SAFETY-SPECIFIC PERSON-ENVIRONMENT FIT: RELATION WITH SAFETY BEHAVIORS, JOB ATTITUDES, AND STRAIN

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ABSTRACT

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The concept of Person-Environment (PE) fit has gained strong theoretical and empirical support, demonstrating how the degree to which an individual is congruent with his or her environment is predictive of important individual and organizational outcomes, such as job satisfaction, performance, stress, and turnover (Kristof-Brown, Zimmerman, & Johnson, 2005). The current study expands upon the PE fit literature by examining how similarity between individual safety motivation and organizational safety climate influence safety behaviors. In addition, job attitudes and strain were investigated as outcomes, which have received very little attention in the area of occupational safety research. The current study examined Safety-Specific Person-Environment (SSPE) fit's relation with outcomes using both linear regression and polynomial regression approaches, allowing for a more in depth analysis of the 3-dimenisonal relationships between safety climate, safety motivation, and the outcomes (Edwards & Parr, 1993). Results revealed that SSPE fit was predictive of safety behaviors, job attitudes, and strain. More specifically, when safety climate and safety motivation are congruent, higher levels are associated with more safety behaviors and positive job attitudes and reduced strain, as expected. In addition, when there was discrepancy between the predictors, it was found that safety behaviors and job attitudes were highest and strain was lowest when safety climate exceeded safety motivation. Unexpectedly, results revealed that safety behaviors increased as the amount of discrepancy between safety climate and safety motivation increased. Theoretical and practical implications, as well as suggestions for future research, are discussed.

I dedicate my dissertation to my “little” brother, Josh Britton. You will always be my hero, too.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Attracting, selecting, and retaining qualified employees that fit in with the organization is an important goal for management and human resource personnel. One way of accomplishing this involves establishing a match or fit between the work environment and individuals' characteristics (Krisitof, 1996). Person-Environment (PE) fit involves the degree to which an individual is compatible with their work environment as a result of matched characteristics (Kristof-Brown, Zimmerman, & Johnson, 2005). PE fit has been found to relate to a variety of work related outcomes, ranging from organization attraction and job choice of applicants (Judge & Cable, 1997; Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005), to job satisfaction and organizational commitment of current employees, to tenure and turn over (Kristof-Brown et al., 2005).

While there are a number of types of fit that have been examined in the literature (e.g., person-job fit, person-organization fit, person-group fit; Kristof-Brown et al., 2005), an important area that has received little to no research attention is the degree to which an individual's safety motivation fits with the overall safety climate of the organization. Examining safety-specific PE fit would have important theoretical and practical implications, including predicting important job attitudes (e.g., job satisfaction, organizational commitment) and behaviors (e.g., safety behavior, safety citizenship behavior) and identifying strengths and areas of opportunity as well as ways of improving employees' safety motivation and safety climate. Improving the safety behaviors of employees has become of increasing importance to both researchers and practitioners, given the financial, social, and emotional costliness of poor safety performance to the organization and its employees. For example, workplace injuries resulting from unsafe behaviors not only cause pain and suffering on the part of the employee, but they

also cause a financial burden in the form of workers compensation, insurance costs, and lost productivity as well as social and emotional costs in the form of reduced organizational reputation or other employees becoming concerned for their own safety. As such, it is important to continue to investigate how to improve workplace safety and how this relates to subsequent strain and job attitudes, which have been found to relate to important organizational outcomes such as absenteeism, productivity, and turnover (see Jex, Cunningham, De La Rosa, & Broadfoot, 2006). The current study will fill this gap in the literature by examining how the fit between the safety climate and individual employees' personal safety motivations impact safety behaviors, strain, and job attitudes. In addition, the current study will use polynomial regression and response surface analyses to investigate the safety specific fit relationships. This contributes greatly to the safety literature, as this analytic approach allows one to investigate fit relations in much more depth, exploring the exact nature of complex relationships, which has previously never been done in the area of occupational safety research.

Theoretical Background

Findings related to PE fit and resulting PE fit theories are grounded in the classic similarity-attraction principle, dating as far back as the 4th century B.C. with the writings of Aristotle: "We like those who resemble us, and are engaged in the same pursuits… We like those who desire the same things as we, if the case is such that we and they can share the things together" (trans. 1932; Kristof-Brown & Guay, 2010). This concept that we are attracted to those that are similar to us persists in more contemporary theories, including the similarity-attraction paradigm (Byrne, 1971). This theory proposes that people desire contact with those that are similar to them because this interaction affirms their own beliefs and values and is pleasurable, resulting in positive feelings towards the other person. The similarity-attraction

paradigm has been applied specifically to the workplace, with the best known and most widely used theory being Schneider's (1987) attraction-selection-attrition (ASA) model, which proposes that employers will attract, select, and retain employees that are similar to them. Conversely, when there is incongruence, individuals and organizations will not be attracted to one another, making a job offer unlikely to be given or accepted or increasing the chances that the individual will turnover, either voluntarily or involuntarily (Wheeler, Gallagher, Brouer, & Sablynski, 2007).

The similarity-attraction paradigm and the ASA model lay the foundation for PE fit theories, which propose that congruence between an individual and their environment is motivating and leads to positive attitudes and behavioral outcomes (e.g. Verquer, Beehr, & Wagner, 2003; Hoffman & Woher, 2006). In terms of work attitudes, Verquer and colleagues (2003) conducted a meta-analysis on the relations between person-organization fit and various work attitudes, finding a positive relation with job satisfaction and organizational commitment and a negative relation with turnover intentions. In an investigation of behavioral outcomes, Hoffman and Woher (2006) found fit to be related to job performance, organizational citizenship behaviors, and actual turnover. The meta-analysis of Kristof-Brown and colleagues (2005) also found support for fit's relation with job satisfaction, organizational commitment, turnover intentions, task and contextual performance, and turnover. In addition, they found fit to relate to stress, tenure, and organizational attraction. Findings, therefore, strongly support PE fit's proposition that congruence between the individual and their organization leads to positive outcomes for both the individual and the organization.

Person-Environment Fit

There are a variety of individual and organizational characteristics that can be assessed to determine fit, such as goals, values, needs, or interests (Judge & Cable, 1997; Kristof-Brown et al., 2005) as well as various conceptualizations of environment, such as vocation, job, organization, group, or supervisor (Kristof-Brown et al., 2005). Person-job (PJ) fit involves the extent to which an individual's knowledge, skills, and abilities match that of the job requirements as well as the extent to which the job satisfies the individual's needs. Person-organization (PO) fit exists when there is congruence between an individual's goals or values and his or her organization's goals or values. The interpersonal compatibility of an individual with his or her work group is termed person-group (PG) fit. Lastly, the personality and goal congruence between an individual and his or her supervisor makes up person-supervisor (PS) fit (Kristof-Brown et al., 2005). While independent constructs, the various forms of fit are positively correlated with one another (Kristof-Brown et al., 2005), which makes sense given the ASA model's proposition that organizations become more homogenous as they select and retain similar individuals. That is, high PG fit is likely related to high PS fit, because the group is made up of similar individuals that are also similar to their supervisor, all of which are similar to the overall organization.

In addition to the different types of PE fit, there are a variety of ways of conceptualizing fit, including whether it is complementary or supplementary, different types of measurement, various content domains assessed, and numerous data analytic techniques. Complementary fit, as the name suggests, is when the characteristics of the individual and those of the organization complement one another (Muchinsky & Monahan, 1987). For example, someone with extensive knowledge on technology may be able to uniquely contribute to a consulting firm that does not specialize in IT. Alternatively, a person may be highly introverted in their everyday life, so

being in a social organization may help them achieve a need for social interaction and belongingness. "Thus, complementary fit occurs when individuals' characteristics fill a gap in the current environment, or vice versa" (Kristof-Brown et al., 2005, p. 288). Supplementary fit, on the other hand, is when the individual and the organization have similar characteristics (Muchinsky & Monahan, 1987). For example, the abilities of the person with extensive knowledge of technology would fit in well with an IT firm and a highly extroverted person would excel in a highly social environment. Most PJ fit theories utilize a complementary conceptualization, whereas the supplemental conceptualization is most common among other types of PE fit (Kristof-Brown et al., 2005).

In terms of measurement, fit can be assessed either directly or indirectly (Kristof, 1996). Perceived fit is when fit is measured directly, with employees assessing the extent to which they believe themselves to be compatible with their environments (French, Rodgers, & Cobb, 1974). Actual fit, on the other hand, involves indirectly assessing the individual and the environment independently to see how much they match (French et al., 1974). That is, a researcher would assess an individual's level on some construct, measure the organization's level on the same construct, and then compare the two in order to determine congruence. Indirect assessment of fit can be subjective, in which case the individual rates themselves and their environment, or objective, in which case the environment is objectively assessed via another source (French et al., 1974).

There are advantages and disadvantages to each method of measuring fit, with each having different types of biases. Perceived fit is the most vulnerable to cognitive manipulations, being that the entire process of determining fit is done by the individual, allowing for the individual to engage in deliberate or subconscious cognitive distortion in order to avoid feeling

as though they do not fit with their environment (Kristof-Brown et al., 2005). That is, according to cognitive dissonance theory (Festinger, 1957) individuals are motivated to maintain internal consistency and may therefore be more likely to indicate they fit in with their environment, regardless of whether or not they actually do. Subjective fit, although involving separate ratings of the person and the environment, is also subject to a consistency effect because both the person and environment assessments are being done by the same source, however the indirect nature of such an approach partially compensates for this (Kristof-Brown et al., 2005). In other words, although the same person is doing both ratings, because they are done separately, the individual is more likely to assess themselves and their environment independently of the other. Objective fit is not susceptible to a consistency effect, because the environment is not rated by the individual, but it is likely to be less strongly predictive of attitudes and behaviors due to its objective nature (Kristof-Brown et al., 2005). That is, although an individual's perception of their environment or how well they fit with it may be slightly biased, it is this biased perception that influences that particular individual's attitudes and behaviors. The ability of objective fit to predict individual attitude and behavior is strengthened to the extent that there is a distinct, clearly defined environment (e.g., strong organizational climate) being that there is less room for interpretation on the part of the individual.

There are also a number of content dimensions that can assessed for fit, some of which I have already mentioned, including knowledge, skills, and abilities (KSAs), goals, values, personality, and attitudes. Most complementary conceptualizations of fit involve the extent to which an individual's KSAs complement the environment, whereas supplemental conceptualizations more often involve assessing the similarity between individuals' and organizations' values, goals, and personalities (Kristof-Brown et al., 2005). It is important to

note than none of these operationalizations of fit involve the assessment of surface-level diversity characteristics, such as race, ethnicity, age, or gender. As such, PE fit theories are in no way implying that diversity in terms of demographics or protected classes is negative, rather the assumption is that similarity for more deep-level traits, such as attitudes and beliefs, is desirable.

While the majority of studies examining PE fit have focused on broad content domains, such as values, goals, and personality (e.g., Verquer et al., 2003; Kristof-Brown et al., 2005), recently researchers have begun to examine fit within more specific content domains. That is, fit has traditionally been viewed in terms of congruence between general characteristics of the individual (e.g., personality) and general characteristics of the organization (e.g., molar or macro organizational climate; employees' shared perceptions of their work environment; Schneider, Erhart, & Macey, 2011). It is also possible, however, to examine more narrow forms of fit between specific individual characteristics (e.g., a specific trait or ability) and more specific characteristic of the organization (e.g. climate related to specific domains of organizational functioning; Schneider et al., 2011).

As an example of fit within a more specific content domain, consider fit related to customer service. In a study of service climate (employees' shared perceptions regarding the treatment of customers) and employee service behavior, Drach-Zahavy (2010) found that service climate not only had a direct positive impact on employee wellbeing but also moderated the relationship between employee service behavior and wellbeing. Specifically, positive service behaviors related to increased wellbeing when there was congruence with a positive service climate but incongruence between individual service behavior and service climate related to decreased wellbeing. These findings can be explained in terms of resources gained from working in a positive service climate and engaging in service behaviors that match the climate.

