Change-oriented behavior: A meta-analysis of individual and job design predictors

Sophia V. Marinova [a,*], Chunyan Peng [b], Natalia Lorinkova [c], Linn Van Dyne [d], Dan Chiaburu [e]

[a] University of Alabama in Huntsville, 323 Business Administration Building (BAB), 301 Sparkman Drive, Huntsville, AL 35899, USA
[b] Ivey School of Business, Western University, 1255 Western Road, Ivey-New Building 2334, London, Ontario N6G 0N1, Canada
[c] Department of Management, McDonough School of Business, Georgetown University, Washington, DC 20057, USA
[d] Michigan State University, N424 North Business Complex, East Lansing, MI 48824, USA
[e] Texas A&M University, Department of Management, Mays Business School, College Station, TX 77843, USA

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ABSTRACT

We propose and meta-analytically test a theoretical model of individual and job-based predictors of change-oriented behaviors. Meta-analytic tests (106 effect sizes, N = 28,402) demonstrate that employee's proactive personality is a stronger predictor of change-oriented behavior than the five-factor model (FFM) personality traits of openness and extraversion. Also, enriched job characteristics (autonomy, complexity, and task significance) are more important in predicting change-oriented behavior, than un-enriched job characteristics (routinization and formalization). Finally, we establish work engagement as a mediator that provides an explanation for how and why proactive personality and enriched job characteristics predict change-oriented behavior. We provide both theoretical and empirical integration of the literature with practical implications for managing change-oriented behaviors, which are increasingly recognized as important to both organizational effectiveness and employee career management.

For half-a-century, conceptions of organizational effectiveness have emphasized the importance of employee behaviors that sustain stability as well as those that promote innovation (Katz, 1964). In today's fast-paced, highly competitive work contexts, the second behavior identified by Katz – change-oriented employee behavior that proactively aims to promote organizational innovation – is increasingly important because ongoing organizational success is contingent on innovative employee ideas that help the organization respond to dynamic situations and meet changing customer expectations (Bettencourt, 2004; Choi, 2007; Crant, 2000; Marinova, Moon, & Van Dyne, 2010; Nemeth & Staw, 1989).

Highlighting the importance of employee behaviors that support stability as well as behaviors that are directly aimed at facilitating organizational innovation, the organizational citizenship behavior literature (OCB: Organ, Podsakoff, & MacKenzie, 2006) includes conceptual models of similarities and differences in the nomological networks of these two behaviors (Van Dyne, Cummings, & McLean Parks, 1995). Empirical research demonstrates convergence and divergence in the predictors of affiliative behaviors, such as compliant rule following and helping behaviors which enhance smooth functioning, and change-oriented behaviors such as taking charge and voice that enhance innovation (e.g. Kim, Van Dyne, Kamdar, & Johnson, 2013; McAllister, Kamdar, Morrison, & Turban, 2007; Van Dyne, Kamdar, & Joireman, 2008).

While narrative and quantitative reviews have provided cumulative insights into citizenship behavior in general and affiliative behaviors specifically (Ilies, Nahrgang, & Morgeson, 2007; LePine, Erez, & Johnson, 2002; Organ et al., 2006), the field lacks an integrated

quantitative review of individual and contextual predictors of change-oriented behaviors. This is problematic because research on change-oriented behaviors has increased in recent years (see Bindl & Parker, 2010 for a review), but the literature is fragmented. Different research teams use different terms and do not always draw on each other's work to provide a more integrated perspective. For instance, Parker, Bindl, and Strauss (2010) called for research that establishes potential communalities between such behaviors. Thus although employee change-oriented behaviors are frequently emphasized as important to organizational effectiveness and advantage (Barney, 1995; Hakanen, Perhoniemi, & Toppinen-Tanner, 2008; Jex, 2002), the fragmented state of the literature makes it difficult to ascertain if results converge to provide a systematic perspective on individual and contextual predictors of change-oriented employee behavior. Moreover, change-oriented behaviors have become more prominent in how employees manage their careers (Crant, 2000). Therefore, our study can provide insights on how individual and job design features influence *specifically* the propensity of employees to engage in proactive, change-oriented work behaviors.

Responding to this problem, we focused on individual and situational predictors of change-oriented behavior, defined as positively-intended proactive employee actions that aim to enhance work effectiveness based on initiative and changes to the work situation- for example, in work processes, services, and products. Consistent with this conceptual definition, we include proactive work behaviors (Bindl & Parker, 2010; Parker & Collins, 2010), taking charge (Morrison & Phelps, 1999), voice (Van Dyne & LePine, 1998), change-oriented citizenship (Bettencourt, 2004; Bettencourt, Gwinner, & Meuter, 2001; Choi, 2007; Seppälä, Lipponen, Bardi, & Pirttilä-Backman, 2012; Van Dyne et al., 2008), personal initiative (Frese & Fay, 2001), and creative performance (Farmer, Tierney, & Kung-McIntyre, 2003; Zhou & George, 2001) as examples of change-oriented employee behaviors.

Going beyond other meta-analyses that have examined the Big Five and change-oriented citizenship (Chiaburu, Oh, Berry, Li, & Gardner, 2011), workplace stress and voice behavior (Ng & Feldman, 2012), and employee proactivity and job performance (Thomas, Whitman, & Viswesvaran, 2010; Tornau & Frese, 2013), we examine two factors highlighted in Bindl and Parker's (2010) model of change-oriented behaviors: individual differences in personality and situational differences in job design. Thus, we focus our meta-analysis on *person-centered agentic traits* (e.g., proactive personality) and *situation-based work characteristics* (e.g., job autonomy) as predictors of change-oriented behavior. Extending prior meta-analytic research (Chiaburu et al., 2011), our approach allows for comparison of different individual differences (e.g., proactive personality vs. Big Five traits) as well as a comparison of different job design characteristics. Whereas personality characteristics can have implications for selection, training, and development (Organ, Podsakoff, & Podsakoff, 2010), job design is "a foundational influence on the actions and experiences of employees" and an "actionable feature" of work (Grant, Fried, & Juillerat, 2011, p. 419).

We aim to make three distinct key contributions to the literature. First, responding to recommendations of Parker et al. (2010), we strive to gain a deeper and more integrated understanding of personal and situational predictors of change-oriented behavior. We draw on the agency and communion distinction (Bakan, 1966; Helgeson & Fritz, 1999) and on bandwidth-fidelity arguments (Hampson, John, & Golberg, 1986; Ones & Viswesvaran, 1996) to establish the relative importance of proactive personality versus other individual traits. We also consider both enriched and un-enriched job design characteristics. Second, we consider work engagement – defined as the extent to which an employee feels fully connected and involved with her or his work activities (Christian, Garza, & Slaughter, 2011) – as a key mediating process that sheds light on one psychological mechanism that motivates change-oriented behavior. Thus we respond to calls to study the proactive motivational process more holistically (Parker et al., 2010). This is because engagement includes perceptions of cognitive, physical, and emotional connectedness to a job, capturing the multifaceted nature of proactive motivation more directly (Hakanen et al., 2008) compared to other traditional employee attitudes (such as job satisfaction and organizational commitment; Newman & Harrison, 2008). Finally, our study integrates the literature on change-oriented behavior by clarifying the conceptualization of change-oriented behavior (Schwab, 1980), based on both theory and expert ratings.

