurred among profiles, I examined whether social loafing was a mediating mechanism for the relations among input

orientation and the performance-related behaviours and for the mean differences among the four equity orientation profiles and the performance-related behaviours. It was hypothesized that input orientation would be negatively related to social loafing and outcome orientation would be unrelated. These hypotheses were supported across both self- and peer-reported social loafing suggesting that input oriented individuals were less likely to social loaf in a team setting. The mediation analysis revealed that the relation between input orientation and the performance-related behaviours was mediated by social loafing across self- and peer-reported social loafing and performance-related behaviours, respectively. It is worth noting, however, that the direct effects for input orientation with self- and peer-reported task performance were still significant, suggesting that social loafing is only one of the mechanisms through which input oriented individuals are more likely to successfully complete the tasks they are assigned. For contextual performance, the direct effect was still significant for self-reported social loafing and self-reported contextual performance, however, it was non-significant for peer-reported social loafing and peer-reported contextual performance. These results suggest that, although input oriented individuals believe that reduced social loafing is one of the reasons they are more likely to help others in the team, their teammates perceived them as more likely to help others strictly because they were less likely to social loaf. For counterproductive behaviour, the direct effect for input orientation on counterproductive behaviour was non-significant for both self- and peer-reports, suggesting that input oriented individuals were less likely to social loaf and, as a result, were less likely to act counterproductively in their respective teams.

For the four equity orientation profiles, it was hypothesized that they would differ significantly on social loafing. This hypothesis was supported with both self- and peer-reported social loafing. More specifically, it was found that equity altruistics and equity enthusiasts were the least likely to social loaf across self- and peer-reports, whereas equity egoistics were the most likely to social loaf. In addition, equity apathetics self-reported to be more likely to social loaf than equity altruistics, however, this finding was not supported with peer-reports, suggesting again that equity apathetics behaviours may be less noticed by their teammates. As previously discussed, the equity egoistics profile was selected to compare against because it scored the highest on social loafing. It was found that for self- and peer-reported social loafing, equity altruistics and equity enthusiasts were reported as performing better on tasks, performing more helping behaviours, and being less likely to be counterproductive in their teams in both self- and peer-reports. When investigating self-reported social loafing and self-reported performance-related behaviours for equity apathetics, they were found to not differ significantly from equity egoistics, suggesting that they were just as likely to perform worse on tasks, help teammates less, and act counterproductively in their team as the equity egoistics. When investigating with peer-reported social loafing and peer-reported performance-related behaviours, however, they did differ significantly, suggesting that equity apathetics were perceived by their peers as being less likely to social loaf and, as a result, perceived to perform better on their tasks, to help teammates more, and to be less counterproductive in their teams. Again, it was found that equity apathetics self-reported being more similar to equity egoistics in regards to social loafing and performance-related behaviours, whereas their peers reported them being more like equity altruistics

and equity enthusiasts in regards to the same behaviours. This is an intriguing finding that again suggests that equity apathetic behaviours may be going unobserved by their teammates. This is an intriguing finding that adds an interesting dynamic to the characteristics of the equity apathetic profile.

In sum, Phase 2 was able to provide criterion-related validity for the EOS. Replicated across two studies, and both self- and peer-reports, I found that equity orientation dimensions and profiles predicted performance-related behaviours in teams. In addition, these relations were mediated by individuals' self- and peer-reported social loafing. These results provide support for equity orientation being an important

CHAPTER 4: GENERAL DISCUSSION

The current investigation consisted of four studies conducted in two phases. The first phase focused on creating and validating a measure of equity orientation (i.e., input and outcome orientation) and developed the construct's nomological network. The second phase focused on applying the equity orientation construct to a social exchange and examining its criterion-related validity.

Overall, Phase 1 found that the HEXACO personality model's traits of Conscientiousness, Agreeableness and Honesty-Humility were robust predictors of input and outcome orientation. Further, the Dark Tetrad traits were also robust predictors of input and outcome orientation. In Phase 2, the input and outcome orientation traits were used to predict the performance-related behaviours of task performance, contextual performance and counterproductive behaviour. Further, social loafing was found to have an indirect effect on the relations among input orientation and the performance-related behaviours. In addition, across both Phase 1 and 2, I found evidence to support the existence of four equity orientation profiles across self- and peer-reports. It was also found that the profiles differed on many of the investigated personality traits and the performance-related behaviours. Moreover, social loafing mediated the relations among the equity orientation profiles and the performance-related behaviours. In sum, these studies contributed significantly to the research literature by addressing a gap in the measurement of individual differences in the perception of equity.

Research Implications

The current investigation has implications for a variety of research domains including: personality, work teams, organizational justice, job interviews, leader-follower

relationships and romantic relationships. The following sections will elaborate on how equity orientation can contribute to our understanding of each domain.

Personality

Although the results of the current investigation provided initial construct validation of the equity orientation construct, there are many other traits that could be examined to further our understanding of its nomological network. For example, social dominance orientation (SDO) is an interesting variable to examine in regards to equity orientation. SDO is an individual's preference for inequality among social groups; more specifically, an individual who is high on SDO desires that his or her in-group receives favourable treatment over any out-groups (Pratto, Sidanius, Stallworth & Malle, 1994). It could be argued that individuals who are high on SDO are more accepting of inequity, and therefore SDO might have interesting implications for understanding equity orientation. Further, considering that high SDO is related to dominance of an external group, one could theorize that these individuals might be more outcome oriented and less input oriented. In addition, examining how the means between equity orientation profiles differed on the SDO construct may produce some novel findings about both constructs.

Another interesting area of research would be to examine the relations between equity orientation and integrity tests. Integrity tests, which can be either overt or personality-based, are designed to measure whether an individual is willing to behave dishonestly (e.g., stealing or absenteeism). A variety of meta-analyses (e.g., Iddekinge, Roth, Raymark & Odle-Dusseau, 2012; Ones, Viswesvaran, & Schmidt, 1993) have been conducted on integrity tests to demonstrate their criterion-related validity. Overall, integrity tests have been found to predict the delinquent behaviours they were designed to

identify. Integrity tests, however, are a measure of a combination of behaviours (e.g., Conscientiousness and Honesty-Humility). Interestingly, some of the behaviours associated with integrity tests were found in the current investigation to be either positively related to input orientation (i.e., Conscientiousness) or negatively related to outcome orientation (Honesty-Humility). This suggests that integrity tests may contribute to understanding equity orientations nomological network.

Research should also be conducted to further add to the construct validity of the Equity Orientation Scale (EOS); more specifically, the discriminant of validity of the scale beyond what is currently measured with the existing equity sensitivity scales. Although I argued that equity sensitivity and equity orientation are very distinct constructs both theoretically and in measurement, it would be worth demonstrating this difference empirically. Comparing the Equity Preference Questionnaire (Sauley & Bedeian, 2000), the Equity Sensitivity Instruments (Huseman et al., 1985) and the EOS to the HEXACO and Dark Tetrad traits would contribute to demonstrate the discriminant validity of the EOS in comparison to the existing equity sensitivity measures.

Teams

The current investigation examined how equity orientation influenced performance-related behaviour in a team setting. The results suggest that equity orientation is important to understanding individuals' performance in a team. It is important to note, however, that how equity orientation relates to a *team's performance* as a whole was not investigated. The team composition literature has demonstrated that deep-level composition variables (e.g., personality) predict team performance, especially when examined at mean levels (Bell, 2007). Considering that equity orientation was

demonstrated herein to predict individual task and contextual performance in a team, it can be theorized that equity orientation may also have an effect on team performance.