More specifically, service climate functions as an energy resource, providing employees with the necessary training and motivation to engage in positive service behaviors, which in turn lead in positive feelings, for example that one is of value to others, as a result of meeting organizational expectations (Drach-Zahavy, 2010). When individuals in a positive service climate do not engage in positive service behavior, however, it may reduce resources, as the individual will be aware of a failure to meet service expectations, and thus may result in feelings of inadequacy. This rationale is directly in line with PE fit, in that the basic premise is that resources will be enhanced to the extent to which there is congruence between the environment (e.g. service climate) and the individual (e.g. service behavior).

In addition to the different types, measurements, and content domains of PE fit, the effects of PE fit on outcome variables can be assessed using several different analytic techniques. At the most basic level, PE fit effects can be assessed linearly by regressing an outcome variable onto a measure of perceived fit. This would provide information on how the outcome variable changes for individuals that have increasing perceptions that they fit within their organization. For example, Lauver and Kristof-Brown (2001) used linear regression to assess how participants' perceived PJ fit and perceived PO fit related to outcomes such as job satisfaction, intentions to quit, and contextual performance. What this approach does not provide is information on how the nature of (mis)fit influences the outcome variables. For example, this approach may indicate that a difference between the person and the environment is related to the outcome variable, but it does not indicate *what* is different between the person and environment and how that relates to the outcome. Is the outcome highest when the organization values something more than the individual does? Is the outcome affected if the individual has more of a trait than is required by the organization? These are questions that cannot be answered with the

linear regression approach. To answer questions like these, one must use more sophisticated analytic approaches to assess fit relations.

First, one can calculate the product term in order to investigate how one variable (i.e., the person or the environment) moderates the relation between the other variable and the outcome. This approach has been used in several studies, including the study by Drach-Zahavy (2010) discussed previously, which examined how service climate moderated the effect of employees' service behavior on wellbeing. Another approach, by far the most common approach (Edwards & Cooper, 1990), involves combining measures of the person and the organization into a single score which indicates the extent to which the two are similar in magnitude. This is done by taking the algebraic difference, or some variation of this difference, between the two scores, which provides an index of how close the two are in value.

Despite being the most common operationalization of PE fit, the use of difference scores has been criticized in the literature as an in appropriate means to examine fit for a number of reasons. First, concern has been raised by the conceptual ambiguity in such an approach, being that the unique contributions of each individual component are ignored when using difference scores (Edwards & Parry, 1993; Kristof, 1996). Second, information on the absolute level of the person and the organization is lost, as is the direction of the difference between the two with some indices such as the difference squared or the absolute difference (Edwards, 1993; Kristof, 1996). Third, and perhaps the most detrimental, the use of difference scores "reduce(s) the inherently three-dimensional relationship between E, P, and strain to two dimensions," (Edwards & Harrison, 1993). The potentially complex relationships between the two variables, as well as their joint effects, on the outcome variable cannot be explored using this approach (Kristof, 1996, Edwards & Harrison, 1993). For example, we may know that the outcome is greater when

there is misfit, but does it matter if the person scores higher than the organization, or vice versa? Does it matter how different they are? Can they be different up to a certain extent without consequence, beyond which point the outcome is affected? Perhaps the outcome variable increases more rapidly as the person becomes more and more differentiated from the organization, but the value of the organization matters little. These are all questions which cannot be answered with difference scores.

To analyze the complex, three-dimension nature of the relationship between the person, the environment, and the outcome, researchers have turned to the use of polynomial regression and response surface analyses (Edwards & Parry, 1993; Edwards & Harrison, 1993; Shanock, Baran, Gentry, Pattison, & Heggestad, 2010). The benefit of using polynomial regression to assess fit, over other techniques such as difference scores, is that polynomial regression allows for the examination of fit in 3-dimensional space, which shows the impact of fit or misfit at all levels of the variables. That is, polynomial regression allows researchers to examine how the fit (or misfit) between two predictor variables relate to an outcome variable as well as how the level of the constructs relates to the outcome (Cohen, Nahum-Shani, & Doveh, 2010). There are three main questions that can be answered using this approach. First, how does agreement between the two variables relate to the outcome variable? That is, when the two variables are in perfect agreement, what happens to the outcome as they increase or decrease? Second, how does the degree of discrepancy between the two relate to the outcome? In other words, what happens to the outcome variable as there is more versus less discrepancy? Lastly, how does the direction of discrepancy relate to the outcome? That is, is the outcome variable higher when there is discrepancy with one variable higher than the other, or does it not matter which variable is

higher? These are all questions than can only be answered with the use of polynomial regression to assess fit-outcome relations.

Safety Climate and Safety Motivation

Safety climate is defined as shared perceptions among employees regarding the safety policies, procedures, and practices within an organization (Zohar, 2000; Zohar & Luria, 2005; Neal & Griffin, 2006). Safety climate can be assessed at the aggregate or group level (group or organizational climate) or at the individual level (psychological safety climate; Neal & Griffin, 2006). Psychological safety climate refers to an individual's perception of the safety policies, procedures and practices; organizational safety climate refers to the shared perception among individuals in the organization (Neal & Griffin, 2006). Various factor structures have been proposed, but most include dimensions such as management commitment to safety, safety communication, safety training, and distinct ways of promoting safety (Zohar, 1980; Griffin & Neal, 2000). The safety climate within of an organization provides an indication of how important safety is within the organization. That is, "at its broadest level, safety climate describes employee perceptions about the value of safety in an organization" (Neal & Griffin, 2004, p. 18). Research has consistently found a strong relation between safety climate and safety behavior and performance (e.g. Cooper & Phillips, 2004; Zohar, 2000). Simply put, employees are more likely to engage in safe behavior in a climate that supports and encourages it.

Safety motivation, defined as the willingness to expend effort to behave safely and the valence associated with safety behaviors (Neal & Griffin, 2006), has also been linked to both safety climate and safety behavior. There is evidence that safety motivation, along with safety knowledge, is related to safety performance (Griffin & Neal, 2000). In addition, safety motivation and knowledge have been found to mediate the relation between safety climate and

safety performance (Griffin & Neal, 2000). In other words, an organizational climate that promotes safety is likely to foster increased safety motivation and knowledge among employees (e.g. through training and encouragement), which in turn leads to more safety behaviors and fewer injures.

Safety-Specific PE Fit

While it is well established in the literature that PE fit has important implications for essential organizational outcomes (e.g., job attitudes, performance, and turnover), research has yet to examine safety-specific PE fit in relation to crucial safety outcomes such as safety behaviors and performance. Safety-specific person-environment (SSPE) fit is defined here as the extent to which an individual's safety motivation is consistent with the safety climate within the organization.

In the most general sense, SSPE fit is a form of PE fit, although it can be examined from a PO or PG perspective, with certain implications for PS fit. That is, SSPE is defined as a general fit between an individual and their environment, but in practice this would involve assessing fit between the individual's safety motivation and either the organizational safety climate (safety-specific person-organization (SSPO) fit) or the group safety climate (safety-specific person-group (SSPG) fit). The fit between an individual's safety motivation and that of their supervisors (safety-specific person-supervisor (SSPS) fit), although not labeled as such, has been examined and discusses above. The focus of the current study will be on individual-organizational climate congruence or SSPO.

SSPE can be measured directly (i.e., perceived fit) or indirectly (i.e., subjective or objective). Perceived fit would involve directly asking organizational members how well they believe the organization's safety climate matches their personal safety motivation. Subjective fit

would involve assessing individuals' psychological safety climate (i.e., their perceptions of the organizational safety climate) and assessing how congruent that is with their personal safety motivation. Objective fit would involve aggregating safety climate to the organizational level and comparing that to each individuals' safety motivation. As discussed previously, there are advantages and disadvantages to each approach. It can be argued that when examining how fit influences an individual's attitudes and behavior, it is most appropriate to examine their perceptions of their environment (i.e. either perceived or subjective), being that objective fit is a more distal predictor of attitude and behavior (Cable & DeRue, 2002; Kristof-Brown et al., 2005). That is, in order for the environment, and more specifically how congruent it is with an individual, to influence that individual's attitudes and behaviors, it is more important to examine the individual's *perception* of their environment, rather than an objective measure, being that it is their perception that influences their attitudes and behavior. In terms of empirical evidence, findings are somewhat mixed, with two recent meta-analyses finding stronger relations with outcomes for perceived fit (Kristof-Brown et al., 2005; Verquer et al., 2003) and one finding stronger relations with outcomes for subjective and objective fit (Hoffman & Woehr, 2006). In general, however, it is accepted that employees' perceptions (i.e., perceived fit or subjective fit) are more predictive of their attitudes and behavior (Kristof-Brown et al., 2005). The current study, therefore, will investigate how both safety-specific perceived and subjective fit relate to important outcomes. For simplicity, the remainder of the manuscript will use the terms "direct fit" to refer to directly measured perceived fit and "indirect fit" to refer to subjectively measured indirect fit.

Although no studies have specifically investigated SSPE, two studies provide support regarding the importance of PE fit in predicting safety. Sherry (1991) investigated the extent to

which congruence between employee and supervisor safety attitudes predicted accident rates among transportation workers. Based on PE fit theory, which suggests that incongruence between the individual and their environment leads to stress, and findings that stress relates to safety (e.g. Hoffmann & Stetzer, 1996), it was expected that levels of fit would be significantly different for those that had versus those that had not experienced accidents or injuries. Results indicated that there were significantly higher levels of fit between employee and supervisor safety attitudes among those that did not have an accident. In another study looking at managers' and employees' safety values and behaviors, Maierhofer, Griffin, and Sheehan (2000) failed to find direct support for safety value congruence influencing employee safety behavior, but they did find that managers' safety values influenced employees' safety values which then influenced employees' safety behaviors.

These studies, while not examining SSPE directly, do demonstrate that safety value congruence does have implications for employee safety behaviors by showing how SSPS fit influences safety behaviors. What has not been done in the literature, however, is the examination of how the congruence between individual safety values (i.e., safety motivation) and the organizations safety values (i.e., safety climate) relate to safety behaviors. Therefore, I will be investigating safety climate as opposed to supervisor safety attitudes, which will allow for a more comprehensive look at of how employees perceive their work environment in terms of the importance placed on safety. That is, by only assessing supervisor attitudes, the previous study only captured a small portion of the overall environment. Safety climate, on the other hand, involves not only perceptions of managements' safety values, but also things like formal policies and procedures, training, and communication (Zohar, 1980). As such, safety climate is a more appropriate indicator of the safety environment than is supervisor attitudes, allowing us to assess

safety-specific PO fit rather than simply safety-specific PS fit. Additionally, no study has examined how safety-specific PE fit relates to other important outcomes, such as job attitudes and strain, despite evidence from other fit studies that fit is an important predictor of these outcomes. Therefore, the current study will expand upon past findings regarding safety-specific PE fit by examining how it relates to strain and job attitudes. Lastly, researchers have yet to assess direct SSPE fit, nor has the effect of indirect SSPE fit on outcomes been examined using polynomial regression and response surface analysis, both of which are described in the following sections.

Direct SSPO Fit

Direct SSPO fit involves the extent to which an individual believes that his or her personal safety motivation is congruent with his or her perception of the safety climate of the organization (i.e., psychological safety climate). Scoring high on a measure of direct SSPO fit, then, would be indicative of someone that a) personally values safety and believes the organization also values safety or b) does not value safety and perceives the organization does not either. Low direct SSPO fit would indicate a person that a) places a lot of value on safety but works in an organization with a poor safety climate or b) does not care much about safety but works in an organization with a strong safety climate.