1. Theoretical model

Agentic tendencies include status seeking, autonomy, independence, and control over the environment (e.g. Paulhus & Trapnell, 2008; Wiggins & Trapnell, 1996), while communal tendencies emphasize warm and harmonious relationships with others. Contrasts of agentic and communal orientations provide a useful theoretical lens for thinking about the role of personality in work contexts (e.g. Plutchik & Conte, 1997). Theoretically, agentic traits have direct relevance to change-oriented behavior because they indicate employee's tendencies to generate change in their social environment (Bandura, 1989; Elder, 1994) and "To be an agent is to influence intentionally one's functioning or life circumstances" (Bandura, 2006, p. 164). In this study, agentic traits include proactive personality (Bateman & Crant, 1993; Fuller & Marler, 2009) and the Five-Factor traits of openness to experience and extraversion (Digman, 1997). Going beyond previous meta-analytic work on the Five-Factor model (Chiaburu et al., 2011), we develop relative impact arguments for proactive personality compared to more global personality traits.

Grant and Parker (2009) expanded the traditional view of job design and proposed a proactive perspective that includes autonomy, accountability, job complexity, routinization, and ambiguity (or low formalization) as important job characteristics that should be related to proactive behavior. Three of these (autonomy, accountability, and job complexity) represent high motivating potential. In contrast, two job characteristics (routinization and formalization) represent low motivating potential. We predict a generally positive influence for enriched and a negative effect for un-enriched job characteristics on change-oriented behavior. We also compare their relative strength in predicting employee change-oriented behavior.

Going beyond distal predictors, we also propose and test the extent to which feeling engaged with the work mediates relationships with change-oriented behavior. Figs. 1a and b summarize our model.
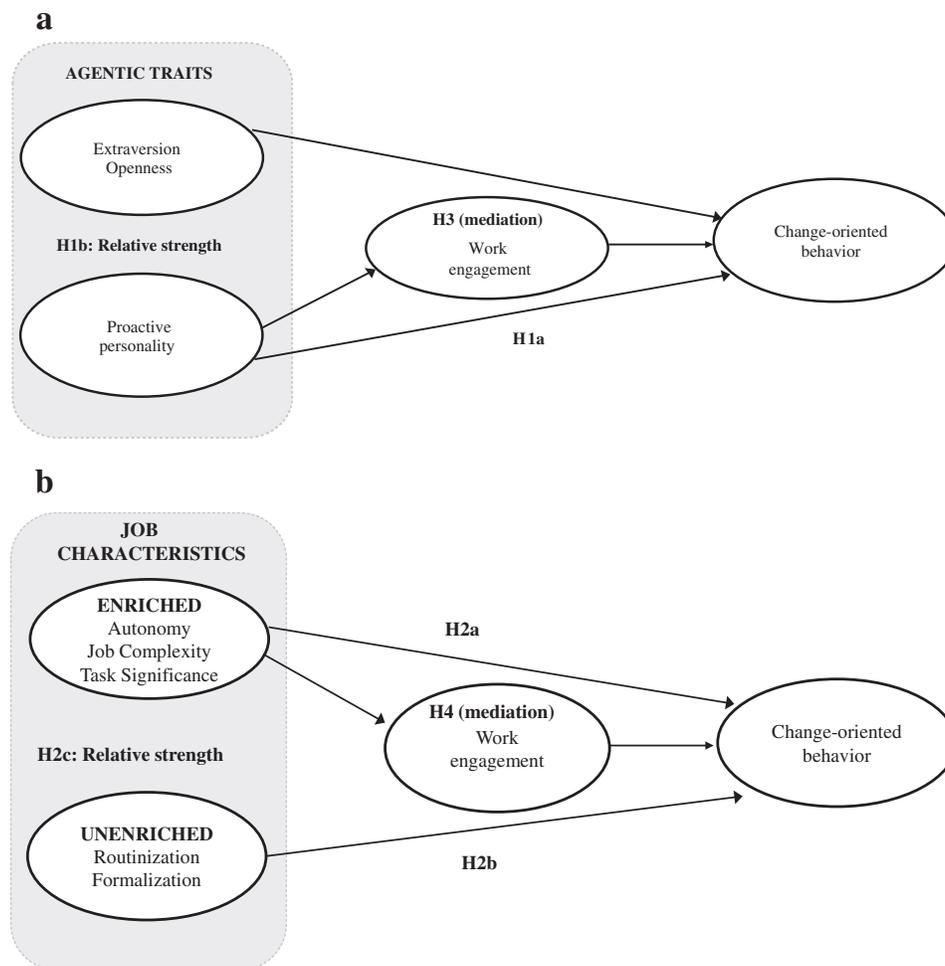
Fig. 1. a. Model of agentic traits and change-oriented behavior. b. Model of job characteristics and change-oriented behavior. *Note*. In H1a we posit a positive relationship between proactive personality and change-oriented behavior. In H1b we posit that proactive personality is a stronger predictor of change-oriented behavior compared to openness and extraversion. In H2a we propose a positive relationship between enriched characteristics and change-oriented behavior, whereas in H2b we hypothesize a negative relationship between un-enriched job characteristics and change-oriented behavior. H2c compares the relative importance of enriched and un-enriched job characteristics. In H3 and H4 we offer work engagement as a mediator of the relationship between proactive personality and enriched job characteristics with change-oriented behavior.

1.1. Defining and delimiting change-oriented behavior

To define and conceptually delimit change-oriented behaviors, we draw on and integrate the change-oriented organizational citizenship behavior with the change-oriented proactive behavior literatures. In the organizational citizenship domain, Van Dyne et al. (1995) developed a conceptual framework that differentiated constructively intended proactive employee actions aimed at improving or-ganizational effectiveness into affiliative and challenging behaviors. Podsakoff and colleagues' review of empirical studies on citizenship reinforced this point, indicating that "a key distinction between OCB dimensions is [w]hether they are affiliative versus challenging in na-ture" (Podsakoff, Whiting, Podsakoff, & Blume, 2009, p. 133). We note that although the expression of challenging ideas can be viewed as a type of change-oriented behavior, perceptions of challenge are subjective and in the eye of the beholder (Burris, 2012). Thus, we use the term change-oriented rather than challenging (Choi, 2007; McAllister et al., 2007; Van Dyne et al., 2008). Examples of constructively intended change-oriented constructs include taking charge (Morrison & Phelps, 1999), voice (Burris, 2012; Van Dyne & LePine, 1998), and change-oriented citizenship behavior (Bettencourt, 2004; Choi, 2007; Seppälä et al., 2012; Van Dyne et al., 2008).

From another direction, in the proactive domain Parker and colleagues also emphasized the importance of employee actions aimed at bringing about change (e.g. Bindl & Parker, 2010; Parker et al., 2010). Parker and Collins (2010) differentiated three types of proactive behavior: proactive work behaviors, proactive strategic behaviors, and proactive person–environment fit behaviors. Although all of these behaviors are important, to delimit the scope of the study to one set of distinct work behaviors, we focus on proactive work behaviors that aim to bring about change in the internal organization. We note that some research on proactive behavior implies positive actor intentions but does not make this point explicitly (Grant & Ashford, 2008). This could be problematic, because both positive and negative behaviors can be proactive (for clarification see Spitzmuller & Van Dyne, 2013). As examples, counter-productive work behavior, abusive supervision, theft, bullying and many other behaviors are proactive but negatively intended and harmful. Thus, to avoid confusion and to refine conceptualizations, we do not use the term proactive. We focus

specifically on change-oriented actions initiated by employees and not on reactions to organizationally-led change initiatives addressed by previous reviews (Choi, 2011; Oreg, Vakola, & Armenakis, 2011; Rafferty, Jimmieson, & Armenakis, 2013). Acknowledging the above conceptual issues, we focus on proactive change-oriented employee actions that aim to benefit the organization.