Another interesting area of research is the role of equity orientation in understanding team conflict. Originally, the literature proposed that there are three types of team conflict: task conflict, relationship conflict and process conflict (Jehn, 1995; 1997). More recently, Behfar, Mannix, Peterson and Trochim (2010) proposed that process conflict was better understood by separating it into two types of conflict: logistical conflict and contribution conflict. Because input oriented individuals like putting forth effort and contributing, it is possible that a team that is high in input orientation would be more likely to offer and discuss ideas (i.e., task conflict) and less likely to have individuals who are not contributing (i.e., contribution conflict). A team that is high on outcome orientation, however, might be more likely to experience relationship conflict, especially if they perceive that the team might not achieve any rewards.

Equity orientation may also have important implications for understanding compensation in a team setting. More specifically, equity orientation may play a role in the effectiveness of a shared team reward (i.e., one that is shared equally amongst team members). Considering that outcome-oriented individuals are motivated by rewards, a team reward might have interesting effects on the behaviour of an outcome-oriented individual working in a team setting. Because team rewards are shared equally amongst team members and based on the team's performance as a whole, an outcome-oriented individual might change his or her behaviour depending on his or her expectations. For example, if the team is struggling and it looks like they need team members to 'step up'

to earn the team reward, an outcome-oriented individual would be motivated to help the team perform. On the other hand, if the team is performing well already and the team appears to be on track to earn the team reward, an outcome-oriented individual may be likely to free ride, which is an issue with team rewards (Welbourne & Gomez-Mejia, 2000).

Organizational justice

Organizational justice is referred to as individuals' subjective perception of fairness in organizations (Greenberg, 1987). Considering that equity orientation measures individual differences in perceptions of equity (i.e., fairness), it is understandable that equity orientation would have important implications for research in this domain. There are three dimensions of organizational justice: distributive justice, procedural justice and interactional justice. Although these three dimensions have been demonstrated to moderately related to each other, they still predict unique variance in workplace behaviours and outcomes (Colquitt, Conlon, Wesson, Porter & Ng, 2001). Distributive justice – which is also based on Adams' (1963; 1965) equity theory – is referred to as the perception of fairness in how rewards and/or resources are distributed (Homans, 1961). It is possible that individuals who have a strong desire to be rewarded (i.e., outcome oriented) are more likely to be sensitive to distributive injustice than individuals who are not outcome oriented. Further, procedural justice is referred to as the perception of fairness in the policies and/or procedures that lead to the distribution of rewards and/or resources (Leventhal, 1980). Although procedural justice focuses more on the decision-making behind the distribution of rewards/resources, it still influences how rewards/resources are distributed. As a result, outcome oriented individuals are more

likely to be sensitive to procedural injustice because it would have a negative impact on the outcomes they would receive. Further, interactional justice is referred to as perceptions of fairness in how respectfully outcomes and procedures are communicated (Bies & Moag, 1986). Again, considering that outcomes play an important role in this perception of fairness, individuals who are more outcome oriented are likely to be more sensitive to interactional injustice. In sum, across all three types of organizational justice, outcome orientation can be theorized as being important to understanding how individuals might differ in their reactions to organizational injustice.

Job interviews

An interesting social exchange context that equity orientation may play a role is the job interview. Job interviews are the most common selection tool used in the workplace (Posthuma, Morgeson & Campion, 2002) and are highly evaluative (Heimberg, Keller & Peca-Baker, 1986). From a social exchange perspective, the interviewer is trying to get the applicant to share information about his or her ability to perform well on the job. It is important, therefore, for the applicant to share (i.e., input) information with the interviewer as much as possible. As a result, an input oriented individual should, theoretically speaking, perform better in a job interview. It is worth noting, however, that the job interview is evaluative because of the associated outcome: getting hired for the job. This suggests that an outcome-oriented individual might also be motivated by the external reward of receiving a position from the job interview, especially if the job is highly rewarding (e.g., a higher salary position). Further, an outcome-oriented individual might be more willing to do whatever it takes to get the job, including using self-presentation tactics (e.g., impression management), which have been

demonstrated to lead to higher interview performance (Barrick, Shaffer & DeGrassi, 2009). Overall, equity orientation may play a key role in understanding how individuals behave in job interviews and detecting whether certain individuals are more likely to engage in self-presentation tactics.

Leadership

Equity orientation may also have important implications for how leadership is understood in the workplace. Leaders often exchange in social exchanges with their followers, which are referred to as leader-member exchanges (LMX)(Graen & Scandura, 1987). In fact, LMX theory is predominately based on understanding social exchange theory from a leadership perspective (Sparrowe & Liden, 1997). LMX does not focus on the specific behaviours of either the leader or the follower; rather, LMX focuses on the quality of the relationship between the leader and the follower. High-quality LMX relationships result in increased effort from the follower and increased outcomes for both the leader and the follower, whereas low-quality LMX relationships result in decreased effort and fewer outcomes for both the leader and the follower. Meta-analytic research, however, has only found a moderate correlation between leaders' and followers' perceptions of LMX quality. These results could be the result of leaders and followers having differing in equity orientation. For example, an outcome-oriented follower might perceive their LMX as low quality because they do not receive many outcomes, whereas the leader might perceive the LMX as high quality because they are not outcome oriented. A similar disturbance in the LMX relationship can be theorized by swapping outcome orientation for input orientation in the example provided. Thus, equity

orientation may play an important role in understanding the relationship between leaders and their followers.

Romantic relationships

To this point, I have only discussed social exchanges that take place in the workplace. Equity orientation, however, was not theorized as a construct that is relevant only to the workplace. Indeed, equity orientation was theorized as being important to all social exchange situations, including romantic relationships. A review of the romantic relationship literature is beyond the scope of this paper; however, previous research has demonstrated that equity and social exchange theory play an important role in understanding romantic relationships (e.g., Sedikides, Oliver & Campbell, 1994; Sprecher, 2001). Equity orientation may therefore play an important role in furthering our understanding of romantic relationships. Possibly, an outcome oriented individual might be unsatisfied in a relationship with another outcome oriented individual because they will both be fighting to get from each other and less willing to give; however, if an outcome oriented individual was in a relationship with an input oriented individual, they might be more satisfied because she or he is getting a lot from the input oriented individual without having to give to her or his partner. In sum, equity orientation theory could have important implications for the study of romantic relationships.

Practical Implications

Results of the current investigation also have implications for practice. Although these findings require further validation, it seems reasonable to suggest that they provide suggestions for employee motivation, recruitment and selection, and leading work teams.

The following sections will discuss how an understanding of equity orientation could influence practice in organizations.

Employee management

One of the key findings of the current investigation is that some individuals are input oriented, whereas others are outcome oriented. Further, some individuals can be high or low on both input and outcome orientation, as was demonstrated with the equity orientation profiles. These findings may be important for managing and motivating individuals in the workplace. For example, a manager might want to know that, for some employees, earning incentives and rewards are what an employee desires. For these individuals a manager can therefore use incentives and rewards to motivate an employee to perform and rewards might play an important role in those employees' work attitudes. Other employees, however, might not be outcome oriented, so incentives and rewards will not be effective management tools; rather, these employees may be input oriented. For such individuals it might be important to create an environment wherein they feel free to act on their internal desire to contribute.

Recruitment and selection

Another key finding of the current investigation is that equity orientation has important implications for how an individual may behave in a team setting. Therefore, although a great more work would be required to support this, when recruiting and selecting individuals to work in a team, the equity orientation of the candidates might be worth considering. Selecting the right individuals for a team can play an integral role in setting up a team for success as the research on team composition has demonstrated (Bell, 2007). It was found in the current investigation that input oriented individuals are more

likely to complete the tasks they are assigned and to help other teammates. Moreover, input oriented individuals are also less likely to social loaf in their team. These results suggest that when selecting individuals for a team, their equity orientation should be considered.