Direct SSPO fit and safety behaviors. Given how important both safety climate and individual safety motivation are in predicting employee safety behaviors (e.g., Neal & Griffin, 2006), and the findings that SSPS fit is related to safety behaviors (Sherry, 1991; Maierhofer et al., 2000) it is expected that SSPO will relate to safety behaviors. Specifically, safety behaviors are expected to be highest when there is congruence between a positive psychological safety climate and high levels of individual safety motivation, being that safety behaviors will decrease

to the extent that either one of these variables is low. That is, an employee would be unlikely to engage in safety behaviors if there is not a climate that supports such behaviors *or* if he or she does not personally believe safety to be important—engaging in safety behaviors is contingent on both the climate and the individual valuing safety.

Hypothesis 1. Individual safety motivation and psychological safety climate will relate positively to safety compliance and safety participation.

Hypothesis 2. Direct SSPO fit will be significantly correlated at the bivariate level with safety compliance and safety participation.

Hypothesis 3. Direct SSPO fit will significantly relate to safety compliance and safety participation, above and beyond individual safety motivation and psychological safety climate.

Direct SSPO fit and job attitudes and strain. It is also expected that safety-related predictors, including SSPO fit, will relate to job attitudes and strain, operationalized in the current study as job satisfaction and organizational commitment and stress and burnout, respectively. Positive psychological safety climate and motivation likely lead to lower anxiety or fear of accidents and positive feelings associated with knowing that there is a concern for employees' safety and health (Jex, Sliter, & Britton, 2014). In terms of empirical evidence, although not explicitly studied for safety climate and safety motivation, accidents have been found to be related to psychological strains such as job dissatisfaction (Cooper & Sutherland, 1987), role overload (Hoffmann & Stetzer, 1996), and anxiety (Murray, Fitzpatrick, & O'Connell, 1997).

As for SSPO fit, based on theory and empirical evidence that PE fit results in positive employee outcomes, there is reason to believe that SSPO fit will positively influence employee

strain and job attitudes. Specifically, based on the attraction-similarity paradigm and basic PE fit theories explaining how a match between an individual and their environment leads to positive feelings, it is expected that congruence between psychological safety climate and individual safety motivation will be related to higher job satisfaction and organizational commitment and reduced stress and burnout. On the other hand, when there is misfit between the individual and the organization in terms of values placed on safety, it is likely to be associated with strain and negative job attitudes. Consider first an individual that has high safety motivation but works in an organization with a negative safety climate. This individual is likely to feel that the organization does not value his or her safety, and may feel pressured to engage in unsafe behaviors that go against what he or she personally believes in. This incongruence between attitudes (i.e., beliefs that safety is important) and behavior (i.e., staying in an organization with a negative safety climate or engaging in unsafe behaviors) will lead to cognitive dissonance (Festinger, 1957) and associated negative attitudes such as discontent or discomfort, which over time may cause one to leave the organization or alter their safety motivation to be more negative. Another individual may feel that safety is not all that important, despite working in an organization that has a strong, positive safety climate. This individual is likely to feel that the organization allocates resources to safety that could be used elsewhere, or may be forced to engage in safe behaviors they find unnecessary or cumbersome. This, too, is likely to lead to cognitive dissonance and feelings of frustration and unhappiness and eventual turnover or, more positively, potentially a shift to a more positive safety motivation. As such, I propose the following:

Hypothesis 4. Individual safety motivation and psychological safety climate will relate positively to job attitudes and reduced strain.

Hypothesis 5. Direct SSPO fit will be significantly correlated at the bivariate level with job attitudes and reduced strain.

Hypothesis 6. Direct SSPO fit will significantly relate to job attitudes and strain, above and beyond individual safety motivation and psychological safety climate.

Indirect SSPO Fit

Indirect SSPO fit is determined by seeing how similar (or dissimilar) an individual's perception of his or her safety climate is to his or her own personal safety motivation. Using an indirect SSPO fit approach allows for the examination of the potentially complex nature of the relations between psychological safety climate, safety motivation, and outcome variables. Specifically, in order to assess the nature of how SSPO fit relates to outcomes, polynomial regression and response surface analyses can be used to assess how congruence or incongruence between psychological safety climate and safety motivation relate to the outcome variables, which would not be possible with a measure of direct SSPO fit.

Indirect SSPO fit and safety behaviors. Recall that there are three main questions that can be addressed when examining the 3-dimensional nature of fit-outcome relations. First, one can assess how the two predictors, when in perfect agreement, relate to the outcome. As discussed previously, both safety climate and safety motivation have been found to positively predict safety behaviors (e.g., Neal & Griffin, 2006). It follows, then, that when the two are in agreement, that is when one perceives his or her organization's safety climate to be at the same level that he or she personally values safety, there will be a positive relationship with safety behaviors. That is, it is expected that there will be a positive slope and a non-significant curvature along the line of perfect agreement, representing a positive linear relationship between the two predictor variables together and the outcome.

Next, two questions related to discrepancy between the predictors can be assessed. The relation between the degree of discrepancy and the outcome provides information regarding how the outcome is affected as the two predictor variables become more dissimilar. In terms of safety, it is expected that safety behaviors will be lessened to the extent that either psychological safety climate or safety motivation are low, given how strongly predictive both of these variables are of safety behavior (e.g., Griffin & Neal, 2000; Neal, Griffin, & Hart, 2000). Some discrepancy between the two may not hinder one's safety behavior being that, to a certain extent, one may compensate for the other. If one has enough safety motivation that they are at least compliant with a positive safety climate, it likely would not matter if their motivation is slightly less than the safety climate, they will still behave safely in accordance with the high safety climate. Likewise, if the safety climate within an organization is at least positive enough that employees are not afraid of being ridiculed for acting safely, someone with a high safety motivation will act safe in accordance to their personal values even if the safety climate is not quite as high. As discrepancy between the two increases, however, safety behavior is likely to decrease. An individual with extremely low safety motivation is unlikely to engage in safety behaviors even in an extremely safe climate, and a person that places a lot of value on safety may not act safe for fear of the repercussions (e.g., mocking or low performance reviews for reduced performance) in an extremely unsafe climate. Therefore, it is expected that when there is discrepancy between psychological safety climate and safety motivation, there will be a negative curvilinear relationship with safety behaviors. That is, the outcome is highest when there is agreement between the two predictors, but as there is discrepancy between them in either direction, the outcome will be lower, as indicated by a negative curvature along the line of incongruence.

The second question concerning incongruence is how the direction of discrepancy influences the outcome variable. That is, when there is incongruence between the two predictors, how is the outcome affected when one predictor is higher versus when the other is higher. In terms of safety climate and safety motivation, it is well established that both influence safety behaviors, specifically with safety motivation mediating the relationship between safety climate and safety behaviors (e.g., Griffin & Neal, 2000; Neal, et al., 2000). What has yet to be investigated, however, is how the two relate to safety behaviors when they are discrepant. That is, when there is a difference between safety climate and safety motivation, are individuals more likely to engage in safety behaviors when safety climate is higher or the other way around? According to the expectancy-valence theory (Vroom, 1964) approach to explaining safety behaviors (Neal & Griffin, 2006), individuals working in an organization with a very positive safety climate are likely to engage in safety behaviors because these are the behaviors that are valued, expected, and likely rewarded by the organization. That is, even if someone is not personally motivated to act safely, they are likely to do so when working in a safe climate, being that that is what is expected and enforced by the organization. If, on the other hand, an individual has high safety motivation but is employed in an unsafe organization, he or she may be unlikely to engage in safety behaviors for fear of the negative consequences for doing so, as discussed previously. Therefore, it is expected that when psychological safety climate and safety motivation are incongruent, safety behaviors will be higher when the direction is such that psychological safety climate exceeds safety motivation. That is, with safety motivation entered into the equation first, there will be a negative slope along the line of incongruence.

In summary, it is expected that safety behaviors will be highest when psychological safety climate and safety motivation are congruent with each being high. As the two become

discrepant, safety behaviors are predicted to decrease. When there is discrepancy, it is expected that safety behaviors will be higher when psychological safety climate exceeds safety motivation than the other way around.

Hypothesis 7. Indirect SSPO fit will significantly relate to safety compliance and safety participation such that:

Hypothesis 7a: Agreement between safety motivation and psychological safety climate will be positively related to safety compliance and safety participation (i.e., positive slope along the line of agreement).

Hypothesis 7b: The degree of discrepancy between safety motivation and psychological safety climate will be negatively related to safety compliance and safety participation (i.e., negative curvature along the line of incongruence).

Hypothesis 7c: The direction of the discrepancy between safety motivation and psychological safety climate will be negatively related to safety compliance and safety participation (assuming safety motivation is entered first; i.e., a negative slope along the line of incongruence).

Indirect SSPO fit and job attitudes and strain. Like other investigated forms of (mis)fit, congruence and incongruence between safety climate and safety motivation are also expected to relate to job attitudes (i.e., job satisfaction and organizational commitment) and strain (i.e., stress and burnout). According to theories of PE fit and cognitive dissonance, one is more likely to be satisfied and less likely to experience strain if they are employed in an environment congruent with their own beliefs or values, which would include safety specific beliefs or values. In terms of the specific nature of this relationship, the three main questions answered with polynomial regression are discussed below.

First, it is expected that positive job attitudes will increase and strain will decrease as psychological safety climate and safety motivation increase in agreement. Recall that, although not previously investigated empirically, there is reason to believe these safety-related predictors will relate positively to job attitudes and negatively to strain, given the peace of mind and freedom from fear of accidents associated with these variables (e.g., Jex et al., 2014). As such, it is expected that when psychological safety climate and safety motivation are in agreement there will be a positive relationship with job attitudes (i.e., positive slope along the line of agreement) and a negative relationship with strain (i.e., negative slope along the line of agreement).

In terms of the degree of discrepancy, it is well established in the PE fit literature that misfit between an individual and their environment leads to reduced job satisfaction and organizational commitment and increased strain (e.g., Kristof-Brown et al., 2005). Recall, that individuals are attracted to, satisfied in, and more likely to stay with organizations to which they are similar (Schneider, 1987). One is more likely to be satisfied and committed if employed in an organization that shares their values and beliefs regarding safety. Likewise, there is less chance of strain or burnout if there is congruence between the individual and the organizational climate. On the other hand, when there is incongruence, one is likely to feel pressured to behave in a manner inconsistent with their personal values, leading to reduced satisfaction and commitment and increase stress and burnout. As such, it is expected that there will be a curvilinear relationship with the outcome variables when psychological safety climate and safety motivation are incongruent, with job attitudes lowest and strain highest when discrepancy is high in either direction.

Lastly, the direction of discrepancy is also likely to relate to job attitudes and strain. When there is a difference between individual safety motivation and psychological safety

climate, there is reason to believe that job attitudes will be higher and strain will be lower when there is a more positive psychological safety climate. A positive safety climate conveys a message to employees that the organization cares about their wellbeing (e.g., Neal & Griffin, 2006), which is likely to result in positive feelings about the organization. Likewise, a positive organizational climate is considered a resource, providing things like management support and training, which is related to increased wellbeing and reduced strain (Drach-Zahavy, 2010). Safety motivation, on the other hand, is less likely to lead to positive job attitudes and reduced strain in the absence of a strong safety climate, being that motivation is more related to individual attitudes and behaviors (e.g., Ajzen, 1991) than it is perceptions of the organization or psychological strain. Therefore, it is expected that when there is discrepancy between the predictors, job attitudes will be highest/ strain will be lowest when psychological safety climate is higher than safety motivation.

To summarize, it is expected that positive job attitudes will be highest and strain will be lowest when there is congruence between high psychological safety climate and high safety motivation. With increasing discrepancy between the two predictors, job attitudes are predicted to decrease and strain is predicted to increase. When there is incongruence, it is expected that job attitudes will be higher and strain will be lower when psychological safety climate is higher than safety motivation than the other way around.

Hypothesis 8. Indirect SSPO fit will significantly relate to job attitudes and strain such that:

Hypothesis 8a: Agreement between safety motivation and psychological safety climate will be positively related to job attitudes and negatively related to strain (i.e., positive (negative for strain) slope along the line of agreement)

Hypothesis 8b: The degree of discrepancy between safety motivation and psychological safety climate will be negatively related to job attitudes and positively related to strain (i.e., negative (positive for strain) curvature along the line of incongruence)

Hypothesis 8c: The direction of the discrepancy between safety motivation and psychological safety climate will be negatively related to job attitudes and positively related to strain (assuming safety motivation is entered first; i.e., a negative (positive for strain) slope along the line of incongruence).