1.2. Agentic traits as predictors of change-oriented behavior

1.2.1. Proactive personality

Proactive personality is the dispositional tendency to actively monitor the environment for opportunities, persevere in overcoming obstacles, find or solve problems, and exert effort to bring about positive change (Crant, 1995). Bateman and Crant (1993) stated that "the prototypic proactive personality, as we conceive it, is one who is relatively unconstrained by situational forces, and who effects environmental change" (p. 105). Proactive people show initiative and persistence; they are forces of change. Proactive personality has an agentic focus that reinforces seeking autonomy and control over the environment (Helgeson & Fritz, 1999; Wiggins & Trapnell, 1996). Proactive personality should motivate employees to focus on the potential benefits of change-oriented behavior and to persevere even if they encounter resistance.

1.2.2. Extraversion and openness to experience

Extraversion is the dispositional tendency to seek external stimulation, attention, and dominance in social situations (Costa & McCrae, 1992). Extraverted individuals are assertive, seek excitement, like to be the center of attention, and enjoy proactive activities. Empirical research confirms the agentic focus of extraversion (e.g. Gurtman, 1997; Paulhus & Trapnell, 2008; Schaeffer, 1997). For example, Gurtman (1997) finds that statements descriptive of an extraverted individual (e.g. is assertive, is talkative) map onto the high end of the agency continuum. Additionally, extraverted individuals often emerge as leaders (e.g., Judge, Bono, Ilies, & Gerhardt, 2002) and are dominant in their environments (Grant, Gino, & Hofmann, 2011). In sum, we expect extraversion to be positively related to change-oriented behavior because taking a proactive stance on issues and engaging in change requires a propensity to be assertive and dominant (e.g., Parker & Collins, 2010).

Openness to experience is the dispositional tendency to be curious and seek new experiences (Costa & McCrae, 1992). Those high in openness enjoy novel situations and they derive intrinsic satisfaction from trying new things. Openness to experience is agentic because it represents an avid interest in new ideas, new environments, and new activities, which should involve an agentic orientation to the environment rather than passive reactions to the situation (Paulhus & Trapnell, 2008; Wiggins & Trapnell, 1996). Openness to experience is a predictor of cultural intelligence, defined as the capability to function effectively in novel cultural contexts (Ang, Van Dyne, & Koh, 2006) and scientific pursuits (Feist, 1998). In work situations, those high in openness are more likely to propose ideas for change and suggest new ways of getting work done (Madjar, 2008; Tucker, Chmiel, Turner, Hershcovis, & Stride, 2008).

Extraversion and openness, however, are multi-faceted traits (Costa & McCrae, 1992; DeYoung, Quilty, & Peterson, 2007), and some sub-dimensions are not especially relevant to change-oriented behavior. For instance, extraversion includes individual dominance (surgency), sociability, and positive emotions and research shows these are differentially related to behavior (e.g., Moon, Hollenbeck, Marinova, & Humphrey, 2008; Ones, Dilchert, Viswesvaran, & Judge, 2007). Likewise, some facets of openness relate directly to taking action to experiment with new ideas or new methods, whereas other facets are more relevant to intellectual pursuits (Costa & McCrae, 1992). Those who are high in openness could be so be attracted to the novelty of many intellectual pursuits that they do not follow through and act on all of their diverse interests and ideas.

Acknowledging the inherent tensions across sub-dimensions of these multi-dimensional constructs and going beyond prior research that shows positive relationships for extraversion and openness with change-oriented behavior (Chiaburu et al., 2011), we advance a more nuanced set of predictions. Agentic traits such as proactive personality, extraversion, and openness should all have positive relationships with change-oriented behavior, but we expect the relationship for proactive personality to be stronger. Proactive employees are both proficient in identifying opportunities for getting involved (Crant, 2000) and more likely to spring into action because of their drive "to make a difference" and "take initiative to start projects" (Bateman & Crant, 1993, p. 112). In contrast, extraversion and openness are broader, multi-dimensional constructs. Based on bandwidth-fidelity arguments (Hampson et al., 1986; Ones & Viswesvaran, 1996) and the value of using matched predictors and outcomes, we expect proactive personality to be the most relevant agentic trait, leading us to hypothesize:

H1a. Proactive personality will positively related to change-oriented behavior.

H1b. Proactive personality will be more strongly related to change-oriented behavior than agentic FFM traits (i.e., extraversion and openness to experience).

We do not include conscientiousness and agreeableness of the FFM in our hypothesis development because they are communal. Conscientious individuals are dependable and follow through on commitments (Barrick & Mount, 1991), and agreeable individuals are other-oriented, tender-minded and modest (Graziano & Eisenberg, 1997; John, Naumann, & Soto, 2008). The circumplex models of personality contrast communal (relationships) and agentic (dominance) tendencies as two axes and theoretically contrasting motivating forces. Communal traits should have less relevance to change-oriented behavior. However, for completeness, we test the predictive validity of proactive personality over and above agreeableness and conscientiousness.

1.3. Job characteristics as predictors of change-oriented behavior

Researchers have identified numerous work design characteristics (cf. Hackman & Oldham, 1976; Morgeson & Humphrey, 2006; Parker & Ohly, 2008), and some aspects of work design are more directly relevant to change-oriented behavior than others. For example, ergonomics, physical demands, and equipment use are salient to job strain, but they have less conceptual relevance to change-oriented behavior. We argue that job characteristics reflecting *enrichment* are relevant to change-oriented behavior. Herzberg, Mausner, and Snyderman (1959) introduced the term *job enrichment,* which refers to management practices designed to motivate employees by providing opportunities psychological growth.

We consider five aspects of work design that should have implications for work engagement and proactive change-oriented behavior: autonomy, task significance, job complexity, routinization, and formalization (Grant & Parker, 2009). Consistent with research that has shown both enriched and un-enriched jobs as antecedents of proactive behavior and change-oriented behavior (e.g., Bindl & Parker, 2010; Ohly, Sonnentag, & Pluntke, 2006; Oldham & Cummings, 1996; Vigoda, 2001), we examine both enriched and un-enriched job design aspects as predictors in our model. These include autonomy, task significance, job complexity, routinization, and formalization (Grant & Parker, 2009).

1.3.1. Enriched job characteristics

Building on the work of Herzberg and colleagues, Hackman and Oldham (1976) proposed five job design features that create positive psychological states of meaningfulness and responsibility at work. Among these five characteristics, *autonomy* is the sense of freedom and discretion in carrying out job activities, and *task significance* is the feeling that one's work impacts others in a significant manner. We also include *job complexity*, which reflects cognitive demands of the job (Campbell & Gingrich, 1986; Schaubroeck, Ganster, & Kemmerer, 1994) and is increasingly recognized as an important job characteristic of contemporary jobs with significant motivational implications (e.g., Humphrey, Nahrgang, & Morgeson, 2007; Van der Vegt, Emans, & Van de Vliert, 2000).[1]

When employees perceive their jobs as providing autonomy, they are likely to go beyond the narrow specifics of their written job descriptions and suggest proactive ways to change and improve work processes (Binnewies & Gromer, 2012). When individuals perceive their work has value to others (i.e., high task significance), they are likely to experience personal achievement as a result of better performance, thus engaging in continuous efforts to improve work processes. When employees view their work as high in complexity, they are likely to be more involved and stimulated to take initiative and enact changes to the status quo. This is because complex jobs provide mental challenges that can stimulate intrinsic motivation and provide opportunities for improvement (Parker & Ohly, 2008).