Leading work teams

In many situations, it might not be possible for a leader to recruit and select individuals for a team; rather, leaders may have to work with the team members that they are given. As a result, they might get an assortment of employees on a team that vary in levels of input and outcome orientation, or fit into the different equity orientation profiles. In situations such as this, it is important for teams to have effective leadership to maximize their performance. It is therefore important for a leader to recognize individual differences and to manage them appropriately. It was found in the current investigation that individuals who are less input oriented are more likely to social loaf in a team setting, resulting in poorer task and contextual performance and increased counterproductive behaviour. Thus, if a leader can identify and monitor team members who are less input oriented, the leader should try to motivate those individuals to contribute to potentially reduce conflict in the team.

Although there are many important implications for both research and practice from the current investigation, the findings are not without limitations. The following section will discuss these limitations and how future research may be able to address them.

Limitations and Future Directions

The current investigation has a few limitations. First, Study 1, 3, and 4 relied on self-reported equity orientation. This could be an issue because, as demonstrated with the peer-reported equity orientation in Study 2, the equity orientation profiles of equity egoistic and equity apathetic have much higher membership, suggesting that individuals might be biased when self-reporting their equity orientation. In addition, the smaller membership increased the standard error for each profile, making it harder to find significant differences between profiles even when means appeared relatively different. On the other hand, there was low convergent validity between self- and peer-reported equity orientation. As explained previously, it may be difficult to accurately assess another's internal desires, making the validity of peer-reports of equity orientation unclear. Despite these limitations, the findings were very similar across self- and peer-reports, indicating that, although membership might have varied across self- and peer-reports, the findings were still consistent across rater sources. Nonetheless, I recommend that future research investigate the validity of both self- and peer-reports of equity orientation.

A second limitation of the current investigation is the use of student samples. Research has demonstrated that personality does not stabilize until around age 30 (e.g., Terracciano, Costa Jr. & McCrae, 2006; Terracciano, McCrae & Costa Jr., 2010). The student responses, therefore, may be more susceptible to state specific influences (e.g., their experience that day in Study 1 and 2, or their experiences in their teams in Study 3 and 4), which can confound results, especially when measured at the same time (Podsakoff et al., 2003). In addition, the use of student teams may limit the ability to

generalize the current findings to actual work teams in organization. However, Highhouse and Gillespie (2009) argued that, for construct validation and similar research endeavours, student samples are both practical and useful. Further, Highhouse and Gillespie (2009) argued that there is a lack of research evidence demonstrating that behaviours in student samples do not generalize to behaviour in the workplace. With that being said, further research should examine the relations of equity sensitivity in an older sample to investigate whether the results are replicated when personality becomes more stable. Moreover, the use of actual work teams would also further corroborate the findings found in the current investigation.

Third, the EOS may be susceptible to socially desirable responding. Social desirability responding occurs when individuals respond to questionnaires such that they present themselves in a favourable manner (Zerbe & Paulhus, 1987). Paulhus (1984) provided evidence that distinguished between two types of social desirable responding: impression management and self-deception. Impression management occurs when individuals consciously changes their responses to be perceived more favourably, whereas self-deception is subconscious and individuals are unaware of their biased responding. Both equity orientation dimensions, I argue, could be susceptible to socially desirable responding because being input oriented and not outcome oriented is a socially desirable characteristics. The results regarding narcissism in Study 1 and 2 draw support for self-deception occurring with the EOS, as narcissism was positively related to input orientation with self-reports and unrelated with peer-reports. In addition, self-reported equity orientation consistently demonstrated lower membership in the equity egoistic profile, whereas peer-reported equity orientation demonstrated a much larger number of

individuals in this profile. Nevertheless, despite this limitation, the results of the current investigation were consistent with the proposed theory and results were generally consistent across both self and peer-reports. It can therefore be concluded that the socially desirable response bias notwithstanding, self-reports are still a valid method for measuring equity orientation. I again recommend, however, that future research tries to use peer-reports of equity orientation when possible. In addition, future research could use expert raters to observe and rate individuals on how input and outcome oriented they are as they perform a group activity, such as a dynamic design-making activity (e.g., Network Fire Chief; Omodei & Wearing, 1995) or during a risk-taking task.

Fourth, although the four-profile solution was selected in all studies, the modification indices (e.g., low entropy in Study 3 and 4) in some studies were below recommended levels (Nylund, Asparouhov & Muthén, 2007). In addition, the visual shape of the four profiles was not identical across all investigations (i.e., they differed from Phase 1 to Phase 2). Nevertheless, there were strong theoretical reasons for making this decision, which has been argued to be the most important factor when making decisions about the appropriate number of profiles (Marsh, Ludtke, Trautwein & Morin, 2009; Muthén, 2003). Therefore, even though the modifications indices for the four-profile model had some limitations, and the profiles were not completely identical across all studies, the findings for the four-profile model were consistent with the proposed theory and were replicated across studies and rating sources. It is therefore recommended that future research using the EOS continue to consider the four-profile model as the most appropriate solution unless otherwise theorized.

Finally, the correlations between input and outcome orientation were inconsistent across the four studies. In Study 1 and 2, a small, *negative* correlation was found between input and outcome orientation, whereas in Study 3 and 4, a small, *positive* correlation was found between the two equity orientation dimensions. It was theorized that input and outcome orientation would be unrelated to each other; however, this was clearly not supported in the current investigation. Further, the direction of the correlation differed between the first two studies compared to the latter two. This finding was unexpected, and further research with the equity orientation dimensions is required to develop a better understanding of their true interrelations.

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Appendix A



Research Ethics

Use of Human Participants - Initial Ethics Approval Notice

Principal Investigator: Prof. Jim Olson
 File Number: 104206
 Review Level: Delegated
 Protocol Title: Mass Testing
 Department & Institution: Social Science/Psychology, Western University
 Sponsor:
 Ethics Approval Date: October 01, 2013 Expiry Date: April 30, 2014

Documents Reviewed & Approved & Documents Received for Information:

Document Name	Comments	Version Date
Western University Protocol		2013/09/05
Response to Board Recommendations		
Instruments	Survey Items	
Revised Letter of Information & Consent		
Recruitment Items	Poster	
Instruments	Feedback	
Response to Board Recommendations		
Response to Board Recommendations		
Recommendations Form	Recommendations	2013/09/16

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above named research study on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussions related to, nor vote on, such studies when they are presented to the NMREB.

The Chair of the NMREB is Dr. Riley Hinson. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



Ethics Officers to Contact for Further Information

<input type="checkbox"/> Gwae Kelly gwae.kelly@uwo.ca	<input checked="" type="checkbox"/> Vicki Tom vtom@uwo.ca	<input type="checkbox"/> Ernie Basko ebasko@uwo.ca
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This is an official document. Please retain the original in your files.

Appendix B

Big Five (Goldberg et al., 2006)**Scale:**

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Instructions:

In the following section, you will see statements that might be used to describe a person. Please read each statement carefully and decide how accurately it describes you using the following rating scale:

Items:

1. I rarely get irritated.
2. I feel comfortable around people.
3. I am not interested in abstract ideas.
4. I have a good word for everyone.
5. I waste my time.
6. I often feel blue.
7. I have little to say.
8. I believe in the importance of art.
9. I have a sharp tongue.
10. I am always prepared.
11. I seldom feel blue.
12. I make friends easily.
13. I do not like art.
14. I believe that others have good intentions.
15. I find it difficult to get down to work.
16. I dislike myself.
17. I keep in the background.
18. I have a vivid imagination.
19. I cut others to pieces.
20. I pay attention to details.
21. I feel comfortable with myself.
22. I am skilled in handling social situations.
23. I avoid philosophical discussions.
24. I respect others.
25. I do just enough work to get by.
26. I am often down in the dumps.
27. I would describe my experiences as somewhat dull.
28. I tend to vote for liberal political candidates.
29. I suspect hidden motives in others.
30. I get chores done right away.
31. I am not easily bothered by things.