Dimension Specific SSPO Fit

Being that safety climate has various dimensions, a logical question would be whether or not the strength of the fit—outcome relations differs depending upon climate being assessed at the dimension- or overall-level. That is, perhaps an individual feeling that their personal safety motivation fits with the safety communication in the organization has a stronger influence on safety behaviors or attitudes than an individual's feeling that their personal safety motivation fits with the amount of safety training given. There is no strong theoretical argument as to why fit with one dimension would have stronger effects on outcomes than fit with other dimensions, but it is important to investigate whether such differences exist. If differences are found, this would be useful information for safety climate change initiatives wishing to maximize effectiveness. For example, if SSPO fit has the strongest relations with outcomes when looking at safety communication, it may make more sense to first focus on this before moving on to other aspect of safety climate. As such, I propose the following research question:

Research Question 1: Do the SSPO fit—outcome relations differ depending upon the dimension of safety climate investigated?

In summary, the current study will examine how psychological safety climate and individual safety motivation; including each individually, a direct measure of their fit, and an indirect assessment of their fit; relate to two categories of outcomes; safety behaviors, which include safety compliance and safety participation, and job attitudes and strain, which include job satisfaction, organizational commitment, stress, and burnout. It is expected that safety climate and safety motivation will relate positively to safety behaviors (H1) and job attitudes and negatively to strain (H4), that direct SSPO fit will relate positively to safety behaviors (H2) and job attitudes and negatively to strain (H5), and it will relate significantly over the effects of the individual predictors (H3 and H6 for safety behaviors and job attitudes and strain, respectively). In terms of indirect SSPO fit, it is expected that agreement between safety climate and safety motivation will be positively related to safety behaviors (H7a) and job attitudes and negatively to strain (H8a), that the degree of discrepancy will relate negatively to safety behaviors (H7b) and job attitudes and positively to strain (H8b), and the direction of discrepancy will relate negatively to safety behaviors (H7c) and job attitudes and positively to strain (H8c).

METHODS

Participants and Procedures

Participants were recruited using Amazon's Mechanical Turk (MTurk). A large screening survey was conducted in order to identify potential participants. 1,648 individuals completed the screening survey for $1.50 compensation, which assessed a variety of work related variables (e.g., job context, job satisfaction, physical environment). Included were several variables meant to capture the extent to which one worked in a safety-relevant industry, such as the presence of physical hazards in the workplace. Specifically, the Work Design Questionnaire (WDQ, Morgeson & Humphrey, 2006) assessed dangerous work conditions (5 items, α=.87), physical demands (3 demands, α=.95), and ergonomic hazards (3 items, α=.64). In addition, potential participants were asked how often, on a typical day, they had to stand, kneel or stoop, walk, climb (e.g., ladders), or lift/ push/ pull heavy objects, and in what occupation they were currently employed. This allowed us to determine whether potential participants worked in jobs and/or industries that were potentially hazardous and/or required adherence to safety policies and procedures.

Eligibility for the current study required being currently employed in an organization (i.e., not self-employed) and at least one of the following: a) a high rating (4 or 5 on a 5-point scale) for dangerous work conditions, physical demands, ergonomic hazards, heavy lifting, or excessive standing or b) employment in the production or manufacturing, healthcare, maintenance, construction, farming, fishing, forestry, or transportation industries. 446 people met this criteria and therefore were eligible to take the current survey through MTurk.

Of the 446 individuals that were eligible to take the survey, 185 completed it for an additional $1.50 compensation. The majority of participants were male (60%) and the average

age was 34.46 (SD=9.66). The race breakdown is as follows; 78.9% white, 7.6% Hispanic, 7.6% black, 3.8% Asian, and 1.1% American Indian. The industry breakdown can be found in Table 1.

To determine whether there were significant differences between those that participated and those that were eligible but did not, analyses were run on a variety of demographic, attitude, and wellbeing variables. There were no significant differences in terms of race, job satisfaction, organizational commitment, or turnover intensions between those that did and those that did not participate. There were, however, significant differences in terms of burnout ($t(438)=2.65$, $p<.05$), age ($t(444)=-2.57$, $p<.05$), and gender ($\chi^2(1)=6.47$, $p<.05$), with those that took the survey having less burnout, being older, and a higher percentage of males. Implications of these findings are discussed later.

Measures

All scales, unless otherwise specified, were assessed using a 1-5 response range where 1= *strongly disagree* and 5= *strongly agree.*

Safety behavior. Safety behavior was assessed using 8 items from Neal et al.'s (2000) Workplace Health & Safety scale. There are two dimensions to this scale, each with 4 items; safety compliance had a reliability of .90 and safety participation had a reliability of .74. Example items include "I use correct safety procedures for carrying out my job" and "I voluntarily carry out tasks or activities that help to improve workplace safety" for safety compliance and safety participation respectively.

Job satisfaction. Job satisfaction was measured using 3 items from the Michigan Organizational Assessment Questionnaire (OAQ), which uses three items to describe an employee's subjective response to working in his or her job and organization (Cammann,

Fichman, Jenkins, & Klesh, 1983). An example item is "All in all, I am satisfied with my job" and the scale had reliability of .93.

Organizational commitment. Organizational commitment was assessed using the three highest loading items from Allen and Meyer (1990) as suggested by Griffin, Neal, and Parker (2007). An example item is "My organization has a great deal of personal meaning to me. Reliability for this scale was .93.

Stress. Stress was measured using the 8-item Stress in General scale (Stanton, Balzer, Smith, Parra, & Ironson, 2001). The scale asks participants to respond to items with *yes, no, or "?"*. It is scored as 0 (*No*), 1 (*?*), and 3 (*Yes*). It asks participants to endorse one-word items about their job including "Pressured" or "Demanding." The scale had a reliability of .82.

Burnout. The single burnout item from Williams, Konrad and colleagues (2002) was used. Participants are instructed to indicate their level of burnout. Response options included 1 (*I enjoy my work. I have no symptoms of burnout*.), 2 (*Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out.*), 3 (*I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion.*), 4 (*The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot*.), and 5 (*I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help*.)

Psychological safety climate. Psychological safety climate was measured using 16 items from Neal et al.'s (2000) Workplace Health & Safety scale. This scale asked questions about how the participants view the overall safety climate within their workplace. The scale had a reliability of .97. There were 4 dimensions; management commitment (e.g., "Management is concerned for the safety of employees"), communication (e.g., "There is frequent

communication about safety issues in this workplace"), safety training (e.g., "Safety issues are given a high priority in training programs"), and safety systems (e.g., Safety procedures and practices are sufficient to prevent incidents occurring").

Safety motivation. Four items from Neal and colleagues (2000) was used to measure safety motivation. This scale had a reliability of .91 and an example item is "I believe that workplace health and safety is an important issue."

Direct SSPO fit. To measure employees' perceptions of how well their personal safety values math those of the organization, 4 items were developed for this study. Participants were instructed to considering their own personal opinions on workplace safety, as well as the extent to which they believe that their organization values safety and then indicate the extent to which they agree with each of the following statements. "I personally value safety the same amount that the organization value's safety," "My personal views on safety don't match up well with my organization's views on safety" (R), "My organization and I place the same amount of importance on workplace safety", "I don't feel as though my organization and I value safety to the same extent" (R).

RESULTS

Correlational Analyses

Means, standard deviations, and correlations among variables are presented in Table 2. Keep in mind that there is some range restriction present, particularly for safety motivation (M=4.47, SD=.58) and safety compliance (M=4.35, SD=.58). The following results, therefore, may actually be underestimates of the true relationships (Le & Schmidt, 2006).

As seen in the table, psychological safety climate and direct SSPO fit are significantly correlated with all outcome variables in the expected direction, and individual safety motivation is significantly correlated with both safety behavior outcomes in the expected direction but only one job attitude/ strain outcome in the expected direction. There is support, therefore, for Hypotheses 1, 2, and 4, and moderate support for Hypothesis 5.

Linear Regression Analyses

Linear regression analyses were conducted for psychological safety climate, safety motivation, and direct SSPO fit as predictors of each outcome. Specifically, hierarchical regression was used, entering psychological safety climate and safety motivation in step 1 and entering direct SSPO fit in step 2. This was done in order to determine if direct SSPO fit is predictive of safety behaviors, job attitudes, and strain, above and beyond the effects of psychological safety climate and safety motivation. Results for the hierarchical regression analysis can be found in Table 3.

With psychological safety climate and safety motivation in the first step, psychological safety climate is a significant predictor of all outcomes, in the expected direction. Safety motivation is also significantly positively related to safety compliance ($\beta = .49$, $p < .01$) and safety participation ($\beta = .22$, $p < .01$), as expected. Safety motivation is not, however, related to job

satisfaction or stress and it is related in the opposite direction of that expected for the other outcome variables, indicating a suppression effect. Notice that the beta weights for safety motivation are in the opposite direction from and stronger than expected based on its correlation coefficients with organizational commitment (β= -.17, $p< .05$) and burnout (β= .16, $p< .05$). This indicates psychological safety climate is a negative suppressor for safety motivation when predicting these two variables.

Despite being significantly correlated at the bivariate level with all of the outcomes, direct SSPO, controlling for psychological safety climate and safety motivation, was not a significant predictor of any of the outcomes, with the exception of burnout (β= -.23, $p<.05$). Therefore, there was no support for Hypotheses 3 and very limited support for Hypothesis 6.

Polynomial Regression Analyses

The exact nature of the relations between psychological safety climate, individual safety motivation, and the outcome variables were examined using polynomial regression and response surface analysis, described by Edwards and Parry (1993) as a means of examining the effect of congruence (i.e. fit). Following the recommendations of Cunningham (2011), a base rate of discrepancy was first established in order to determine if examining misfit was appropriate (i.e., if psychological safety climate and motivation are never discrepant, there would be no need to test the effects of discrepancy on the outcomes). This was done by standardizing the two variables and determining the percentage of scores with a value over half a standard deviation above or below the standardized value of the other variable (i.e. discrepant values). As reported in Table 4, 50% of scores were in agreement (i.e. psychological safety climate=safety motivation) and 50% of scores were discrepant (i.e. psychological safety climate≠ safety motivation) with 2.17% of participants having higher scores on psychological safety climate and

47.83% of participants having higher individual safety motivation scores. Given the large percentage of discrepant scores, there is sufficient justification for conducting polynomial regression analysis to determine how these discrepancies between psychological safety climate and individual safety motivation influence safety behaviors, job attitudes, and strain.

Prior to running the polynomial regression, psychological safety climate and individual safety motivation were first centered on the scale midpoint in order to facilitate interpretation of the parameter estimates (Edwards and Parry, 1993). The following terms were then entered in to a regression equation for each outcome variable; the main effect terms for individual safety motivation (b_1) and psychological safety climate (b_2), safety motivation squared (b_3), the interaction term (b_4), and psychological safety climate squared (b_5). The results of the polynomial regression analysis can be found in Table 5.

As seen in Table 5, the regression equation explains a significant amount of variance in each outcome variable, as indicated by each R^2 value being significantly different from zero. Thus, following the recommendations of Shanock et al. (2010), the effects of fit and misfit on the outcome variables can be assessed by examining the four surface test values (i.e., a_1, a_2, a_3, and a_4) rather than the regression coefficients, as is commonly done in traditional regression analysis. First, a_1 ($b_1 + b_2$; slope along the line of perfect agreement) and a_2 ($b_3 + b_4 + b_5$; curvature along the line of perfect agreement) allow for the assessment of how agreement between psychological safety climate and safety motivation relate to the outcome variables. Next, a_4 ($b_3 - b_4 + b_5$; curvature along the line of incongruence) provides information regarding how the degree of discrepancy between psychological safety climate and safety motivation relate to the outcome. Lastly, the interpretation of a_3 ($b_1 - b_2$; slope along the line of incongruence) provides information

on how the direction of discrepancy relates to the outcome. For surface test results, see Table 5. Graphical representations of the response surfaces can be found in figures 1-6.