1.3.2. Un-enriched job characteristics

In contrast, un-enriched jobs are more likely to generate psychological boredom, prevent growth, and decrease intrinsic motivation. Accordingly, we propose that un-enriched jobs will be negatively related to change-oriented behaviors. Drawing on Grant and Parker (2009), we focus on routinization and formalization as examples of un-enriched job characteristics. Highly routinized and formalized jobs may prevent experimentation with new ideas and limit opportunities to learn new skills. They also can hinder personal growth and advancement and thus represent un-enriched job design.

Routinization is the sense that work is based on repetition, low cognitive demands, and standardization. Weiss and Ilgen (1985) defined routine behavior as "set patterns of role behaviors with minimal amounts of active information processing and decision making" (p. 57). Routinization of work may suppress initiative due to repetitiveness and automaticity (Hackman & Oldham, 1976; Ohly et al., 2006) and can be a hindrance to exploring new ideas, which is a prerequisite for engaging in change-oriented behaviors (e.g. Ford & Gioia, 2000).

Formalization is the sense that the job is governed by a highly formal structure and clear procedures (Hage & Aiken, 1969; Perrow, 1967). Formalization provides many specific rules that employees must follow (Hall, 1968). When role responsibilities are rigidly specified, employees have few opportunities to engage in change-oriented behavior. Research demonstrates that formalization can hinder bilateral communication between employees and management (Grey & Garsten, 2001; Huang & Van de Vliert, 2006), which may trigger uncertainty and fear of repercussions for change-oriented behavior, suggesting a negative effect of formalization on change-oriented actions.

In sum, enriched job characteristics (i.e., autonomy, task significance, and complexity) should be positively related to change-oriented behavior, and un-enriched job characteristics (routinization and formalization) should be negatively related to change-oriented behavior. Additionally, we posit that enriched job characteristics will be more important to change-oriented behavior than un-enriched job characteristics. In other words, motivating factors (i.e. enriched work design) rather than their absence or diminished presence (i.e. un-enriched work design) will be more salient to change-oriented behavior. This is because positive motivational features of work create a promotion focus (Parker & Ohly, 2008) and are powerful situational signals that trigger and facilitate change-oriented behavior (Kark & Van Dijk, 2007).

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[1] We note that while autonomy, task significance and job complexity have received consistent attention in the change-oriented literature, there are very few or no primary studies on the job characteristics of skill variety, task identity and feedback from Hackman & Oldham's original model and change-oriented behavior. We do not include the latter characteristics in our research model.

H2a. Enriched job characteristics will be positively related to change-oriented behavior.

H2b. Un-enriched job characteristics will be negatively related to change-oriented behavior.

H2c. Enriched job characteristics will be more strongly related to change-oriented behavior than un-enriched job characteristics.

1.4. The mediating role of work engagement

Prior theory and research have identified a number of mediators that should link individual traits and job design characteristics with proactive behaviors (e.g., Parker, Williams, & Turner, 2006; Parker et al., 2010). We propose that *work engagement* will function as a key process that helps to explain the personal (proactive personality) and situational (enriched job characteristics) predictors of change-oriented behavior. Unlike engagement, more traditional job attitudes should be less relevant for change. For example, employees with high satisfaction or commitment may feel strong attachment to the status-quo and may fail to perceive opportunities for improvement. Research suggests that under some conditions dissatisfaction (rather than satisfaction) leads to new ideas and suggestions for change (Zhou & George, 2001) because employees look for ways to change disliked situations (Farrell, 1983).

Work engagement is defined as "high levels of personal investment in the work tasks performed on a job" (Christian et al., 2011, p. 89) which result in cognitive, physical, and emotional connectedness to the work. Engaged employees are intrinsically motivated to achieve high performance on tasks they tend to have broad conceptualizations of their work roles and invest the effort to go beyond formally prescribed duties (Kahn, 1990; Piccolo, Greenbaum, den Hartog, & Folger, 2010; Rich, LePine, & Crawford, 2010). When employees feel personally connected to their work, they may suggest changes to processes in an attempt to enhance effectiveness. As predicted by H1a, proactive individuals take actions to change their circumstances and are less constrained by their environments (Bateman & Crant, 1993). Due to their proclivity for identifying opportunities and taking action, those with proactive personality should experience high levels of work engagement. Proactive individuals should have a sense of personal investment at work (Kahn, 1990) because they get involved in the job and take initiative to solve problems (Bateman & Crant, 1993). When people naturally enjoy taking the initiative (high proactive personality), they are predisposed to take action and create a sense of personal connectedness to their work roles.

H3. Work engagement will partially mediate the relationship between proactive personality and change-oriented behavior.

We further argue that enriched job characteristics should contribute to higher engagement with work. Specifically, the autonomy in performing work as one sees fit is a job resource that can increase personal connections to work and work engagement (Bakker, 2011; Crawford, LePine, & Rich, 2010; Hakanen et al., 2008; Kahn, 1990). Task significance increases perceived meaningfulness, feelings of responsibility, and the sense that one's work makes a positive difference for others (Fuller, Marler, & Hester, 2006; Hackman & Oldham, 1976). These positive psychological states should foster work engagement. Likewise, job complexity provides employees with challenging work and opportunities for mastery (Frese & Fay, 2001). Complex jobs stimulate arousal and interest (Chung-Yan, 2010), require more time to complete, and generate sustained mental, physical and emotional connections to the work (Ng & Feldman, 2008). In sum, enriched work as reflected by the job characteristics of autonomy, task significance, and job complexity should lead to high levels of work engagement, with implications for change-oriented behavior. Therefore, we predict that work engagement will function as a partial mediator in the relationship between enriched job characteristics and change-oriented behavior.

H4. Work engagement will partially mediate the relationship between enriched job characteristics and change-oriented behavior.

We did not predict a mediating role for work engagement in linking openness and extraversion to change-oriented behaviors or un-enriched job characteristics with change-oriented behavior, for several reasons. First, given our relative impact hypotheses, we focused on those individual and contextual factors of greater theoretical importance. For instance, although hindrance demands may be detrimental to engagement (e.g., Crawford et al., 2010), un-enriched job characteristics could make a job undemanding. Importantly, we have insufficient data to perform meta-analytical tests of work engagement as a mediator linking these predictors with change-oriented behavior. Also, the multi-faceted nature of openness may prevent a clear picture from emerging with regards to engagement. Finally, even though extraversion may relate to work engagement, and in turn, influence change-oriented behavior, we were unable to test this meta-analytic mediation path due to lack of data.

2. Method

2.1. Change-oriented behavior validity evidence

As explained earlier in the paper, we define change-oriented behavior as employee efforts to constructively change the work situation with the intention of benefiting the organization. Accordingly, we focused only on behaviors, which clearly fit our definition. To assure rigor, we took the following steps to decide which constructs to include in the criterion space analyses: (a) an extensive literature review of existing definitions of change-related behaviors, (b) expert ratings and content validity evidence based on item-level information, (c) constructs used in other meta-analyses, and (d) examination of the scales used to measure the constructs. Based on these efforts, we focused specifically on taking charge, personal initiative, creativity, innovative performance, and voice.

We note that we did not include affiliative or generally prosocial behaviors in our analysis because they do not fit the change-oriented conceptualization and they have been covered in prior meta-analyses (e.g., Ilies et al., 2007; Podsakoff et al., 2009). Consistent with our conceptual definition, we limited constructs included in the criterion space to behaviors.

We also scrutinized constructs at the item level and limited our analysis to behaviors that were clearly change-oriented. Even though some constructs (e.g., organizational spontaneity, prosocial behaviors) contain some change-oriented items, other items in these measures are not related to change. For example, prosocial behavior measures sometimes include change-related items such as "offers ideas to improve the functioning of the department" and affiliative items such as "uses tact when dealing with others." When measures included a mix of items, we did not include the construct.