32. I am the life of the party.
33. I do not enjoy going to art museums.
34. I accept people as they are.
35. I don't see things through.
36. I have frequent mood swings.
37. I don't like to draw attention to myself.
38. I carry the conversation to a higher level.
39. I get back at others.
40. I carry out my plans.
41. I am very pleased with myself.
42. I know how to captivate people.
43. I tend to vote for conservative political candidates.
44. I make people feel at ease.
45. I shirk my duties.
46. I panic easily.
47. I don't talk a lot.
48. I enjoy hearing new ideas.
49. I insult people.
50. I make plans and stick to them.

Scoring:

Conscientiousness: 5R, 10, 15R, 20, 25R, 30, 35R, 40, 45R, 50.

Agreeableness: 4, 9R, 14, 19R, 24, 29R, 34, 39R, 44, 49R.

Neuroticism: 1R, 6, 11R, 16, 21R, 26, 31R, 36, 41R, 46.

Openness to experience: 3R, 8, 13R, 18, 23R, 28, 33R, 38, 43R, 48.

Extraversion: 2, 7R, 12, 17R, 22, 27R, 32, 37R, 42, 47R.

Honesty-Humility (Ashton & Lee, 2009)

Scale:

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Instructions:

Please read each statement and decide how much you agree or disagree with that statement using the scale provided.

Items:

1. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
2. If I want something from someone, I will laugh at that person's worst jokes. R
3. I wouldn't pretend to like someone just to get that person to do favours for me.
4. If I knew that I could never get caught, I would be willing to steal a million dollars. R
5. I would never accept a bribe, even if it were very large.
6. I'd be tempted to use counterfeit money, if I were sure I could get away with it. R
7. Having a lot of money is not especially important to me.
8. I would get a lot of pleasure from owning expensive luxury goods. R
9. I think that I am entitled to more respect than the average person is. R
10. I want people to know that I am an important person of high status. R

Scoring:

Honesty-Humility: 1, 2R, 3, 4R, 5, 6R, 7, 8R, 9R, 10R.

Dark Triad (Paulhus & Jones, 2011)

Scale:

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Instructions:

Please rate the degree to which you agree with the following statements using the scale provided.

Items:

1. It's not wise to tell your secrets.
2. Generally speaking, people won't work hard unless they have to.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people because they don't need to know.
8. Make sure your plans benefit you, not others.
9. Most people are suckers.
10. Most people deserve respect.
11. People see me as a natural leader.
12. I hate being the centre of attention.
13. Many group activities tend to be dull without me.
14. I know that I am special because everyone keeps telling me so.
15. I like to get acquainted with important people.
16. I feel embarrassed if someone compliments me.
17. I have been compared to famous people.
18. I am an average person.
19. I insist on getting the respect I deserve.
20. I like to get revenge on authorities.
21. I avoid dangerous situations.
22. Payback needs to be quick and nasty.
23. People often say I'm out of control.
24. It's true that I can be cruel.
25. People who mess with me always regret it.
26. I have never gotten into trouble with the law.
27. I like to pick on losers.
28. I'll say anything to get what I want.

Scoring:

Machiavellianism: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10R.

Narcissism: 11, 12R, 13, 14, 15, 16R, 17, 18R, 19.

Psychopathy: 20, 21R, 22, 23, 24, 25, 26R, 27, 28.

Equity Orientation

Scale:

Completely Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Completely Agree
1	2	3	4	5	6	7

Instructions: Using the scale provided, please indicate your level of agreement or disagreement with each of the following statements.

Items:

Input Orientation

1. I am someone who puts in a lot of effort.
2. I always try to give my all.
3. I am constantly trying to minimize how much work I have to do. R
4. I am always finding ways to contribute.
5. I like to do as much as I can.
6. Ideally, I'd prefer to sit back while others do the work. R
7. I am known as someone who always contributes.
8. I try to help those around me.
9. I can be lazy at times. R
10. I often volunteer to take on more responsibilities
11. I frequently offer my assistance to others.
12. I do not like when I have to do more than the bare minimum. R
13. I give more than others around me.
14. Those who know me well would refer to me as a giver.
15. I try to do as little as possible. R
16. I am frequently referred to as a hard worker.

Outcome Orientation

1. The compensation I receive for my actions is important to me.
2. I want to be rewarded for the work I complete.
3. Generally, compensation is not what motivates my behaviour. R
4. I base my decisions on the outcomes I will receive.
5. I find knowing what I will get in return for my efforts motivates me.
6. What I get out of situations is of little importance to me. R
7. My actions are dictated by what I will get for them.
8. I tend not to act until I know what is in it for me.
9. I am rarely concerned with how I will personally benefit from a situation. R
10. I put a lot of weight on personal gains and/or benefits when making decisions.
11. When someone asks me for something, I think or say "what is in this for me?"
12. I tend not to be motivated by external rewards. R
13. The rewards for my behaviour are very important to me.
14. Outcomes (e.g., bonuses, rewards, or accolades) are a major source of motivation for me.

15. I do not worry about receiving rewards or benefits for my efforts. R
16. I try to get as much as I can in life.

Scoring:

Input orientation: 1, 4, 5, 7, 11, 13.

Outcome orientation: 2, 4, 9R, 10, 13, 15R.

Appendix C



Research Ethics

**Western University Non-Medical Research Ethics Board
NMREB Delegated Initial Approval Notice**

Principal Investigator: Prof. Natalie Allen
Department & Institution: Social Science/Psychology, Western University

NMREB File Number: 108381
Study Title: Peer Ratings of Personality (2016)
Sponsor: Social Sciences and Humanities Research Council

NMREB Initial Approval Date: September 02, 2016
NMREB Expiry Date: September 02, 2017

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Western University Protocol	Received September 1, 2016	
Recruitment Items	SONA Ad	2016/08/10
Instruments	Survey - Received August 20, 2016	
Other	Debriefing	2016/08/20
Letter of Information & Consent		2016/09/02

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Ethics Officer, on behalf of Dr. RILEY HINSON, NMREB Chair or delegated board member

Ethics Officer: Erika Basile ___ Nicole Kaniki ___ Grace Kelly ___ Katelyn Harris ___ Vikki Tran Karen Gopaul ___

Appendix D

HEXACO (de Vries, 2013)**Scale:**

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Self-rating instructions:

Please circle the number indicating how much you agree with each statement.

Self-rating items:

1. I can look at a painting for a long time.
2. I make sure that things are in the right spot.
3. I remain unfriendly to someone who was mean to me.
4. Nobody likes talking to me.
5. I am afraid of feeling pain.
6. I find it difficult to lie.
7. I think science is boring.
8. I postpone complicated tasks as long as possible.
9. I often express criticism.
10. I easily approach strangers.
11. I worry less than others.
12. I would like to know how to make lots of money in a dishonest manner.
13. I have a lot of imagination.
14. I work very precisely.
15. I tend to quickly agree with others.
16. I like to talk with others.
17. I can easily overcome difficulties on my own.
18. I want to be famous.
19. I like people with strange ideas.
20. I often do things without really thinking.
21. Even when I'm treated badly, I remain calm.
22. I am seldom cheerful.
23. I have to cry during sad or romantic movies.
24. I am entitled to special treatment.

Peer-rating instructions:

Please select the number that best represents how you feel each statement describes your peer using the scale provided.