For safety compliance, the slope along the line of agreement, a_1 is significant and positive ($b = .63$, $p < .01$) and a_2 is not significant, together indicating there is a positive linear relationship along the line of agreement. There was the same pattern of results for safety participation, with a significant positive a_1 ($b = .76$, $p < .01$) and a non-significant a_2. Notice in figures 1 and 2 how the values for safety compliance and safety participation increase along the line of perfect agreement moving toward the back of the graph (i.e., as safety motivation and safety participation increase). This indicates that when psychological safety climate and safety motivation are in agreement, safety compliance increases as psychological safety climate and safety motivation increase. Hypothesis 7a, therefore, is fully supported.

In terms of the line of incongruence, for both safety compliance and safety motivation there was a significant positive a_4 ($b = .62$, $b = .44$, $p < .01$ for safety compliance and safety participation). This indicates that the outcomes increase more sharply as the degree of discrepancy between psychological safety climate and safety motivation increase. This can be seen graphically by the convex surface along the line of perfect agreement; the outcomes are highest at the ends of this line, which are the points of highest discrepancy, and lowest toward the middle where there is perfect agreement. This is the opposite direction of what is expected. Therefore, Hypothesis 7b was not supported.

As for the direction of discrepancy, a_3, though not significant, is negative, indicating the outcomes are higher when the discrepancy is such that psychological safety climate is higher than safety motivation. When testing Hypotheses it is important to investigate not only the significance of the surface tests, but also to visually examine the nature of the relationships using

the response surface graphs (Shanock et al., 2010). Notice in figures 1 and 2 how the outcomes are highest toward the left, where psychological safety climate is higher than safety motivation. Therefore, although a_3 is not significant, it is in the expected direction and the response surfaces visually support the hypothesized relationship between the direction of discrepancy and the outcomes, so there is moderate support for Hypothesis 7c.

For both job satisfaction and burnout, only a_1 is significant (b = 1.21, b = -.95, p <.01 for job satisfaction and burnout), indicating a linear relationship along the line of agreement but no relations along the line of incongruence. For job satisfaction, a_1 is positive, as expected, indicating that when psychological safety climate and safety motivation are in agreement job satisfaction increases as the two increase. This can be seen graphically in figure 3, with the values for job satisfaction increasing along the line of agreement as psychological safety climate and safety motivation increase. The negative a_1 for burnout indicates that when there is congruence, burnout decreases as psychological safety climate and safety motivation increase. As seen in figure 6, values for burnout increase toward the front of the graph, as psychological safety climate and safety motivation decrease. There is no significant a_1 for organizational commitment or stress. Therefore, Hypothesis 8a is supported for two of the four job attitude/ strain outcomes.

In terms of the curvature along the line of incongruence, a_4 is not significant for any of the job attitudes or strain outcomes. As such, Hypothesis 8b was not supported.

For organizational commitment, the slope along the line of incongruence, a_3, was significant and negative (b = -1.07, p <.01), indicating that when there is misfit between psychological safety climate and safety motivation, organizational commitment is higher when psychological safety climate is higher than safety motivation. Notice how, in figure 4, there is a

clear linear relationship along the line of incongruence, with organizational commitment decreasing as the values of psychological safety climate and safety motivation decrease. No other a_3 is significant; therefore Hypothesis 8c is supported for one of the 4 job attitude/ strain outcomes.

Exploratory Analyses

Polynomial regression and response surface analysis was also conducted with each of the four dimensions of climate used in place of overall psychological safety climate in relation to safety motivation and each outcome variable. All regression equations explained significant variance in the outcome variables, and as such, only the surface tests are reported (see Table 6) and interpreted. A brief summary for each outcome, including how each psychological safety climate dimension predicts it (dis)similarly across the different dimensions and compared to the overall climate measure, are discussed below.

For safety compliance, there was a relatively consistent pattern of results for the different climate dimensions with the safety training and safety systems dimensions having the exact same pattern of results as the overall climate measure. The biggest difference is in the way management commitment relates to safety motivation in predicting safety compliance. In all other sets of analyses, for overall psychological safety climate as well as the other dimensions, in the case of a significant, positive a_4 (outcome increases as the degree of discrepancy increases), the outcome is higher when psychological safety climate exceeds safety motivation (negative a_3). In the case of management commitment to safety and safety compliance, the nature of the relationship is such that safety compliance is higher when safety motivation exceeds management commitment to safety.

Safety participation is also predicted similarly by the specific dimensions as it is overall psychological safety climate, with communication and safety systems having the same pattern of results as overall psychological safety climate. As when examined with overall psychological safety climate, there were no significant findings for stress when looking at the individual climate dimensions. Job satisfaction and burnout have the same pattern of results when predicted by communication, safety training, and safety systems as they are when predicted by overall psychological safety climate, with the exception of when management commitment is used in the equation there is also a significant a_4. Most interesting here, is that job satisfaction predicted by safety motivation and management commitment is the only instance where the outcome is higher when discrepancy decreases (negative a_4), which is actually what was hypothesized originally in (H7b and H8b).

DISCUSSION

The primary purpose of the current study was to investigate how fit between an individual's safety motivation and his or her perceptions of their organization's safety climate relates to safety behaviors, job attitudes, and strain. It was expected that higher SSPO fit would relate to more safety behaviors, more positive job attitudes, and reduced strain. Specifically, it was hypothesized that when psychological safety climate and safety motivation increased together, safety behaviors and job attitudes would increase and strain would decrease. Additionally, as the degree of discrepancy increased, safety behaviors and job attitudes were expected to lessen and strain expected to rise. Finally, when there was discrepancy, positive outcomes were predicted to be higher when the direction was such that psychological safety climate exceeded individual safety motivation.

Results indicated that SSPO fit is in fact predictive of safety behaviors, job attitudes, and strain. Specifically, at the bivariate level direct SSPO fit related to increased safety behaviors, more positive job attitudes, and reduced strain. However, with the exception of burnout as an outcome, these relations were not significant after controlling for the individual predictors. In terms of the nature of the SSPO fit-outcome relations, agreement was positively related to safety behaviors and job satisfaction and negatively related to burnout, as expected. That is, when psychological safety climate and safety motivation are congruent, safety behaviors and job satisfaction increase and burnout decreases as the two predictors increase. When there was discrepancy, the direction was such that safety behaviors and organizational commitment were highest when psychological safety climate was higher than safety motivation, as was predicted.

As for the unexpected findings, the degree of discrepancy related to the outcomes such that increased discrepancy was related to increased safety behaviors. That is, contrary to what

was expected, individuals were more likely to indicate engaging in safety behaviors when there was inconsistency between their personal safety values and their perception of the organizational safety climate. In terms of explaining this inconsistent finding, neither the safety climate nor PE fit literatures offer much in the way of providing clarification. One possible explanation is that when psychological safety climate and safety motivation are congruent, one is more likely to provide a realistic, non-exaggerated estimate of his or her engagement in safety behaviors. In other words, if there is discrepancy between the individual and the climate, especially when the discrepancy is such that psychological safety climate exceeds personal safety motivation, there may be a tendency to exaggerate safety behavior responses to appear as though one is behaving in accordance to the safe climate. This is consistent with the idea of social desirability responding (Viswesvaran & Ones, 1999), in that when the safety climate is direct to be extremely positive, individuals may be more likely to respond in a socially desirable way, exaggerating their responses to the safety behavior measure in an attempt to conceal the true value they place on safety.

Another possibility, more the case when safety motivation exceeds psychological safety climate, is that individuals actually do behave safely in an effort to overcompensate for an unsafe climate. That is, if one personally values safety but is employed in an organization that does not, he or she may be more likely to act safe in order to protect themselves in this potentially dangerous environment. This would imply SSPO fit may have a more complementary, as opposed to supplementary, conceptualization (Kristof-Brown et al., 2005). In other words, it is possible that safety behavior may actually be higher when safety motivation acts to compensate for low psychological safety climate. These explanations, social desirability responding in the case of low safety motivation or SSPO fit being complementary, as well as other possible

explanations for the current unexpected findings should be explored in the future, potentially with the use of impression management or other motivational constructs as control variables to see if the pattern of results change.

In terms of the exploratory analyses, there were two particularly interesting findings. First, when the management commitment dimension of safety climate was used in the fit analysis to predict safety compliance, results indicated that safety compliance was higher when the direction of the discrepancy was such that safety motivation exceeded management commitment to safety. Similar to the explanation above, these findings could be the result of employees being especially careful to comply with safety procedures when concerned that their managers and consequently possibly their teammates (Zohar, 2000) do not care about their safety. In other words, this would create an every-man-for-himself type mentality, so those with high safety motivation are especially likely to behave in a way to protect their personal safety (i.e., high safety compliance).

The exploratory analyses also revealed inconsistent findings for management commitment to safety used in the prediction of job satisfaction. This was the only instance in which the outcome was higher when there was less discrepancy between the two predictors, as was originally hypothesized. One possible reason for this is that this outcome, unlike safety behaviors which had the opposite pattern of results for degree of discrepancy, is purely an attitudinal, not behavioral, outcome. That is, while incongruence may cause one to exaggerate safety behaviors to adhere to a safe climate or engage in extra safety behaviors to protect oneself in an unsafe environment, it would still be related to decreased job satisfaction, especially when considering management commitment to safety, given the interpersonal nature of this dimension.

Theoretical and Practical Implications

There is substantial theoretical and empirical support for PE fit as a predictor of important employee and organizational outcomes, such as job satisfaction, turnover intensions, stress, and commitment (e.g., Kristof-Brown et al., 2005). Researchers have begun to examine more domain specific forms of PE fit (e.g., Drach-Zahavy, 2010), yet no study has looked at fit between the individual and the organization in terms of safety. As such, the biggest theoretical contribution of the current study is the uncovering of the importance SSPE fit plays in predicting safety behaviors, job attitudes and strain, therefore expanding upon traditional PE fit theories.

In addition, the current study confirmed the theoretical proposition made by Jex and colleagues (2014) that safety climate is predictive of psychological outcomes in addition to behavioral outcomes. A positive safety climate sends a message to employees that the organization cares about their wellbeing (Neal & Griffin, 2006), as well as serves as a resource to employees (Drach-Zahavy, 2010), therefore leading to reduced strain and increased subjective wellbeing.

Lastly, safety behaviors were higher when safety climate exceeded safety motivation, which is in accordance with expectancy-valence theory (Vroom, 1964). As explained by Neal and Griffin (2006), expectancy-valence theory proposes employees are more likely to engage in safety behaviors if it is assumed these behaviors will lead to desired outcomes, as would be the case in a positive safety climate (Zohar, 2003) but not necessarily in the case of high individual safety motivation. That is, safety climate, not safety motivation, informs employees what behaviors are expected and likely to be rewarded, so working in a positive safety climate would increase the chances of employees engaging in safe behavior more so than would having high personal safety motivation.

The major practical implications of the current study involve the design, implementation, and evaluation of safety and employee wellness interventions. First, if resources are limited, safety interventions should aim more to enhance the safety climate within an organization rather than focusing on individual level safety motivation, unless the safety climate within the organization is extremely poor. That is, in general, it is more important to have a positive safety climate when trying to increase safety behaviors. If, however, there is an extremely poor safety climate, it may be wise to start by trying to enhance individual safety motivation, because high safety motivation can compensate for a lack of a positive safety climate. Second, other wellness interventions may do well to incorporate a safety climate component, being that the current study found safety climate to predict job attitudes and strain.