To triangulate our approach to delimiting the criterion space of change-oriented behavior, we obtained expert ratings from researchers in management and industrial and organizational psychology departments (27 researchers, including eleven faculty and sixteen advanced PhD students, all blind to the objectives of the study) on affiliative and change-oriented behaviors. We provided respondents with construct names and definitions of different types of constructively intended behaviors and had them sort this information into change-oriented and affiliative categories. We examined agreement across these experts by calculating the percentage of substantive agreement (correctly classified responses, based on Anderson & Gerbing, 1991) and we retained constructs with a high degree of agreement across raters (at least 80% agreement, over 90% average agreement). In line with our expectations, these behaviors included taking charge, personal initiative, creative performance, innovative performance, voice, and proactive work behavior. In sum, based on both theoretical and empirical criteria, we included specific change-oriented behaviors only if they had a clear and consistent emphasis on constructively-intended change.

2.2. Identification of studies

We used several strategies to locate relevant studies. First, we conducted a broad search for primary studies on change-oriented behavior in PsycInfo, ABI/INFORM, and ERIC databases. We used a variety of keywords, such as change-oriented OCB, innovative performance, championing, individual initiative, personal initiative, taking charge, speaking up, and voice. Second, we searched for unpublished dissertations in the ProQuest database. Third, we searched for in-press and unpublished articles by examining conference proceedings and contacting prominent scholars with published research in this area. Finally, we scrutinized all studies included in prior meta-analytic reviews on citizenship and proactive behaviors (e.g., Chiaburu & Harrison, 2008; Chiaburu et al., 2011; Dalal, 2005; Hoffman, Blair, Meriac, & Woehr, 2007; Ilies, Fulmer, Spitzmuller, & Johnson, 2009; LePine et al., 2002; Podsakoff et al., 2009). This initial search yielded over 400 studies.

We examined these primary studies on the basis of predetermined criteria and only included studies in our meta-analytic database if they included change-oriented employee behavior in work organizations (i.e., field settings). Further, to be included in our analysis, studies had to include correlation coefficients or information that allowed us to calculate correlations. Structural equation models, for example, were included only when authors responded to our requests for more details. Additionally, keeping in mind that the principal unit of analysis in meta-analysis is the individual study, we examined effect sizes and when a study reported effect sizes from separate samples (e.g., Study 1; Study 2) we coded and kept those effect sizes as separate in our dataset. Since some studies report effect sizes for multiple focal constructs (e.g., proactive personality–change-oriented behavior; and autonomy–change-oriented behavior), the total number of effect sizes exceeds the number of studies. Overall, applying these inclusion and exclusion criteria generated 106 relevant effect sizes (N = 28,402) for our primary hypotheses analysis involving our hypothesized job characteristics predictors, agentic traits predictors and change-oriented behaviors. We note that our supplementary analyses and mediation analyses included additional studies described in their respective sections of the method.

2.3. Coding scheme and study characteristics

Following procedures recommended by Lipsey and Wilson (2001), we developed a coding scheme which classified the *predictors* of change-oriented behavior into agentic traits and job characteristics so we could consider both person-centered predictors and situation-based work design predictors.

2.3.1. Agentic traits

The first broad coding category is *agentic traits*, which reflect individual's inclination to take agentic actions toward the environment. In line with existing research, this category includes proactive personality (Parker et al., 2006) and two of the FFM personality traits: extraversion and openness to experience (Digman, 1997). To assure rigorous operationalizations of extraversion and openness, we only included studies that used validated scales (e.g. Costa & McCrae, 1992; Goldberg, 2000; John et al., 2008). We did not include primary studies where authors used proxy constructs to substitute for extraversion or openness (e.g., positive affectivity as a proxy for extraversion).

2.3.2. Job characteristics

We included autonomy, task significance, and job complexity as enriched job characteristics, and routinization and formalization as un-enriched job characteristics. We examined the measures of these job characteristics to make sure we included and coded only the characteristics that were clearly aligned with our theoretical definitions. Also to maintain measurement consistency, we included only self-reported characteristics (very few studies used objective coding and/or other report).

2.3.3. Coding

Two of the authors independently did the coding. First, they separately coded twenty studies randomly selected from the database for information on effect sizes, sample sizes, statistical artifacts, as well as type of predictor (e.g., proactive personality, extroversion, openness to experience and job characteristics). Initial inter-rater agreement was 92% and discrepancies were resolved by phone conversations and one-on-one meetings between the two coders. Subsequent coding was done independently by the same two authors. Another author double-checked conceptual definitions in articles for constructs included in the analysis and spot-checked the data for accuracy to ensure that the coding corresponded to the conceptual definitions.

2.3.4. Supplementary analyses

To rule out alternative interpretations and strengthen inferences about proactive personality, extraversion, and openness, we included two additional traits from the Big Five (conscientiousness and agreeableness) that have been previously linked to affiliative behaviors (Kamdar & Van Dyne, 2007) but have weak relationships to change-oriented behavior (Chiaburu et al., 2011). We coded studies, which used validated scales (e.g. Costa & McCrae, 1992; Goldberg, 2000; John et al., 2008) for agreeableness and conscientiousness. This resulted in an additional 25 effect sizes (N = 5889).

We also compared the strength of work engagement in predicting change-oriented behavior compared to two common job attitudes: satisfaction and commitment. We composed a 4 x 4 correlation matrix in which the true score correlations between job attitudes (i.e., job satisfaction, commitment, and work engagement) and change-oriented behavior were based on the primary studies coded in our data-set and the inter-correlations between job attitudes were from Christian et al. (2011). We regressed change-oriented behavior on satisfaction and commitment in Step 1; and added engagement in Step 2 to estimate the contribution of engagement to predictions of change-oriented behavior. The analysis involving the relationships between job satisfaction, work engagement, and commitment with change-oriented behavior was based on additional 77 effect sizes and an N = 31,133.

2.4. Meta-analytic techniques

We used Origin (version 8, sub-version 8.5 — detailed description is available at www.originlab.com) as data analysis software. We followed the random-effects meta-analytical procedure described by Hunter and Schmidt (2004) to cumulate the effect sizes reported in the primary studies and estimate the fully corrected population correlations. This procedure allows for adjustments in the observed effect sizes and correction for study artifacts, such as measurement error and sampling error. Specifically, we corrected for measurement error by adjusting correlations for unreliability in both independent and dependent variables. We obtained coefficients alpha from the primary studies, and when the original studies did not report construct reliabilities, we contacted the authors to obtain this information. For the few remaining missing values where we were not able to obtain this information, we used average values from primary studies examining the same relationship, as done in previous meta-analyses (e.g., Balkundi & Harrison, 2006; Ilies et al., 2007). To ensure that we addressed imputation correctly (Fichman & Cummings, 2003), we also used two other methods: substituting reliability information for focal constructs from existing data in other meta-analysis (Chang, Rosen, & Levy, 2009; Viswesvaran, Ones, & Schmidt, 1996) (Method 2) and a hypothetical artifact distribution (Heugens & Lander, 2009) (Method 3). Results showed no meaningful differences so we retained the mean reliabilities for the analyses reported in our tables. Mean reliabilities used in our analyses ranged from .74 (for formalization) to .89 (for change-oriented behavior). We did not correct for range restriction due to unavailability of these data.