Peer-rating items:

1. He/she can look at a painting for a long time.
2. He/she makes sure that things are in the right spot.

3. He/she remains unfriendly to someone who was mean to him/her.
4. Nobody likes talking to him/her.
5. He/she is afraid of feeling pain.
6. He/she finds it difficult to lie.
7. He/she thinks science is boring.
8. He/she postpones complicated tasks as long as possible.
9. He/she often expresses criticism.
10. He/she easily approaches strangers.
11. He/she worries less than others.
12. He/she would like to know how to make lots of money in a dishonest manner.
13. He/she has a lot of imagination.
14. He/she works very precisely.
15. He/she tends to quickly agree with others.
16. He/she likes to talk with others.
17. He/she can easily overcome difficulties on his/her own.
18. He/she wants to be famous.
19. He/she likes people with strange ideas.
20. He/she often does things without really thinking.
21. Even when he/she is treated badly, he/she remains calm.
22. He/she is seldom cheerful.
23. He/she has to cry during sad or romantic movies.
24. He/she is entitled to special treatment.

Scoring:

Honesty-Humility: 6, 12R, 18R, 24R.

Emotionality: 5, 11R, 17R, 23.

eXtraversion: 4R, 10, 16, 22R.

Agreeableness: 3R, 9R, 15, 21.

Conscientiousness: 2, 8R, 14, 20R.

Openness to Experience: 1, 7R, 13, 19.

Dark Tetrad (Buckels et al., 2013)

Scale:

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Self-rating instructions:

Please circle the number indicating how much you agree with each statement.

Self-rating items:

1. It's not wise to tell your secrets.
2. I like to use clever manipulation to get my way.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people to preserve your reputation.
8. Make sure your plans benefit yourself, not others.
9. Most people can be manipulated.
10. People see me as a natural leader.
11. I hate being the centre of attention.
12. Many group activities tend to be dull without me.
13. I know that I am special because everyone keeps telling me so.
14. I like to get acquainted with important people.
15. I feel embarrassed if someone compliments me.
16. I have been compared to famous people.
17. I am an average person.
18. I insist on getting the respect I deserve.
19. I like to get revenge on authorities.
20. I avoid dangerous situations.
21. Payback needs to be quick and nasty.
22. People often say I'm out of control.
23. It's true that I can be mean to others.
24. People who mess with me always regret it.
25. I have never gotten into trouble with the law.
26. I enjoy having sex with people I hardly know.
27. I'll say anything to get what I want.
28. I enjoy hurting people.
29. I would never purposely humiliate someone.
30. I was purposely mean to some people in high school.
31. I enjoy hurting my partner during sex (or pretending to).
32. I dominate others using fear.
33. I enjoy seeing people suffer.

34. There's nothing as enjoyable as helping someone in need.

Peer-rating instructions:

Please select the number that best represents how you feel each statement describes your peer using the scale provided.

Peer-rating items:

1. He/she believes it's not wise to tell his/her secrets.
2. He/she likes to use clever manipulation to get his/her way.
3. He/she believes that, whatever it takes, he/she must get the important people on his/her side.
4. He/she avoids direct conflict with others because they may be useful in the future.
5. He/she believes it's wise to keep track of information that he/she can use against people later.
6. He/she believes you should wait for the right time to get back at people.
7. He/she believes there are things he/she should hide from other people to preserve his/her reputation.
8. He/she makes sure his/her plans benefit him/herself, not others.
9. He/she believes that most people can be manipulated.
10. He/she believes people see him/her as a natural leader.
11. He/she hates being the centre of attention.
12. He/she believes that many group activities tend to be dull without him/her.
13. He/she believes that he/she is special because "everyone keeps telling me so".
14. He/she likes to get acquainted with important people.
15. He/she feels embarrassed if someone compliments him/her.
16. He/she believes he/she is often compared to famous people.
17. He/she believes he/she is an average person.
18. He/she insists on getting the respect he/she believes he/she deserve.
19. He/she likes to get revenge on authorities.
20. He/she avoids dangerous situations.
21. He/she believes that payback needs to be quick and nasty.
22. People often say he/she is out of control.
23. It's true that he/she can be mean to others.
24. He/she believes that people who mess with him/her will always regret it.
25. He/she has never gotten into trouble with the law.
26. He/she enjoys having sex with people he/she hardly knows.
27. He/she will say anything to get what he/she wants.
28. He/she enjoys hurting people.
29. He/she would never purposely humiliate someone.
30. He/she was purposely mean to some people in high school.
31. He/she enjoys hurting his/her partner during sex (or pretending to).
32. He/she dominates others using fear.
33. He/she enjoys seeing people suffer.
34. He/she believes there's nothing as enjoyable as helping someone in need.

Scoring:

Machiavellianism: 1, 2, 3, 4, 5, 6, 7, 8, 9.

Narcissism: 10, 11R, 12, 13, 14, 15R, 16, 17R, 18.

Psychopathy: 19, 20R, 21, 22, 23, 24, 25R, 26, 27.

Sadism: 28, 29R, 30, 31, 32, 33, 34R.

Equity Orientation

Scale:

Completely Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Completely Agree
1	2	3	4	5	6	7

Self-rating instructions:

Please select the number that best represents your agreement with each statement

Self-rating items:

1. I am someone who puts in a lot of effort
2. I am always finding ways to contribute
3. I like to do as much as I can
4. I am known as someone who always helps
5. I frequently offer my assistance to others
6. I give more than others around me
7. I want to be rewarded for the work I complete
8. I base my decisions on the outcomes I will receive
9. I am rarely concerned with how I will personally benefit from a situation
10. I put a lot of weight on personal gains and/or benefits when making decisions
11. The rewards for my behaviour are very important to me
12. I do not worry about receiving rewards or benefits for my efforts

Peer-rating instructions:

Please select the number that best represents how you feel each statement describes your peer using the scale provided.

Peer-rating items:

1. He/she is someone who puts in a lot of effort
2. He/she is always finding ways to contribute
3. He/she likes to do as much as he/she can
4. He/she is known as someone who always helps
5. He/she frequently offer his/her assistance to others
6. He/she gives more than others around him/her
7. He/she want to be rewarded for the work he/she completes
8. He/she bases his/her decisions on the outcomes he/she will receive
9. He/she is rarely concerned with how he/she will personally benefit from a situation
10. He/she puts a lot of weight on personal gains and/or benefits when making decisions
11. The rewards for his/her behaviour are very important to him/her
12. He/she does not worry about receiving rewards or benefits for his/her efforts

Scoring:

Input orientation: 1, 2, 3, 4, 5, 6.

Outcome orientation: 7, 8, 9R, 10, 11, 12R

Appendix E



Department of Psychology The University of Western Ontario
 Room 7418 Social Sciences Centre,
 London, ON, Canada N6A 5C1
 Telephone: (519) 661-2067 Fax: (519) 661-3981

Use of Human Subjects - Ethics Approval Notice

Review Number	13 07 09	Approval Date	13 07 24
Principal Investigator	Natalie Allen	End Date	14 04 30
Protocol Title	Understanding engineering project teams 2113-14 (Part 1)		
Sponsor	n/a		

This is to notify you that The University of Western Ontario Department of Psychology Research Ethics Board (PREB) has granted expedited ethics approval to the above named research study on the date noted above.

The PREB is a sub-REB of The University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario. (See Office of Research Ethics web site: <http://www.uwo.ca/research/ethics/>)

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the University's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the PREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of research assistant, telephone number etc). Subjects must receive a copy of the information/consent documentation.

Investigators must promptly also report to the PREB:

- changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- all adverse and unexpected experiences or events that are both serious and unexpected;
- new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to the PREB for approval.

Members of the PREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the PREB.


 Clive Seligman Ph.D.