In terms of evaluation, another implication for the current study is that when assessing safety within an organization, there should be a focus on the overall organizational climate and employees' individual levels of safety motivation, as well as how these two interact for each individual and for the organization overall. That is, in order to capture a more complete, accurate understanding of the safety status of an organization, it is not enough to investigate just the safety climate or just individual employees' safety motivations. There must be a consideration of both, seeing as how the current study found both to not only be individually related to safety behaviors, strain, and job attitudes, but also the joint effects and how the two are related is important.

Limitations and Future Directions

Though the current study has several key strengths (e.g., two ways of measuring SSPO fit, use of polynomial regression to assess fit-outcome relations, investigation of job attitudes and strain as outcomes) it is not without limitations. First, there were some significant differences

between those that participated and those that did not despite being eligible. The group that was eligible but did not participate consisted of more females, younger people, and individuals with higher levels of burnout. This has potential implications for the current study, given findings that females are more likely to engage in safety behaviors than males (e.g., Reed, Browning, Westnear, & Kidd, 2006). Mean-level differences for safety behaviors between males and females [which was found in follow-up analyses, ($t(181)=-2.00$, $p<.05$) for safety compliance and ($t(181)=-2.28$, $p<.05$) for safety participation] does not, however, impact the pattern of predictor-outcome relations. As for age differences, although statistically significant, there is little practical significance with a mean age difference of 4 years. That is, although a mean difference of 4 years between those that participated and those that did not was statistically significant, this small of a difference is unlikely to have influenced the study's findings. The findings related to burnout are a bit more concerning given how related burnout is to the other study variables, which possibly may have caused the current findings to be underestimates of the true relations between SSPE fit and the outcomes. Future researchers should take steps to help ensure a lower attrition rate between surveys, possible with the use of advertising, more reminders, or more substantial incentives.

Next, although it has been argued elsewhere that it is employees' perceptions of fit that are important in assessing its relation with outcomes (e.g., Kristof-Brown et al., 2005) which supports the use of direct and indirect measures, the current study does suffer from single source data, with both the predictors and outcomes collected from the same source. Moving forward, it would be important to investigate objective measures of SSPO fit (e.g., using an objective or aggregate indicator for safety climate) to see if the same pattern of results were found. It would especially be helpful to investigate safety climate at the aggregate level, seeing as how this is

how safety climate is traditionally operationalized and examined (e.g., Zohar, 2003). That is, while employees' perceptions of the organizational safety climate is certainly important, it will be important for future research to establish how employees' fit with the actual, aggregate safety climate within the organization impacts safety behaviors, job attitudes, and strain. Relatedly, other sources or objective measures could be used to assess the outcomes, for example supervisor or coworker ratings of safety behavior or significant other ratings of job attitudes and strain. This would be an important next step, seeing as how self-reports of safety behaviors, and to some extent job attitudes and strain, could be biased, which may have distorted some of the current findings.

Additionally, the current study utilized a cross-sectional design, which may have failed to uncover a potentially temporally dynamic relationship between safety climate, safety motivation, and the outcome variables. Investigating these relationships longitudinally would be especially helpful, seeing as safety climate has been found to have a lagged effect on individual safety motivation which in turn has a lagged effect on safety behaviors (Neal & Griffin, 2006). In addition, a reciprocal relationship over time has been found for safety motivation and safety participation (Neal & Griffin, 2006). An important next step, then, would be to assess how the fit between safety climate and safety motivation influence outcomes over time, especially when there is misfit. Discrepancies between safety climate and safety motivation are likely to lessen over time as individuals' values shift toward that of the organization via socialization (e.g., Kristof, 1996; Robers & Robins, 2004), but it is also possible that the climate could change to reflect the motivation of employees. Therefore, it is important to investigate how SSPO fit changes over time and how this change relates to various outcomes.

Another interesting future direction would be to further investigate SSPO fit at the dimension level, specifically examining how various dimensions relate to more domain specific outcomes. For example, the fit between management commitment to safety and safety motivation was found to relate to job satisfaction, but it would be important moving forward to see how things like supervisor satisfaction or direct supervisor support are impacted.

The inclusion of other safety-relevant variables would also be an important future direction. For example, safety knowledge, in addition to safety motivation, has been found to mediate the safety climate—safety behavior relationship (e.g., Neal, Griffin, & Hart, 2000). As such, including safety knowledge into the equation may help to further uncover how SSPO fit relates to safety behaviors and other outcomes. Perhaps SSPO fit relates to safety behaviors, but only to the extent that there is adequate safety knowledge. Similarly, it would be important to investigate other possible mechanisms underlying the SSPO fit—outcome relationships. That is, what variables, at the person, group, or organization levels, influence or help explain these relationships. For example, some variables have been found to predispose individuals to fitting in with their environment (e.g., Roberts & Robins, 2004), which may also be the case for SSPO fit.

Lastly, it would be interesting to examine SSPE fit-outcome relations specific to certain industries. That is, there are industry-specific considerations when it comes to safety, including things like the nature of the hazards, amount of regulations present, likelihood of others being injured, sophistication of regulatory procedures, etcetera, which could differentially influence how SSPE fit relates to outcomes. For example, nurses must practice Universal Precautions to prevent blood-borne pathogens exposure, construction works need fall protection to prevent injury, and maintenance employees need to follow confined space entry procedures to avoid

suffocation. It is possible that these different circumstances would cause one to be more or less likely to engage in safety behaviors or experience reduced job attitudes and increased strain depending on their level of SSPE fit. It is also possible that different industries have different norms in terms of mean SSPE fit, which may differentially influence the outcomes. The current study established that SSPE fit is predictive of safety behaviors, job attitudes, and strain using a sample of participants from a variety of industries, and future research can expand on the current findings by examining SSPE fit specific to particular industries.

In conclusion, the current study expanded upon the safety, PE fit, job attitudes, and strain literatures by providing insight into how fit between an individual's safety motivation and his or her perceptions of the organizational safety climate influence safety behaviors, job attitudes, and strain. This was done using both a linear regression approach with a direct measure of SSPO fit and a polynomial regression approach with an indirect measure of SSPO fit. Results revealed that SSPO was important in the prediction of not only safety behaviors, but also job attitudes and strain. While there is certainly more to be discovered, the current study was a huge step in the right direction toward uncovering the complex nature of these relations.

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APPENDIX A. HSRB FORM

BGSU
BOWLING GREEN STATE UNIVERSITY
Office of Research Compliance

DATE:	May 13, 2014
TO:	Ashlie Britton, M.A.
FROM:	Bowling Green State University Human Subjects Review Board
PROJECT TITLE:	[592194-3] Safety-Specific Person-Environment-Fit: Relation with Safety Behaviors, Job Attitudes, and Strain
SUBMISSION TYPE:	Revision
ACTION:	APPROVED
APPROVAL DATE:	May 13, 2014
EXPIRATION DATE:	April 19, 2015
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # *7*

Thank you for your submission of Revision materials for this project. The Bowling Green State University Human Subjects Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

The final approved version of the consent document(s) is available as a published Board Document in the Review Details page. You must use the approved version of the consent document when obtaining consent from participants. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please add the text equivalent of the HSRB IRBNet approval/expiration date stamp to the "footer" area of the electronic consent document.

Please note that you are responsible to conduct the study as approved by the HSRB. If you seek to make any changes in your project activities or procedures, those modifications must be approved by this committee prior to initiation. Please use the modification request form for this procedure.

You have been approved to enroll *325* participants. If you wish to enroll additional participants you must seek approval from the HSRB.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must also be reported promptly to this office.

This approval expires on April 19, 2015. You will receive a continuing review notice before your project expires. If you wish to continue your work after the expiration date, your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date.

Good luck with your work. If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or hsrb@bgsu.edu. Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.

BGSU
BOWLING GREEN STATE UNIVERSITY

Informed Consent

The purpose of this study is to examine factors important to workplace safety, stress, and job attitudes. In this research study, you will be asked to answer some questions about yourself, your workplace, and your opinions about your workplace. None of the questions will allow the researchers to identify participants based on their responses. The survey should take no longer than 15minutes to complete. Please be as honest as possible in responding to the items. Because your names will not appear on any of the surveys, no one other than the research team will ever see your responses. In other words, your responses are anonymous. In addition, all data will be kept on a computer in a locked office. After participation in this study it is highly recommended that you clear your browser cache to ensure that no third parties are able to obtain your personally identifiable information. You will receive $1.50 for participation.

Participation in this study is completely voluntary. Your choice to participate or not to participate will not impact your relationship with Bowling Green State University. We sincerely value your time and effort as a participant in this study, but please know that you are free to withdraw at any time. The risks to your health or wellbeing by taking this survey are no greater than those in routine daily life. The benefits of the current study include increased awareness of factors related to workplace safety, potentially leading to the development of more effective safety training and interventions.

You must be at least 18 years old to participate in the study.

If you wish to participate, please click the next button. By clicking the next button you are giving your informed consent to participate in this study. Again, we thank you for your participation in this study. If you have any questions, comments, or concerns about this project, feel free to contact the investigator, Ashlie Britton at arbritt@bgsu.edu (419-372-4306), or the investigator's advisor at sjex@bgsu.edu (419-372-2132). If you have questions about the conduct of this study or your rights as a participant in this research, you may contact the Bowling Green State University's Chair of Human Subjects Review Board at (419) 372-7716 or via email at hsrb@bgnet.bgsu.edu.

Sincerely,

Ashlie Britton, M.A.
Graduate Student
Department of Psychology
Bowling Green State University

Steve Jex, Ph.D.
Professor
Department of Psychology
Bowling Green State University

APPENDIX B. SURVEY MEASURES

All scales, unless otherwise specified, were assessed using a 1-5 response range where 1= *strongly disagree* and 5= *strongly agree.*

Safety Behaviors:

Safety compliance:

1. I carry out my work in a safe manner
2. I use all the necessary safety equipment to do my job
3. I use the correct safety procedures for carrying out my job
4. I ensure the highest levels of safety when I carry out my job

Safety participation:

1. I promote the safety program within the organization
2. I put in extra effort to improve the safety of the workplace
3. I help my coworkers when they are working under risky or hazardous conditions
4. I voluntarily carry out tasks or activities that help to improve workplace safety

Job Satisfaction:

1. All in all, I am satisfied with my job
2. In general, I don’t like my job
3. In general, I like working for my present employer

Organizational Commitment:

1. My organization has a great deal of personal meaning to me
2. I feel emotionally attached to my organization
3. I feel a strong sense of belonging to my organization

Stress:

Do you find your job stressful? For each of the following words or phrases, indicate "Yes" if it describes your job, "No" if it does not describe it, or "?" if you cannot decide.

1. Demanding
2. Pressured
3. Calm
4. Many things stressful
5. Hassled
6. Nerve-raking
7. More stressful than I'd like
8. Overwhelming

Burnout:

1. Indicate your level of burnout
    a. I enjoy my work. I have no symptoms of burnout.
    b. Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out.
    c. I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion.
    d. The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot.
    e. I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help.

Psychological Safety Climate:

Management Commitment to Safety:

1. Management is concerned for the safety of employees
2. Management places a strong emphasis on workplace health and safety
3. Safety is given a high priority by management
4. Management considers safety to be important

Safety Communication:

1. There is frequent communication about safety issues in this workplace
2. Employees are able to discuss their concerns about safety issues with line management
3. There is sufficient opportunity to discuss and deal with safety issues in meetings
4. There is open communication about safety issues within this workplace
5. Employees are regularly consulted about workplace health and safety issues

Safety Training:

1. Safety issues are given a high priority in training programs
2. Workplace health and safety training covers the types of situations that employees encounter in their job
3. Employees receive comprehensive training in workplace health and safety issues
4. Employees have sufficient access to workplace health and safety training programs

Safety Systems:

1. Safety procedures and practices are sufficient to prevent incidents occurring
2. There are systematic procedures in place for preventing breakdowns in workplace safety
3. The safety procedures and practices in this organization are useful and effective

Safety Motivation:

1. I believe that workplace health and safety is an important issue
2. I feel that it is worthwhile to put in effort to maintain or improve my personal safety
3. I feel that it is important to maintain safety at all times
4. I believe that it is important to reduce the risk of accidents and incidents in the workplace

Direct SSPO Fit:

1. I personally value safety the same amount that the organization value's safety
2. My personal views on safety don't match up well with my organization's views on safety
3. My organization and I place the same amount of importance on workplace safety
4. I don't feel as though my organization and I value safety to the same extent

Table 1.