Before estimating the fully corrected population correlations, we verified that the effect sizes included in our meta-analysis were independent. Thus, when the original studies provided multiple estimates of the correlation within a single sample for the same focal effect we combined them into one correlation by using the formula for composites (Hunter & Schmidt, 2004, p. 433–434). We report 95% confidence intervals (CI) and 80% credibility intervals (CV) around the estimate of the fully corrected population correlations. Confidence intervals provide an estimate of the estimated mean correlation, and credibility intervals indicate the extent to which the corrected individual correlations (the estimated population correlations) vary for a particular analysis distribution across studies (Hunter & Schmidt, 2004). We also report the percentage of variability in correlations accounted for by statistical artifacts (measurement and sampling error).

2.4.1. Procedure for conditional model estimates for relative impact of predictors

To determine the relative impact of each predictor on change-oriented behavior, we utilized a conditional modeling approach where the predictors (moderators) were modeled with dummy variables (e. g., Seibert, Wang, & Courtright, 2011). This conditional modeling approach is a modified type of weighted least squares regression (WLS) in which the effect sizes are weighted by the inverse variance weight (w) to account for differences in precision (Heugens & Lander, 2009; Lipsey & Wilson, 2001). This type of analysis is akin to Hedges and Olkin (1985) widely used regression approach to meta-analysis (e.g., Carney, Gedajlovic, Heugens, van Essen, & van Oosterhout, 2011; Heugens & Lander, 2009; Lipsey & Wilson, 2001; Mueller, Rosenbusch, & Bausch, 2013) – or meta-analytic regression analysis (MARA) – in which effect sizes are weighted by "w" (the inverse of their standard error) and the dependent variable is the effect size for the main relationship.

Specifically, we coded the sets of predictors into dummy variables, on which we regressed the correlation coefficients between the predictors and change-oriented behavior. For example, to compare the relative impact of proactive personality (compared to extraversion and openness (H1b)), we coded extraversion and openness 0 as the reference group (or base-line group) and coded proactive personality 1 as the focal group. We then regressed the correlation coefficients on this dummy variable. The regression output provides the intercept coefficient (β_0) for the reference group (i.e., extraversion and openness) and the regression coefficient (β_1)

for the focal group (i.e., proactive personality). A significant intercept coefficient indicates the overall effect size for the reference group is significantly different from zero and a significant regression coefficient (positive or negative) indicates the effect size for the focal group is significantly different from the reference group (stronger or weaker respectively).

Since each group of predictors is coded as a vector of predictor variables (e.g. proactive personality effect sizes are coded on one vector and the effect sizes for extraversion and openness to experience are coded on a separate vector), correlations *within* predictor groups should be of no concern. Therefore, our test is similar to an independent sample t-test in which we compare two independent groups of effect-sizes, and our regression technique thus is suitable for this situation.

2.4.2. Mediation tests

We based mediation tests on meta-analytic correlation matrices and harmonic means (Viswesvaran & Ones, 1995). The meta-analytic correlation matrices were based on our meta-analytic database, supplemented by effect sizes from other meta-analyses where necessary. Specifically, to test work engagement as a mediator of proactive personality and change-oriented behavior, we constructed a 3×3 correlation matrix. The bi-variate relationships extracted from our database were supplemented with the correlation between proactive personality and work engagement (Christian et al., 2011). For the 3×3 correlation matrices connecting job design constructs through work engagement (mediator) with change-oriented behavior, we used the information from our database and correlations between specific job characteristics and work engagement reported by Christian and colleagues. Given unequal sample sizes across meta-analytic cells, we calculated and used the harmonic mean of the sample sizes from the original studies. We examined mediation using a series of regressions. We first examined the relationship between the predictor and change-oriented behavior. We then regressed the mediator on the predictor. Finally, we entered both the predictor and the mediator in the regression equation.

2.5. Results

Table 1 summarizes the meta-analytical results for the correlations between agentic traits and change-oriented behavior and shows that proactive personality ($\rho = .46$, $k = 10$, $N = 3442$) was positive and significant in predicting change-oriented behavior. The 95% confidence interval (CI) ranged from .44 to .47, indicating a significant and positive estimated population correlation. Additionally, the 80% credibility interval (CV) calculated around the estimated population correlation was .30 to .61 and excluded zero, indicating that the entire distribution of the estimated population correlations was in the expected positive direction. Thus, Hypothesis 1a was supported. Similarly, the relationships of openness ($\rho = .26$, 95% CI $= .24$ to .28, 80% CV $= .14$ to .38) and extraversion ($\rho = .34$, 95% CI $= .33$ to .34, 80% CV $= .26$ to .41) with change-oriented behavior were significant and positive.

We proposed in H1b that proactive personality would have a stronger relationship than openness and extraversion with change-oriented behavior. We tested this hypothesis by coding the predictors into a dummy variable (1 = proactive personality, and 0 = openness and extraversion) utilizing the (WLS) regression conditional modeling approach described in the methods section. Results reported in Table 2 show a significant intercept coefficient ($\beta_0 = .26$, $p < .001$) indicating that openness and extraversion had a positive effect on change-oriented behavior. As reported in Table 2, the regression coefficient of proactive personality was significant ($\beta_1 = .21$, $p < .01$) over and above the baseline model, demonstrating that the relationship between proactive personality and change-oriented behavior was significantly stronger than the relationship of openness and extraversion with change-oriented behavior. This supports H1b.

H2a proposed that enriched job characteristics (i.e., autonomy, task significance, and job complexity) would be positively related to change-oriented behavior, and H2b predicted that un-enriched job characteristics (routinization and formalization) would be negatively related. Supporting H2a, Table 1 shows enriched job characteristics-overall positively related to change-oriented behavior ($\rho = .38$, k = 55, N = 13,910) with separate job characteristics: autonomy ($\rho = .38$, k = 31, N = 7252), task significance ($\rho = .40$,

Table 1

Meta-analysis results for the relationships of agentic traits and job characteristics with change-oriented behavior.

Variables	k	N	r	ρ	s. e. ρ	95% CI	s. d. ρ	80% CV	% Var
Agentic traits									
Proactive personality	10	3442	.25	.46	.01	(.44, .47)	.12	(.30, .61)	74%
Openness	20	5601	.17	.26	.01	(.24, .28)	.09	(.14, .38)	75%
Extraversion	8	2855	.20	.34	.004	(.33, .34)	.06	(.26, .41)	97%
Job characteristics									
Enriched-overall	55	13,910	.26	.38	.01	(.37, .39)	.09	(.25, .49)	100%
Autonomy	31	7252	.25	.38	.01	(.37, .40)	.08	(.28, .49)	100%
Task significance	11	3433	.26	.40	.02	(.36, .44)	.07	(.31, .50)	100%
Job complexity	13	3225	.30	.40	.01	(.39, .42)	.12	(.25, .57)	100%
Un-enriched-overall	13	2594	−.06	−.08	.01	(−.10; −.06)	.15	(−.27; .11)	100%
Routinization	5	1025	−.05	−.06	.01	(−.08; −.04)	.14	(−.25, .13)	100%
Formalization	8	1569	−.07	−.09	.01	(−.11, −.07)	.15	(−.29, .10)	100%

Note. k = number of effect sizes; N = number of subjects; r = the mean, sample-weighted correlation, ρ = the estimate of the fully corrected population correlation; s. e. ρ. is the standard error of the estimate of the fully corrected population correlation; 95% CI is the 95% confidence interval around the estimate of the fully corrected population correlation; s. d. ρ is the standard deviation of the estimate of the fully corrected population correlation; 80% CV is the 80% credibility interval around the estimate of the fully corrected population correlation; % Var is the percentage of observed variance accounted for by statistical artifacts (sampling error and measurement error).

Table 2
Results of conditional model estimates for relative impact of predictors on change-oriented behavior.