Chair, Psychology Expedited Research Ethics Board (PREB)

The other members of the 2012-2013 PREB are: Mike Atkinson (Introductory Psychology Coordinator), Rick Goffin, Riley Hinson Albert Katz (Department Chair), Steve Lupker, and Adam Piraino (Graduate Student Representative)

CC: UWO Office of Research Ethics

This is an official document. Please retain the original in your files



Use of Human Participants - Ethics Approval Notice

Principal Investigator: Prof. Natalie Allen
File Number: 104533
Review Level: Delegated
Protocol Title: Understanding engineering project teams 2113-14 (Part 1)
Department & Institution: Social Science/Psychology, Western University
Sponsor:
Ethics Approval Date: October 28, 2013 **Expiry Date:** April 30, 2014

Documents Reviewed & Approved & Documents Received for Information:

Document Name	Comments	Version Date
Other	Approved Ethics Form (Psychology Expedited Review)	
Instruments	Questionnaires	

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussions related to, nor vote on, such studies when they are presented to the NMREB.

The Chair of the NMREB is Dr. Riley Hinson. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Signature

Ethics Officer to Contact for Further Information

<input checked="" type="checkbox"/> Grace Kelly (grace.kelly@uwo.ca)	<input type="checkbox"/> Vikki Tran (vikki.tran@uwo.ca)	<input type="checkbox"/> Erika Basile (ebasile@uwo.ca)
-------------------------------------------------------------------------	------------------------------------------------------------	-----------------------------------------------------------

This is an official document. Please retain the original in your files.



Use of Human Participants - Ethics Approval Notice

Principal Investigator: Prof. Natalie Allen
File Number: 104533
Review Level: Delegated
Protocol Title: Understanding engineering project teams 2113-14 (Part 1)
Department & Institution: Social Science/Psychology, Western University
Sponsor:
Ethics Approval Date: March 20, 2014 **Expiry Date:** April 30, 2014

Documents Reviewed & Approved & Documents Received for Information:

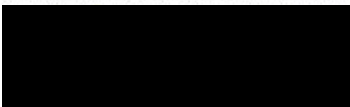
Document Name	Comments	Version Date
Instruments	Questionnaires	
Western University Protocol		2014/03/14

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussions related to, nor vote on, such studies when they are presented to the NMREB.

The Chair of the NMREB is Dr. Riley Hinson. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

**Ethics Officer to Contact for Further Information**

<input checked="" type="checkbox"/> Grace Kelly (grace.kelly@uwo.ca)	<input type="checkbox"/> Vikki Tran (vikki.tran@uwo.ca)	<input type="checkbox"/> Mina Mekhail (mmekhail@uwo.ca)	<input type="checkbox"/> Erika Basile (ebasile@uwo.ca)
-------------------------------------------------------------------------	------------------------------------------------------------	------------------------------------------------------------	-----------------------------------------------------------

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Appendix F

Equity Orientation**Scale:**

Completely Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Completely Agree
1	2	3	4	5	6	7

Instructions:

Please select the number that best represents your agreement with each statement

Items:

1. I am someone who puts in a lot of effort.
2. I am always finding ways to contribute.
3. I like to do as much as I can.
4. I am known as someone who always helps.
5. I frequently offer my assistance to others.
6. I give more than others around me.
7. I want to be rewarded for the work I complete.
8. I base my decisions on the outcomes I will receive.
9. I am rarely concerned with how I will personally benefit from a situation.
10. I put a lot of weight on personal gains and/or benefits when making decisions.
11. The rewards for my behaviour are very important to me.
12. I do not worry about receiving rewards or benefits for my efforts.

Scoring:

Input orientation: 1, 2, 3, 4, 5, 6.

Outcome orientation: 7, 8, 9R, 10, 11, 12R

Performance-related Behaviours

Scale:

Never	Rarely	Once in a while	Sometimes	Often	Frequently	Always
1	2	3	4	5	6	7

Instructions:

Please rate your group members (but not yourself) on the following items. Fill his or her **first name** in the space below.

To what extent does _____ (team member's first name and last initial)...

Task Performance (Van Dyne & LePine, 1998)

Items:

1. ...complete work on time?
2. ...successfully perform assigned tasks?
3. ...produce quality work that meets performance expectations?

Contextual Performance (Lee & Allen, 2002)

Items:

4. ...help others who have been absent?
5. ...willingly give time to help others who have project-related problems?
6. ...assist others with their duties?

Counterproductive Behaviour

Items:

7. ...engage in activities that derail the team's progress on the project?
8. ...miss team meetings for unnecessary reasons?
9. ...distract team members during team meetings?
10. ...treat team members with disrespect?

Scoring:

Task performance: 1, 2, 3.

Contextual performance: 4, 5, 6.

Counterproductive behaviour: 7, 8, 9, 10.

Appendix G



**Western
Research**

Research Ethics

**Western University Health Science Research Ethics Board
NMREB Delegated Initial Approval Notice**

Principal Investigator: Prof. Natalie Allen
Department & Institution: Social Science/Psychology, Western University

NMREB File Number: 105553
Study Title: Understanding Engineering Project Teams (2014-2015)
Sponsor:

NMREB Initial Approval Date: August 26, 2014
NMREB Expiry Date: April 30, 2015

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Instruments	Teambuilding Activity - NASA Survival on the Moon Task	
Instruments	Measures	
Revised Letter of Information & Consent	Revised Letter of Information	2014/08/14
Revised Western University Protocol	Clean pdf version of Amended Western Protocol	2014/08/14

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the HSREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of HSREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



Ethics Officer to Contact for Further Information

<input type="checkbox"/> Erika Basile ebasile@uwo.ca	<input checked="" type="checkbox"/> Grace Kelly grace.kelly@uwo.ca	<input type="checkbox"/> Mira Mekhal mmekhal@uwo.ca	<input type="checkbox"/> Vikki Tran vikki.tran@uwo.ca
---------------------------------------------------------	-----------------------------------------------------------------------	--------------------------------------------------------	----------------------------------------------------------

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Research Ethics

**Western University Non-Medical Research Ethics Board
NMREB Amendment Approval Notice**

Principal Investigator: Prof. Natalie Allen
Department & Institution: Social Science\Psychology, Western University

NMREB File Number: 105553
Study Title: Understanding Engineering Project Teams (2014-2015)
Sponsor:

NMREB Revision Approval Date: November 14, 2014
NMREB Expiry Date: April 30, 2015

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Instruments	New questionnaire items	2014/10/27

The Western University Non-Medical Science Research Ethics Board (NMREB) has reviewed and approved the amendment to the above named study, as of the NMREB Amendment Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941



Ethics Officer to Contact for Further Information

<input type="checkbox"/> Erika Basile ebasile@uwo.ca	<input checked="" type="checkbox"/> Grace Kelly grace.kelly@uwo.ca	<input type="checkbox"/> Mina Mekhal mmekhal@uwo.ca	<input type="checkbox"/> Vikki Tran vikki.tran@uwo.ca
---------------------------------------------------------	-----------------------------------------------------------------------	--------------------------------------------------------	----------------------------------------------------------

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Western
Research

Research Ethics

Western University Non-Medical Research Ethics Board
NMREB Amendment Approval Notice

Principal Investigator: Prof. Natalie Allen
Department & Institution: Social Science/Psychology, Western University

NMREB File Number: 105553
Study Title: Understanding Engineering Project Teams (2014-2015)
Sponsor:

NMREB Revision Approval Date: March 10, 2015
NMREB Expiry Date: August 26, 2015

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Letter of Information Addendum	Addendum to the LOI	2015/02/05
Instruments	Questionnaire	2015/02/04

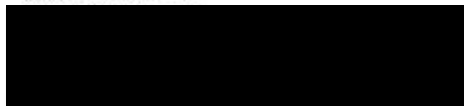
The Western University Non-Medical Science Research Ethics Board (NMREB) has reviewed and approved the amendment to the above named study, as of the NMREB Amendment Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



Ethics Officer to Contact for Further Information

<input type="checkbox"/> Erika Basile ebasile@uwo.ca	<input checked="" type="checkbox"/> Grace Kelly grace.kelly@uwo.ca	<input type="checkbox"/> Mina Mekhail mmekhail@uwo.ca	<input type="checkbox"/> Vikki Tran vikki.tran@uwo.ca
---------------------------------------------------------	-----------------------------------------------------------------------	----------------------------------------------------------	----------------------------------------------------------

This is an official document. Please retain the original in your files.