Percentage of participants employed by industry.

Occupation	Percent
Production/ Manufacturing Occupations	11%
Maintenance Occupations	11%
Sales and Related Occupations	16%
Food Preparation Occupations	10%
Construction/ Extraction Occupations	2%
Fishing/ Farming/ Forestry Occupations	1%
Transportation Occupations	11%
Healthcare and Related Occupations	19%
Other (e.g., protective services, sports)	19%

Table 2

Means, standard deviations, and intercorrelations among study variables.

	M (SD)	1	2	3	4	5	6	7	8
1. Safety Motivation	4.47 (.58)	(.91)							
2. Safety Climate	3.86 (.82)	.38**	(.97)						
3. Direct SSPO Fit	3.78 (.96)	.42**	.75**	(.89)					
4. Safety Compliance	4.35 (.58)	.56**	.36**	.35**	(.90)				
5. Safety Participation	3.85 (.72)	.38**	.52**	.45**	.59**	(.74)			
6. Job Satisfaction	3.62 (1.12)	.29**	.61**	.54**	.31**	.44**	(.93)		
7. Org. Commitment	3.20 (1.14)	.05	.52**	.41**	.09	.35**	.75**	(.93)	
8. Stress	3.95 (2.78)	-.02	-.26**	-.26**	-.02	-.06	-.44**	-.35**	(.82)
9. Burnout	2.22 (.86)	-.02	-.41**	-.40**	-.07	-.27**	-.67**	-.58**	.60**

Note. Cronbach's alphas are reported along the diagonal.
N=185.
Safety Climate= Psychological Safety Climate
*p<.05; **p<.01.

Table 3

Results for psychological safety climate, safety motivation, and direct SSPO fit predicting study outcomes.

	Dependent Variable: Safety Compliance	
	Step 1 β	Step 2 β
Safety Motivation	.49**	.49**
Safety Climate	.18**	.17
Direct SSPO Fit		.02
R^2	.34	.34
ΔR^2		.00

	Dependent Variable: Org Commitment	
	Step 1 β	Step 2 β
Safety Motivation	-.17*	-.18**
Safety Climate	.58**	.50**
Direct SSPO Fit		.11
R^2	.29	.29
ΔR^2		.00

	Dependent Variable: Safety Participation	
	Step 1 β	Step 2 β
Safety Motivation	.22**	.20**
Safety Climate	.43**	.37**
Direct SSPO Fit		.09
R^2	.30	.31
ΔR^2		.01

	Dependent Variable: Stress	
	Step 1 β	Step 2 β
Safety Motivation	.10	.19
Safety Climate	-.31**	-.18
Direct SSPO Fit		-.18
R^2	.08	.09
ΔR^2		.01

	Dependent Variable: Job Satisfaction	
	Step 1 β	Step 2 β
Safety Motivation	.07	.04
Safety Climate	.69**	.45**
Direct SSPO Fit		.16
R^2	.38	.39
ΔR^2		.01

	Dependent Variable: Burnout	
	Step 1 β	Step 2 β
Safety Motivation	.16*	.20*
Safety Climate	-.49**	-.33**
Direct SSPO Fit		-.23*
R^2	.20	.22
ΔR^2		.02*

Note: Safety Climate= Psychological Safety Climate

*p<.05; **p<.01.

Table 4

Amount of discrepancy and agreement between psychological safety climate and safety motivation

Agreement Group	Percentage	Mean Climate	Mean Motivation
Climate>Motivation	2.17	3.89 (.99)	2.81 (.99)
Climate=Motivation	50	4.29 (.56)	4.39 (.57)
Climate<Motivation	47.83	3.40 (.82)	4.66 (.42)

Note. Climate= Psychological Safety Climate, Motivation=Safety Motivation; Mean Climate and Mean Motivation = Mean safety climate and mean safety motivation for participants in that agreement group; Standard deviations are shown in parentheses.

Table 5

Results for the polynomial regression and response surface analyses

	Safety Compliance	Safety Participation	Job Satisfaction	Org. Commitment	Stress	Burnout
	b (se)	*b* (se)	*b* (se)	*b* (se)	*b* (se)	*b* (se)
Constant	3.44 (.12)**	3.03 (.15)**	2.64 (.23)**	3.04 (.25)**	4.48 (.69)**	2.56 (.20)**
Safety Motivation (b_1)	.23 (.15)	.22 (.19)	.23 (.30)	-.40 (.32)	-.31 (.88)	-.32 (.25)
Safety Climate (b_2)	.40 (.16)*	.54 (.20)**	.99 (.31)**	.67 (.33)*	-1.02 (.92)	-.63 (.26)*
Safety Motivation^2 (b_3)	.15 (.07)*	.02 (.09)	-.01 (.13)	.00 (.14)	.39 (.40)	.24 (.11)*
Climate*Motivation (b_4)	-.28 (.10)**	-.22 (13)	-.09 (.19)	.03 (.21)	.09 (.58)	.08 (.16)
Safety Climate^2 (b_5)	.19 (.04)**	.20 (.06)**	-.03 (.09)	.10 (.09)	-23 (.26)	-.03 (.07)
R^2	.42**	.35**	.38**	.30**	.09**	.23**
Surface tests						
$a_1=(b_1+b_2)$	.63 (.21)**	.76 (.27)**	1.21 (.41)**	.27 (.45)	-1.32 (1.24)	-.95 (.35)**
$a_2=(b_3+b_4+b_5)$	.05 (.10)	.01 (.12)	-.13 (.17)	.13 (.19)	.26 (.53)	.29 (.15)
$a_3=(b_1-b_2)$	-.18 (.22)	-.32 (.28)	-.76 (.44)	-1.07 (.47)*	.71 (1.37)	.31 (.37)
$a_4=(b_3-b_4-b_5)$	.62 (.13)**	.44 (.18)*	.05 (.28)	.08 (.31)	.07 (1.01)	.13 (.58)

Note. b=unstandardized beta coefficients; se=standard error. Safety Climate=Psychological Safety Climate
*$p < .05$; **$p < .01$.

Table 6

Summary of results from exploratory analyses.

Outcome Variable		Safety Climate Dimension used in Fit Analysis			
		SC Management Commitment	SC Communication	SC Safety Training	SC Safety Systems
Safety Compliance	a_1	.42	.66*	.57**	.43**
	a_2	.13	.03	.05	.12
	a_3	.16	.06	-.03	-.43
	a_4	.36**	.41	.49**	.66**
		Safety compliance increases as the degree of discrepancy increases with safety motivation higher than SC management commitment	Safety compliance increases as SC communication and safety motivation increase in agreement	Safety compliance increases as SC safety training and safety motivation increase in agreement; when there is disagreement, safety compliance increases as the degree of discrepancy increases with SC safety training higher than safety motivation	Safety compliance increases as SC safety systems and safety motivation increase in agreement; when there is disagreement, safety compliance increases as the degree of discrepancy increases with SC safety systems higher than safety motivation

	a_1	.45	1.11**	.61	.47*
	a_2	.11	-.15	.02	.11
	a_3	.06	-.21	-.07	-.33
	a_4	.12	.32**	.19	.43**
Safety Participation		No significant findings	Safety participation increases as SC communication and safety motivation increase in agreement; when there is disagreement, safety participation increases as the degree of discrepancy increases with SC communication higher than safety motivation	Safety participation increases as SC safety training and safety motivation increase in agreement	Safety participation increases as SC safety systems and safety motivation increase in agreement; when there is disagreement, safety participation increases as the degree of discrepancy increases with SC safety systems higher than safety motivation
	a_1	.56	1.45**	.79*	.71*
	a_2	.14	-.27	-.19	.03
	a_3	-.18	-.43	-.26	-.99
	a_4	-.40*	-.08	-.05	.14
Job Satisfaction		Job satisfaction decreases as the degree of discrepancy increases with SC management commitment higher than safety motivation	Job satisfaction increases as SC communication and safety motivation increase in agreement	Job satisfaction increases as SC safety training and safety motivation increase in agreement	Job satisfaction increases as SC safety systems and safety motivation increase in agreement

Organizational Commitment	a_1	.03	.44	-.12	.01
	a_2	.20	.02	.22	.21
	a_3	-.85*	-.83*	-.57	-1.17
	a_4	-.10	.03	-.21	.08
		Organizational commitment is higher when SC management commitment is higher than safety motivation	Organizational commitment is higher when SC communication is higher than safety motivation	No significant findings	No significant findings
Stress	a_1	-.54	-.80	-.97	-1.12
	a_2	.00	.11	.18	.25
	a_3	.02	-.12	.15	1.91
	a_4	.63	.52	.26	-.3
		No significant findings	No significant findings	No significant findings	No significant findings
Burnout	a_1	-.36	-.91**	-.75*	-.69*
	a_2	.07	.29	.25	.23
	a_3	-.18	-.03	.06	.73
	a_4	.59**	.29	.27	-.05

	Burnout increases as the degree of discrepancy increases with SC management commitment higher than safety motivation	Burnout decreases as SC communication and safety motivation increase in agreement	Burnout decreases as SC safety training and safety motivation increase in agreement	Burnout decreases as SC safety systems and safety motivation increase in agreement

Note: SC=Safety Climate

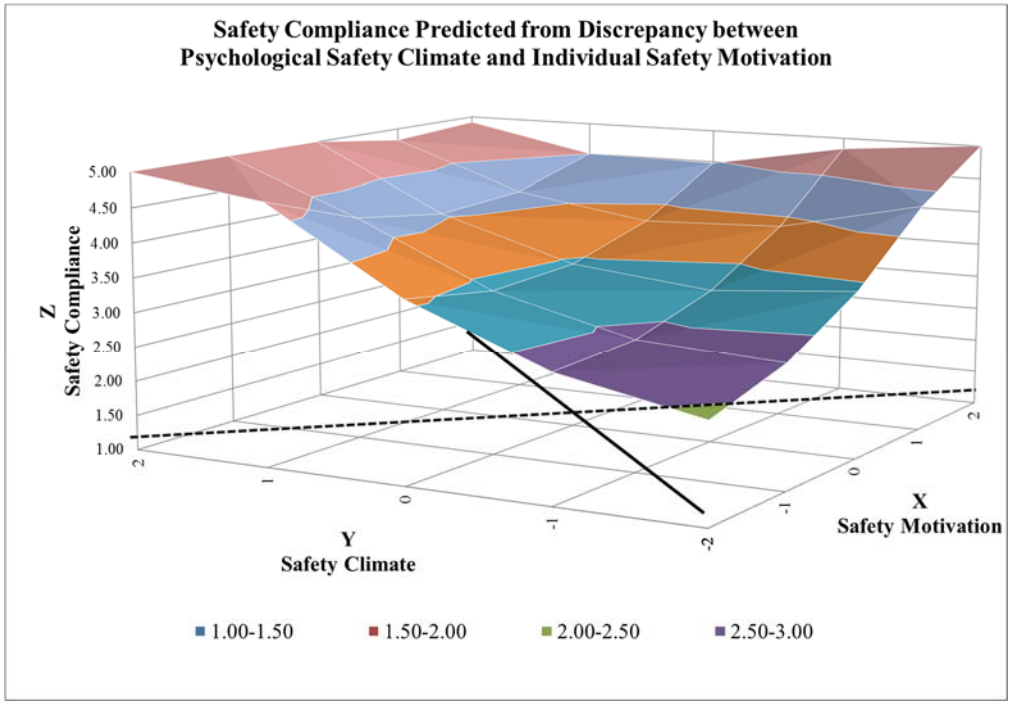

Figure 1. Response surface for safety compliance. The solid black line is along the line of perfect agreement. The dashed black line is along the line of incongruence.