Predictor	Coefficient (population estimated correlations)	Coefficient (uncorrected correlations)	Number of correlations/total sample size
Model 1			38/11,898
Openness and extraversion [a]	.26***	.16***	
Proactive personality	.21**	.09*	
Model 2			54/15,511
Openness, extraversion and conscientiousness [a]	.23***	.15***	
Proactive personality	.25***	.11**	
Model 3			63/17,787
Openness, extraversion, conscientiousness, and agreeableness [a]	.20***	.13***	
Proactive personality	.27***	.12***	
Model 4			68/16,504
Un-enriched job characteristics [b]	−.05	−.04	
Enriched job characteristics	.44***	.31***	

[a] The referenced variables are coded as 0 and used as baseline for the model.
[b] Un-enriched job characteristics were used as the base line for the model and coded as 0.
* $p < .05$;
** $p < .01$;
*** $p < .001$.

k = 11, N = 3433), and job complexity ($\rho = .40$, k = 13, N = 3225) also positively related to change-oriented behavior. None of the confidence intervals or credibility intervals included zero. Thus, these relationships were different from zero at the .05 level and generalizable in the expected positive direction.

As reported in Table 1, un-enriched characteristics were negatively related to change-oriented behavior ($\rho = -.08$, k = 13, N = 2594). The 95% CI did not include zero, thus indicating that on average the relationship is negative, but the 80% CV included zero. This indicates that some population correlations were positive and others were negative. Routinization was negatively correlated with change-oriented behavior ($\rho = -.06$, k = 5, N = 1025), with the 95% CI not including zero (CI = −.08 to −.04). This shows that the relationship on average is negative. The CV includes zero (−.25 to .13) indicating that some of the estimated population correlations are positive. Similarly, the relationship of formalization with change-oriented behavior was negative ($\rho = -.09$, k = 8, N = 1569) and significant (95% CI = −.11 to −.07), but the CV included zero, indicating that not all population estimated correlations were negative. In sum, H2b was partially supported.

Table 2, Model 4 reports results for H2c. Enriched job characteristics were more strongly related to change-oriented behavior than un-enriched characteristics. The regression coefficient of the dummy variable for enriched characteristics was positive and significant ($\beta_1 = .44$, $p < .001$) compared to the baseline model with un-enriched characteristics ($\beta_0 = -.05$, p > .05) demonstrating that the relationship between enriched characteristics and change-oriented behavior was stronger than that between un-enriched characteristics and change-oriented behavior. These results support H2c.

H3 proposed that work engagement would partially mediate the effects of proactive personality on change-oriented behavior. Analysis, as described in the method section, demonstrated a positive relationship between proactive personality and change-oriented behavior ($\rho = .46$, as shown in Table 1) and a positive relationships between proactive personality and work engagement ($\rho = .44$). Finally, when we entered both proactive personality and work engagement in the regression equation the strength of the relationship between proactive personality and change-oriented behavior decreased ($\Delta\beta$: .46 to .26). Moreover, including work engagement in the regression explained an additional 17% of variance in change-oriented behavior, supporting H3.

Results also support H4. Job characteristics were positively related to change-oriented behavior (.38 for autonomy; .40 for task significance, and .40 for job complexity). Job characteristics were also positively related to work engagement (.39 for autonomy; .51 for task significance; and .24 for job complexity). When we added work engagement to the autonomy equation, the relationship between autonomy and change-oriented behavior decreased ($\Delta\beta$: .38 to .19), and the variance explained increased from 14% to 35%. Similarly, the addition of work engagement to the task significance equation decreased the relationship of task significance and change-oriented behavior ($\Delta\beta$: .40 to .15) and the R^2 increased from 16% to 34%. Finally, when we added work engagement to the job complexity equation, the relationship decreased ($\Delta\beta$: .40 to .26) and the R^2 increased from 14% to 40%. Results fully support H4.

2.6. Supplementary analysis results

The supplementary analysis reported in Table 2, Model 2 show that proactive personality was a stronger predictor compared to openness, extraversion and conscientiousness ($\beta_1 = .25$, $p < .001$). Likewise, Table 2, Model 3 shows that proactive personality was a stronger predictor compared to openness, extraversion, conscientiousness and agreeableness ($\beta_1 = .27$, $p < .001$). We also examined the relationship between work engagement and change-oriented behavior while controlling for satisfaction and commitment. In Step 2, work engagement explained an additional 23% of variance in change-oriented behavior above and beyond satisfaction and commitment ($\beta_{engagement} = .61$, ΔR^2: .23, $p < .001$) compared to 10% explained by satisfaction and commitment in Step 1.

3. Discussion

Change-oriented behaviors increasingly attract researchers' attention as evidenced by theoretical arguments, models, and frameworks on personal initiative (Frese & Fay, 2001; Rank, Pace, & Frese, 2004), extra-role behavior (Van Dyne et al., 1995), change-oriented OCB (Bettencourt, 2004), voice (Burris, 2012; Ellis & Van Dyne, 2009; Greenberg & Edwards, 2009; Kish-Gephart, Detert, Treviño, & Edmondson, 2009), taking charge (McAllister et al., 2007; Morrison & Phelps, 1999), creative performance (Farmer et al., 2003; Zhou & George, 2001), and proactive behaviors (Bindl & Parker, 2010; Grant & Ashford, 2008; Parker et al., 2010). To date, however, the amount of conceptual and theoretical interest contrasts sharply with the absence of empirical integration across studies. When primary studies report inconsistent results, it is difficult for researchers and practitioners to interpret findings and reach accurate conclusions. For instance, Bindl and Parker (2010) highlighted job design characteristics and individual traits as important predictors of change-oriented behavior and called for integrative research on predictors and intervening processes that clarify research findings on change-oriented behaviors. In response, our objective was to meta-analytically test a theoretical framework integrating individual and job design characteristic as predictors of change-oriented behavior, with work engagement as a key intervening (mediating) process.

3.1. Theoretical implications

First, we clarified the conceptualization of change-oriented behavior, provided concrete examples of these behaviors, and used expert ratings to triangulate our approach. We explained how change-oriented behavior differs from related constructs and proposed an integration of the change-oriented citizenship behavior literature and change-oriented proactive behavior literature.

Second, results demonstrate across studies that agentic traits are positively associated with change-oriented behavior and also show that proactive personality is a stronger predictor than the broader Five Factor agentic personality traits of extraversion and openness. Thus, our theory and findings extend prior arguments and provide additional empirical evidence on the value of studying predictors with direct relevance to particular outcomes. In our case, the more general and distal traits of openness to experience and extraversion had lower predictive validity than the more specific predictor of proactive personality. Moreover, supplementary analysis revealed that proactive personality is a stronger predictor of change-oriented behavior compared to the communal traits of agreeableness and conscientiousness.

Third, we clarified the direction of the relationships between enriched and un-enriched job design and change-oriented behavior. Results provide strong support for the notion that enriched characteristics contribute positively to change-oriented behavior. Although confidence intervals demonstrated that un-enriched jobs generally have a negative relationship with change-oriented behavior, credibility intervals reveal that relationships are sometimes positive and sometimes negative. Thus, un-enriched characteristics, contrary to expectations, do not necessarily impede engagement in change-oriented behavior. This suggests the need for further refinement in theoretical work on un-enriched job characteristics as described in more detail later in the discussion.