Appendix H

Equity Orientation**Scale:**

Completely Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Completely Agree
1	2	3	4	5	6	7

Instructions:

Please select the number that best represents your agreement with each statement

Items:

13. I am someone who puts in a lot of effort.
14. I am always finding ways to contribute.
15. I like to do as much as I can.
16. I am known as someone who always helps.
17. I frequently offer my assistance to others.
18. I give more than others around me.
19. I want to be rewarded for the work I complete.
20. I base my decisions on the outcomes I will receive.
21. I am rarely concerned with how I will personally benefit from a situation.
22. I put a lot of weight on personal gains and/or benefits when making decisions.
23. The rewards for my behaviour are very important to me.
24. I do not worry about receiving rewards or benefits for my efforts.

Scoring:

Input orientation: 1, 2, 3, 4, 5, 6.

Outcome orientation: 7, 8, 9R, 10, 11, 12R

Performance-related Behaviours

Scale:

Never	Rarely	Once in a while	Sometimes	Often	Frequently	Always
1	2	3	4	5	6	7

Peer-rating instructions:

Please rate your group members (but not yourself) on the following items. Fill his or her **first name** in the space below.

To what extent does _____ (team member's first name and last initial)...

Task Performance (Van Dyne & LePine, 1998)

Peer-rating items:

1. ...complete work on time?
2. ...successfully perform assigned tasks?
3. ...produce quality work that meets performance expectations?

Contextual Performance (Lee & Allen, 2002)

Peer-rating items:

4. ...help others who have been absent?
5. ...willingly give time to help others who have project-related problems?
6. ...assist others with their duties?

Counterproductive Behaviour

Peer-rating items:

7. ...engage in activities that derail the team's progress on the project?
8. ...miss team meetings for unnecessary reasons?
9. ...distract team members during team meetings?
10. ...treat team members with disrespect?

Social Loafing (George, 1992)

Peer-rating items:

11. ...not do his or her share of the work?
12. ...put forth less effort than other members of your team?
13. ...avoid volunteering for tasks as much as possible?
14. ...leave work for other team members which he or she should really complete?

Self-rating instructions:

Now that you have rated your team members, please rate yourself on the following items.

To what extent do you...

Task Performance (Van Dyne & LePine, 1998)

Self-rating items:

1. ...complete work on time?
2. ...successfully perform assigned tasks?
3. ...produce quality work that meets performance expectations?

Contextual Performance (Lee & Allen, 2002)

Self-rating items:

4. ...help others who have been absent?
5. ...willingly give time to help others who have project-related problems?
6. ...assist others with their duties?

Counterproductive Behaviour

Self-rating items:

7. ...engage in activities that derail the team's progress on the project?
8. ...miss team meetings for unnecessary reasons?
9. ...distract team members during team meetings?
10. ...treat team members with disrespect?

Social Loafing (George, 1992)

Self-rating items:

11. ...not do your share of the work?
12. ...put forth less effort than other members of your team?
13. ...avoid volunteering for tasks as much as possible?
14. ...leave work for other team members which you should really complete?

Scoring:

Task performance: 1, 2, 3.

Contextual performance: 4, 5, 6.

Counterproductive behaviour: 7, 8, 9, 10.

Social loafing: 11, 12, 13, 14.

Curriculum Vitae

HAYDEN J. R. WOODLEY
 Department of Psychology
 The University of Western Ontario

EDUCATION

University of Western Ontario

Doctorate of Philosophy, Industrial/Organizational Psychology Sept. 2012 – March 2017
 Supervisor: Dr. Natalie Allen

Dissertation: That's not fair! Examining individual differences in perceptions of equity

Master of Science, Industrial/Organizational Psychology Sept. 2010 – Aug. 2012
 Supervisor: Dr. Natalie Allen

Thesis: The effects of equity sensitivity and teamwork self-efficacy on team reward preference

York University

Specialized Honours Bachelor of Arts, Psychology Sept. 2002 – June 2008
 Advisor: Dr. Mary Jo Ducharme

Thesis: Intergroup comparisons and collective efficacy

Certificate, Human Resource Management Sept. 2005 – June 2007

PROFESSIONAL CREDENTIALS

Certified Human Resources Leader (CHRL) 2010 - present

REFEREED PUBLICATIONS

O'Neill, T. A., Hoffart, G. C., McLarnon, M. J. W., **Woodley, H. J. R.**, Eggermont, M., Rosehart, W., & Brennan, R. (in press). Constructive controversy and reflexivity training promotes effective conflict profiles and outcomes in student learning teams. *Academy of Management Learning & Education*, DOI: 10.5465/amle.2015.0183.

Woodley, H. J. R., Bourdage, J. S., Ogunfowora, B., & Nguyen, B. (2016). Examining equity sensitivity: An investigation using the Big Five and HEXACO models of personality. *Frontiers in Psychology*, DOI: 10.3389/fpsyg.2015.02000

O'Neill, T. A., McLarnon, M. J. W., Hoffart, G. C., **Woodley, H. J. R.**, & Allen, N. J. (2015). The structure and function of team conflict state profiles. *Journal of Management*, DOI: 0149206315581662.

Woodley, H. J. R., & Allen, N. J. (2014). The dark side of equity sensitivity. *Personality and Individual Differences*. 67, 103-108. DOI: 10.1016/j.paid.2014.03.003

CONFERENCE PRESENTATIONS

- McLarnon, M. J. W., & **Woodley, H. J. R.** (2015, June). *Time for group potency: The nature and implications of group potency over time*. Poster presented at the 76th Annual Meeting of the Canadian Psychological Association, Ottawa, ON, Canada.
- Woodley, H. J. R.**, Allen, N. J., & Olson, J. M. (2015, June). *Attitude towards teamwork: Understanding behaviour in a team environment*. In I. Tremblay (Chair), Industrial-organizational research as a tool to face organizational challenges. Symposium presented at the 76th Annual Meeting of the Canadian Psychological Association, Ottawa, ON, Canada.
- Woodley, H. J. R.**, & Allen, N. J. (2015, April). *Efficacy for innovation in work teams: Does referent matter?* In J. Mathieu and S. Park (Chairs), Multilevel models of learning and motivation. Symposium presented at the annual meeting of the Society for Industrial and Organizational Psychology, Philadelphia, Pennsylvania, United States.
- McLarnon, M. J. W., **Woodley, H. J. R.**, Hoffart, G. C., & O'Neill, T. A. (2015, April). *Team conflict profiles and the mediating role of conflict management*. Poster presented at the 30th Annual Meeting of the Society for Industrial and Organizational Psychology, Philadelphia, Pennsylvania, United States.
- McLarnon, M. J. W., O'Neill, T. A., **Woodley, H. J. R.**, & Allen, N. J. (2014, June). *Teams, conflict, and types: A latent profile examination of team conflict*. Poster presented at the 75th Annual Meeting of the Canadian Psychological Association, Vancouver, BC. **Selected for third place in the Student Poster Awards.**
- O'Neill, T. A., McLarnon, M. J. W., **Woodley, H. J. R.**, & Allen, N. J. (2014, May). *A team-centric view of conflict: Implications for team outcomes*. Poster presented at the 29th annual meeting of the Society for Industrial and Organizational Psychology, Honolulu, Hawaii, United States. **Selected as a Top-Rated Poster.**
- Woodley, H. J. R.**, & Allen, N. J. (2013, June). *Investigating the Dimensionality of Equity Sensitivity*. Poster presented at the 74th annual meeting of the Canadian Psychological Association, Quebec City, QC, Canada.
- Lee, H., **Woodley, H. J. R.**, Allen, N. J., & O'Neill, T. A. (2013, June). *Predicting team conflict with the five-factor personality model*. Poster presented at the 74th annual meeting of the Canadian Psychological Association, Quebec City, QC, Canada.
- Bremner, N. & **Woodley, H. J. R.** (2013, June). *An examination of the big five personality factors as predictors of attitudes towards teamwork*. Poster presented at the 74th annual meeting of the Canadian Psychological Association, Quebec City, QC, Canada.
- Woodley, H. J. R.** (2013, June). *The dark side of equity sensitivity*. Presented at the 14th annual meeting of the Administrative Sciences Association of Canada, Calgary, AB, Canada.