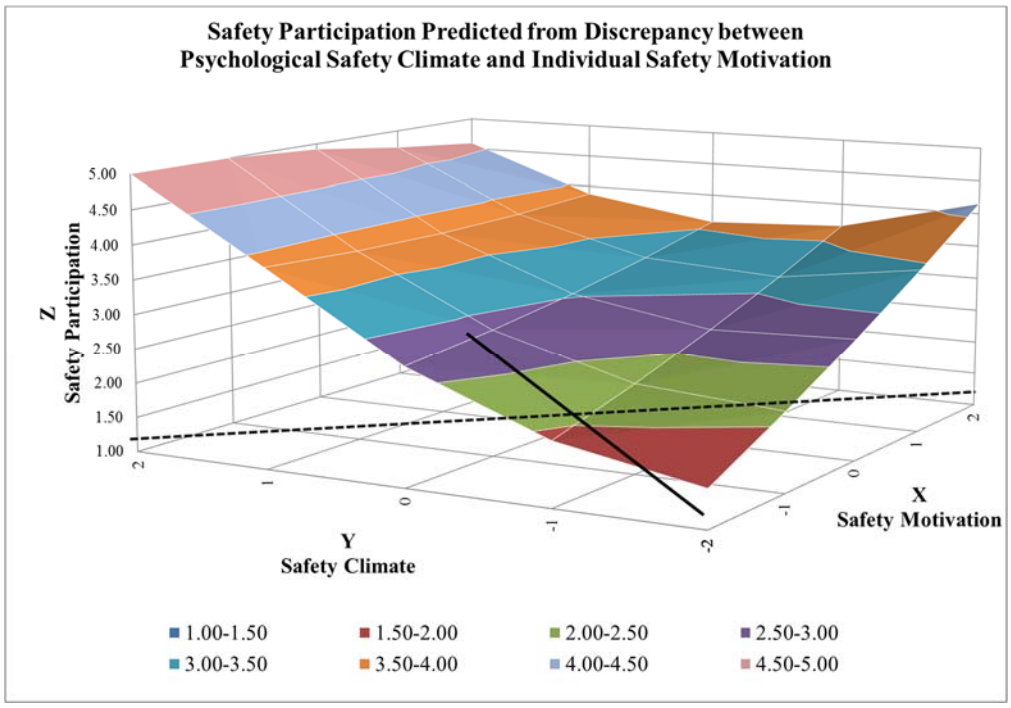

Figure 2. Response surface for safety participation. The solid black line is along the line of perfect agreement. The dashed black line is along the line of incongruence.

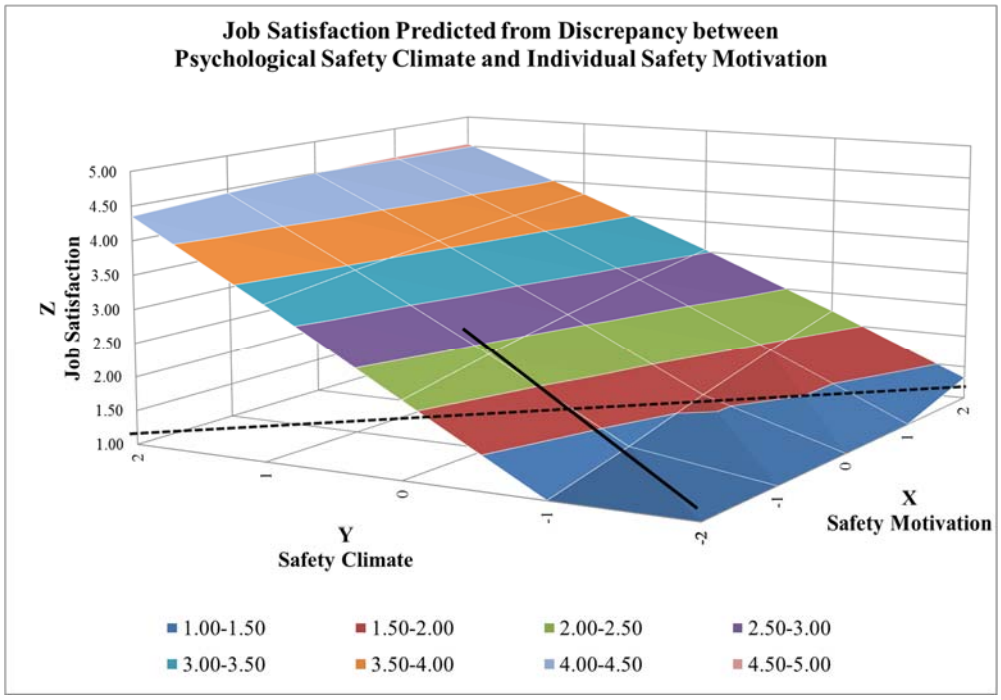

Figure 3. Response surface for job satisfaction. The solid black line is along the line of perfect agreement. The dashed black line is along the line of incongruence.

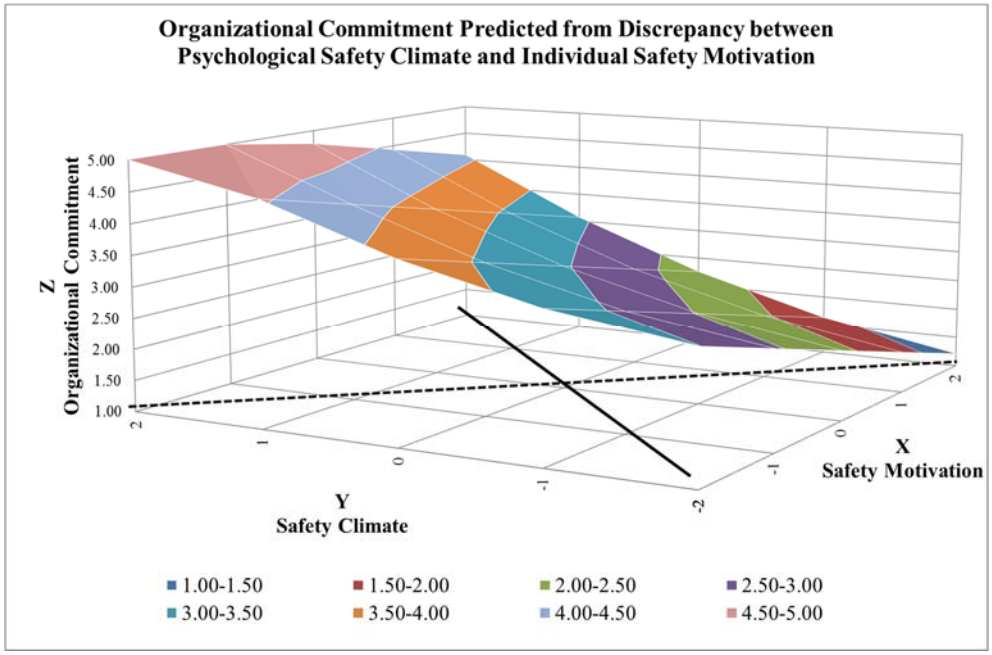

Figure 4. Response surface for organizational commitment. The solid black line is along the line of perfect agreement. The dashed black line is along the line of incongruence.

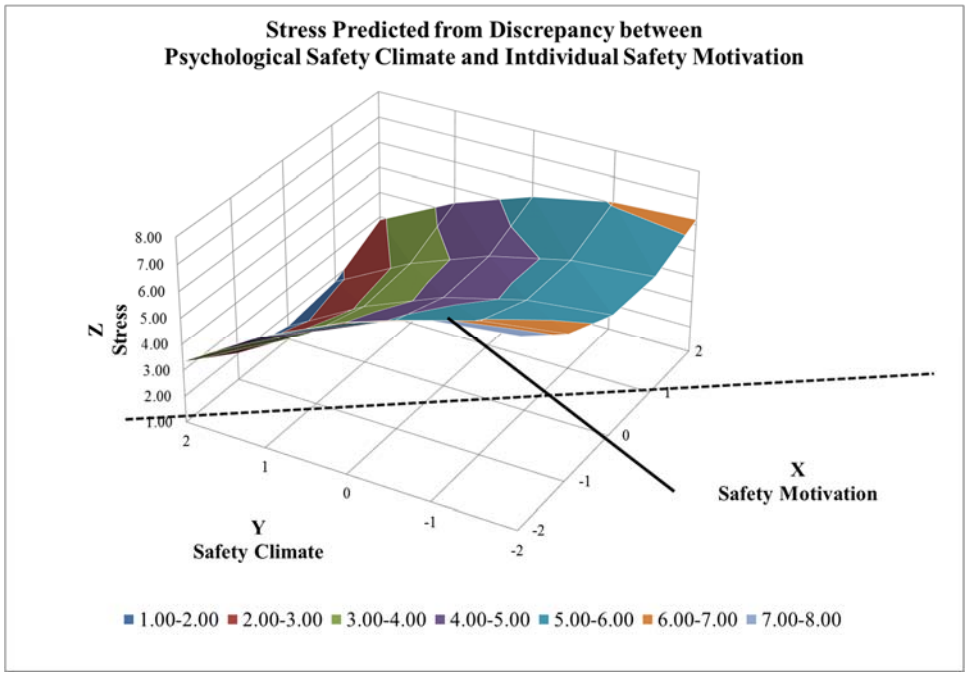

Figure 5. Response surface for stress. The solid black line is along the line of perfect agreement. The dashed black line is along the line of incongruence. The graph has been rotated 30° around the X-axis in order to fully view the relationship along the line of agreement

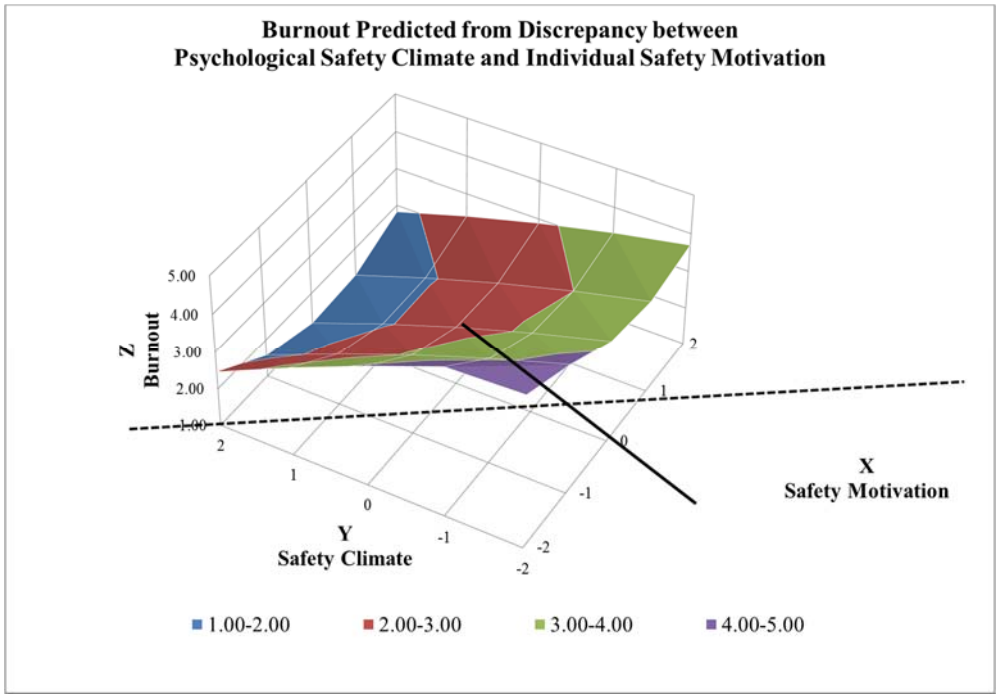

Figure 6. Response surface for job satisfaction. The solid black line is along the line of perfect agreement. The dashed black line is along the line of incongruence. The graph has been rotated 30° around the X-axis in order to fully view the relationship along the line of agreement.