Fourth, results demonstrated that enriched job characteristics are a better predictor of change-oriented behavior than un-enriched job characteristics. This is consistent with the notion that change-oriented actions are largely driven by motivating factors (i.e., enriched work design) rather than the lack of motivating factors (i.e., un-enriched work design). Our results also support the importance of job complexity for change-oriented behavior and indicate the need to expand traditional conceptualizations of work design to place greater emphasis on job complexity. Specifically, from a theoretical standpoint, the role of job complexity relative to change-oriented behavior is less straightforward compared to that of autonomy and task significance. This is because job complexity can overload employee's cognitive capabilities, create stress (Xie, Schaubroeck, & Lam, 2008), and reduce the psychological resources that facilitate change-oriented behavior (Elsbach & Hargadon, 2006). Yet, studies have demonstrated that job complexity promotes creativity (Shalley, Gilson, & Blum, 2009) and personal initiative (Frese, Garst, & Fay, 2007). Our findings support a generalizable positive relationship between job complexity and change-oriented behavior.

Fifth, we demonstrated that employee work engagement functions as a mediator that provides one compelling explanation for how individual traits and job characteristics translate into change-oriented behavior. To date, primary studies have tested employee's control and responsibility aspirations (Frese & Fay, 2001; Frese et al., 2007; Fuller et al., 2006) and proactive cognitive-motivational states (Parker et al., 2006) as possible mediators. Work engagement is another critical motivational state that captures both affective and cognitive reactions toward work (Kahn, 1990; Rich et al., 2010).

Supplementary analyses supported the notion that work engagement is more important than job satisfaction and organizational commitment in predicting change-oriented behavior. Although commitment and job satisfaction are positive employee attitudes, they are more oriented toward the status quo. By comparison, work engagement captures how much an employee is fully connected to her or his job and is closely aligned with a desire for continuous improvement.

In sum, the current meta-analysis has important strengths. First, through conditional modeling analysis we estimated the relative strength of competing predictors. Second, we tested a complex model, involving mediation. Further, our study extends prior meta-analyses (e.g., Chiaburu et al., 2011; Thomas et al., 2010; Tornau & Frese, 2013) because it goes beyond the five-factor model traits as predictors and does not limit the criterion to overall performance (Thomas et al., 2010). Our study also extends prior work that has considered the five-factor model personality traits but ignored job characteristics (Chiaburu et al., 2011) and research that limited job characteristics to job control and social support (Tornau & Frese, 2013).

3.2. Practical implications

Our results provide practitioners with assurance that one way to increase employee change-oriented behavior is by hiring individuals with proactive personality. They also can provide positive reinforcement to those who act on their proactive tendencies by responding openly and supportively to employee suggestions so that this enhances work engagement. Additionally, positive responses to change-oriented behaviors should reduce employee fears about possible negative consequences. Secondly, managers can foster enriched job characteristics. Specifically, they can offer autonomy as one path to work engagement and change-oriented behavior. They also can build task significance into jobs by creating meaningful work. Designing jobs that offer mental challenge and require more complex application of skills is another predictor of change-oriented behavior, showing the value of considering contemporary conceptualizations of job design. Importantly, since leaders are often viewed as meaning-makers, they can be proactive not only in enriching job descriptions, but they can also provide the communication and role modeling to facilitate enriched jobs (e.g., Piccolo et al., 2010).

By comparison, the implications regarding un-enriched job design are less clear. The confidence intervals for un-enriched characteristics suggest a zero-order negative relationship with change-oriented behavior, but the credibility intervals show variability and some cases of positive relationships between un-enriched characteristics and change-oriented behavior. Accordingly, there may be some value to routinizing work even when managers desire change-oriented behavior. Additionally, the credibility interval estimates indicate that the relationship between formalization and change-oriented behavior is not necessarily negative. More studies are needed to provide clearer guidelines to practitioners.

As a final practical implication, managers should be aware of employee's dispositional characteristics. Agentic traits predicted change-oriented behavior and proactive personality was an especially important trait predictor. Managers, therefore, should acknowledge dispositional tendencies and preferences of employees, especially when innovation and change are important to a specific job. Restated, managers should match employees to jobs based on their personalities when other factors are equal.

3.3. Limitations and future research

Although results are generally supportive of our model and predictions, our meta-analysis has limitations. First, we limited analysis to studies conducted in field settings and therefore cannot make inferences about causality. Even though it seems unlikely that change-oriented behavior would cause changes in dispositional agency or in job characteristics, well-designed longitudinal, experimental, and quasi-experimental studies are necessary. Second, we were not able to consider moderators because there have not been enough primary studies to allow coding and empirical tests. Likewise, we could not test the relative importance of individual traits vis-à-vis job design characteristics simultaneously because few primary studies included both types of predictors. In addition, we could not test interactive relationships between individual traits and job characteristics. We also recommend caution when interpreting effect sizes for extraversion, routinization, and formalization because there is less research on these constructs and change-oriented behavior. We also note that we were not always able to control for the possible inter-correlations among our predictors. For example, we could not test the relative importance of individual traits vis-à-vis job characteristics simultaneously because few primary studies included both types of predictors. Yet, as an anonymous reviewer noted, people high on extraversion, openness, and proactive personality may actively seek out more enriched jobs. Future primary research should, therefore, include more systematic examinations of personality and job characteristics at the same time to help researchers determine more reliably the magnitude of the inter-correlations among the personality traits and job characteristics predictors.

Overall, our meta-analysis should open new venues for research. One interesting possibility is based on variability in the un-enriched job characteristics — change-oriented behavior relationship. Prior research has presented competing views of whether routine jobs increase or decrease proactive behaviors. For instance, Ohly et al. (2006) developed arguments for a positive relationship between routinization and proactive behaviors because routine jobs allow employees to become proficient such that they have extra resources they can invest in change-oriented behaviors. A reactance theory (Brehm & Brehm, 1981) perspective would imply that individuals in routine jobs may seek to gain control and influence by being proactive and seeking to change situations that are not personally engaging. Further, the desire to spring in action may depend on the employee's proactive personality. Future research can examine boundary condition moderators and the possibility of a curvilinear relationship (inverted-U) between un-enriched job characteristics and change-oriented behavior. It would also be instructive to examine psychological processes as mediators that link un-enriched characteristics and change-oriented behavior. For instance, motivation for change versus psychological withdrawal may provide contrasting mechanisms of influence. It is also plausible that enriched and un-enriched characteristics interact in ways that would be worthwhile to explore. Leaders can play an important role in communicating an appropriate balance between routinizing some work activities while enriching jobs at the same time.

The relationship between formalization and change-oriented behavior warrants additional research as well. Organizations become increasingly formalized as they grow and face the disadvantages of extensive formalization (Organ & Greene, 1981). It would be useful to explore situations and circumstances when formalization is positively related to change-oriented behavior. Leaders who continuously communicate the benefits of regulations and are genuinely supportive of their employees may create group norms where formalization serves a positive role, for example, by reducing role ambiguity and enhancing performance.

Our focus on proactive personality and change-oriented behavior also provides novel insights. For instance, two prior meta-analyses, Thomas et al. (2010) and Tornau and Frese (2013) examined the relative importance of five-factor model traits and proactive performance in the prediction of overall work performance. Tornau and Frese showed no advantage for proactive personality over FFM traits in predicting work performance and commented "future research should assume that there is no or

very low incremental validity for proactive personality measures on top of the Big Five" (p. 77). Going beyond this work, our results qualify this conclusion by showing that proactive personality has special relevance to change-oriented behavior, a more fine-grained work outcome. Thus, future research should continue to look at more nuanced outcomes that focus on specific work behaviors and use more precise matching of predictors (in our case, *proactive* personality) and *proactive* outcomes (i.e., change-oriented behavior, which is explicitly proactive). Lastly, future research can place more emphasis on longitudinal studies and on quasi-experimental studies to help establish causality.

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