- Lee, H., Allen, N. J., Cameron, K., & **Woodley, H. J. R.** (2013, June). *Rethinking the measurement of team psychological safety: Referent use validity and the role of core self-evaluations*. Poster presented at the 14th annual meeting of the Administrative Sciences Association of Canada, Calgary, AB, Canada.
- McLarnon, M. J. W., & **Woodley, H. J. R.** (2013, April) *Time for group cohesion: Investigating an emergent state over time*. Poster presented at the 28th annual meeting of the Society for Industrial and Organizational Psychology, Houston, TX, United States.
- Woodley, H. J. R.**, & Schneider, T. J. (2013, January) *Social dominance orientation, equity sensitivity, and harm avoidance as predictors of perceived ability to deceive others*. Poster presented at the 14th annual meeting of the Society for Personality and Social Psychology, New Orleans, LA.
- Woodley, H. J. R.**, O'Neill, T. A., Thussu, S., Marcotte, E., & Allen, N. J. (2012, July). *Group potency and team performance: The moderating role of cohesion*. Poster presented at the 7th annual meeting of the Interdisciplinary Network for Group Research, Chicago, IL, United States.
- Woodley, H. J. R.**, & Allen, N. J. (2012, June). *The dark side of equity in the workplace*. Poster presented at the 73rd annual meeting of the Canadian Psychological Association, Halifax, NS, Canada.
- Woodley, H. J. R.**, & Allen, N. J. (2012, June). *Teamwork self-efficacy and team reward attitude*. Poster presented at the 73rd annual meeting of the Canadian Psychological Association, Halifax, NS, Canada.
- Woodley, H. J. R.** (2012, June). *Personality as a predictor of teamwork self-efficacy*. Presented at the 13th annual meeting of the Administrative Sciences Association of Canada, St. John's, NL, Canada.
- Woodley, H. J. R.**, & Ducharme, M. J. (2011, June). *Inter-group social comparison and collective efficacy*. Poster presented at the 72th annual meeting of the Canadian Psychological Association, Toronto, ON, Canada.

MANUSCRIPTS UNDER REVIEW AND IN PREPARATION

- Woodley, H. J. R.**, & Ducharme, M. J. (under review). *Performance feedback in work teams: the effects of intergroup comparisons*.
- Woodley, H. J. R.**, O'Neill, T. A., & Allen, N. J. (in preparation). *Group potency and team performance: The moderating role of group cohesion*.
- Woodley, H. J. R.**, Allen, N. J., & Olson, J. M. (in preparation). *Attitude towards teamwork: Understanding behaviour in a team environment*.

NON-REFEREED PUBLICATIONS

- Allen, N. J., & Woodley, H. J. R. (in press). Personality and Teamwork. In V. Zeigler-Hill & T. K. Shackelford (eds.), *Encyclopedia of Personality and Individual Differences*. New York: Springer.

Woodley, H. J. R. (2016). *Developing leaders: Tools and tips for today's organization* [PDF document]. Retrieved from <http://www.sigmaassessmentsystems.com>

Woodley, H. J. R. (2014, July). When compensating teams, does personality matter? *HRPA London and District Digest*, 8.

TEACHING EXPERIENCE

University of Western Ontario

Course Instructor

Psychology at Work	Sept. 2015 – Dec. 2015
Psychology at Work (Distance Studies)	Jan. 2015 – April 2015
Introduction to Industrial and Organizational Psychology	May 2014 – June 2014
Organizational Behaviour	Sept. 2013 – Dec. 2013

Course Designer

Psychology at Work (Distant Studies)	May 2014 – Aug. 2014
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Guest Lecturer

Work Teams

Mar. 2013

Training & Development

Nov. 2012

Head Lab Instructor

Research Methods and Statistics	Sept. 2015 – April 2016
Research Methods and Statistics	Sept. 2014 – April 2015

Lab Instructor

Research Methods and Statistics	Sept. 2013 – April 2014
Research Methods and Statistics	Sept. 2012 – April 2013
Research Methods	Sept. 2011 – April 2012

Teaching Assistant

Drugs and Behaviour May 2012 – June 2012

Drugs and Behaviour May 2011 – June 2011

Introduction to Psychology Sept. 2010 – April 2011

York College of Business: Toronto, ON

Course Instructor

Training & Development	Sept. 2009 – Dec. 2009
Introduction to Human Resource Management	Sept. 2009 – Dec. 2009
Applied Psychology	May 2009 – July 2009
Strategic Human Resource Management	Jan. 2008 – April 2008
Occupational Health & Safety	Jan. 2008 – April 2008
Compensation & Benefits	Jan. 2008 – April 2008

WORK EXPERIENCE

Sigma Assessments Systems

Executive Coaching Intern

Mar. 2016 – present

- Conducting research and data analysis on leader character and competencies
- Develop and administer leader coaching modules

University of Western Ontario

Consultant, Research Unit on Work & Productivity Sept. 2012 – present

- Work as a consultant resolving HR related issues
- Gained experience in leadership consulting

Research Assistant, TeamWork Lab Sept. 2010 - present

- Research assistant to Dr. Natalie Allen (Department of Psychology)
- Conduct longitudinal research with project teams

York University

Research Assistant, Human Resource Management Sept. 2007 – August 2010

- Research to Dr. Mary Jo Ducharme (School of Human Resource Management)
- Conducted experiments on managing group performance in the workplace

Fibertec Windows & Doors: Toronto, ON Dec. 2007 – Feb. 2008

Consultant, Human Resources (3 month contract)

- Created a recruitment & selection system
- Developed job descriptions & job advertisements

The Home Depot: Toronto, ON May – Aug. 2007 2008

Summer Intern, Human Resources

- Created a strategic pandemic plan for the Canadian division
- Developed a business continuity plan

I.T.S. – Industrial Temporary Solutions: Mississauga, ON Sept. 2007 – Nov. 2007

Recruitment Manager (3 month contract)

- Recruited & selected individuals in a fast-paced environment
- Created & implemented recruitment policies and procedures

AWARDS AND ACHIEVEMENTS

MITACS 2016

Accelerate Research Grant

- Examining the role of leader character and competencies in leader coaching

Human Resource Professionals Association 2013

Graduate Scholarship Award

- Awarded to the applicant whose research most significantly contributes to HR practice

Canadian Psychology Association 2013

Certificate of Academic Excellence

- Awarded to the best psychology theses in Canada

School of Graduate and Postdoctoral Studies 2012

Nominated for a Graduate Student Teaching Award

- Nominated as Teaching Assistant for Research Methods

Department of Psychology, University of Western Ontario
Ralph S. Devereux Award

2010

PROFESSIONAL MEMBERSHIPS

Society for Industrial/Organizational Psychology (SIOP)

Human Resource Professionals Association (HRPA)

Canadian Society of Industrial/Organizational Psychology (CSIOP)