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EFFECT OF ORGANIZATIONAL CONTROL SYSTEMS ON ORGANIZATIONALLY DIRECTED DEVIANCE

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EFFECT OF ORGANIZATIONAL CONTROL SYSTEMS ON ORGANIZATIONALLY DIRECTED DEVIANCE

Ву

Jaclyn Marie Nowakowski

A DISSERTATION

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ABSTRACT

EFFECT OF ORGANIZATIONAL CONTROL SYSTEMS ON ORGANIZATIONALLY DIRECTED DEVIANCE

By

Jaclyn Marie Nowakowski

Previous research on workplace deviance has focused almost exclusively on the antecedents and consequences of destructive or negative deviance, yet deviance can also be beneficial and violate expectations in a positive, constructive direction. As both forms of behavior are affected by policies and procedures which establish norms and expectations, a field experiment was conducted to examine the effect of several forms of organizational control (formal vs. informal and external vs. internal) on destructive and constructive deviance. Specifically, the experiment tested the hypothesis that formal and external control, as compared to informal and internal control, would lessen destructive deviance but would also have negative effects on constructive deviance. The process reactions of justice and trust were hypothesized to mediate this relationship and conscientiousness and proactive personality were hypothesized to moderate the link between process reactions and deviance. Two hundred twenty-five individuals were employed in a one-time work opportunity where real time behavioral observations of deviance were measured. Results revealed that while no forms of control were effective in eliminating destructive deviance, external control was most likely to depress constructive behavior. Implications and directions for future research are presented.

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INTRODUCTION

In the wake of several corporate scandals such as Enron, Worldcom, and Adelphia, organizations are increasingly concerned with employees following proper standards of conduct. It comes as no surprise to see that the academic literature has recently focused on methods of stamping out improper behavior by such means as electronic performance monitoring (Alder & Ambrose, 2005; Alge, 2001; Ambrose & Alder, 2000; Kidwell & Bennett, 1994; Stanton & Weiss, 2000), control in team-based environments (Barker, 1993; Ezzamel & Willmott, 1998; Sewell, 1998), and ethical codes of conduct (Adam & Rachman-Moore, 2004; Stevens, Steensma, Harrison, & Cochran, 2005; Trevino & Weaver, 2001; Weaver, Trevino, & Cochran, 1999). These approaches stand in contrast to earlier work on control in organizations (Ouchi, 1977, 1979, 1980; Ouchi & Johnson, 1978; Ouchi & Maguire, 1975) that focused on the broader purpose of control systems in directing employee behavior. While both recent and past streams of research give greater insight into the characteristics of monitoring and control systems that result in more positive employee reactions, there is an opportunity to take a step back and understand how control systems designed to curb negative employee deviance not only do as intended but also inadvertently result in fewer positive employee behaviors as well.

A popular example of attempting to control undesirable behavior while also restricting desirable responses is a university's honor code designed to limit cheating and dishonest behavior in college. Students are told that they are responsible for abiding by the code and that violation of the rules will result in serious sanctions. In some cases, codes will encourage students to report on the negative behavior of their peers to further

limit academic dishonesty. While cheating may decrease, an inadvertent consequence is that students are hyper-vigilant, distrusting of one another, and leery of the process designed to extract guilt or innocence (Hoover, 2002). Organizations may also fall prey to similar problems when employees perceive control programs as overly harsh or unjust. While these systems are designed to limit destructive behavior in the organization (e.g., employee theft), an unintended consequence is that employees may react negatively and be no longer as willing to go above or beyond what is required of them. The willingness to do more than expected is termed *constructive deviance*, defined as behavior that deviates from the actions of an individual's reference group but which conforms to a higher order set of values and beliefs (Warren, 2003). An example of constructive deviance is the employee who engages in innovative problem solving to benefit the organization while his or her peers stick with tried and true methods.

As organizations implement control programs in organizations via computer monitoring, electronic surveillance, work observation, and a variety of other methods (Smith, 2005), it becomes more important to understand how elements of control systems influence employee reactions and subsequent behavior, whether positive or negative acts of deviance. Even the most effective system on paper may have unintended consequences in practice. Because the foundation of these relationships is based largely in organizational context, this study will use field experiment methodology which combines the advantages of experimental methods with the external validity of an organizational setting. Therefore, this study will rely on previous research on organizational control systems that provides a rich starting point to understand how different facets of control systems influence employee reactions. The purpose is

threefold: (1) to develop a framework highlighting two key facets of control programs – formality of control and locus of responsibility, (2) employ field experiment methodology to understand deviance behavior in various control environments, and (3) investigate unintended as well as intended consequences of systems designed to reduce organizationally directed deviant behavior at work.

Control in Organizations

In their review of dominant control ideologies, Barley and Kunda (1992) note that the earliest evidence of control can be found in scientific management. This form of control was characterized by managers attempting to control their employees by specifying the precise physical movements required for increased productivity. Fathered by Frederick Taylor, this form of control was adopted by many businesses as the way to modernize and create efficient workplaces. Scientific management lost some of its steam following World War I when many efficiency experts noted that these systems were not able to substantially reduce waste and cost, despite Taylor's rhetoric (Barley & Kunda, 1992).

As scientific management fell out of favor, a wave of humanistic control systems came into the spotlight, with an increased focus on normative control and improving work environments and conditions for employees (Barley & Kunda, 1992). The work of human relations scholars such as Oliver Sheldon, Mary Parker Follett, and Elton Mayo gave rise to the Western Electric Hawthorne Studies which demonstrated that employees were more productive when supervisors were physically monitoring their work than when working unsupervised (Pennock, 1930). As a result of these findings, many advances in employee-employer relations were developed, including innovations in compensation systems, supervisory training, and job enrichment (Barley & Kunda, 1992).

As with prior popular forms of control, the human relations movement also fell out of favor in the 1960s as scholars shifted towards a more analytic orientation towards control. In this approach to control, managers were thought to be more able to control employees by manipulating decision structures and reward processes according to their

needs and the needs of the organization (Galbraith, 1977). This shift in control was captured by much of the work conducted by William Ouchi (Ouchi, 1977, 1979, 1980; Ouchi & Johnson, 1978; Ouchi & Maguire, 1975). Ouchi's work focused on understanding the purpose of different types of organizational control, whether determined by managerial needs (Ouchi & Maguire, 1975), stemming from variations in organizational structure (Ouchi, 1977), or driven by the organizational environment (Ouchi, 1979, 1980).

To understand control systems predicated on managerial needs, Ouchi and Maguire (1975) focused on methods to control employees based on behavioral or output measures. Managers employing behavioral control techniques closely and directly monitor employees' actions over time, while managers employing output control techniques evaluate employee outcomes, whether number of defects, financial returns, or sales volume (Ouchi & Maguire, 1975). Ouchi and Maguire (1975) found that the type of control used by managers depended largely on task complexity and managerial knowledge of job performance. Behavioral control was used most often with simple tasks where managers were knowledgeable about individual on-the-job performance, while output control was used most often with complex tasks that required interdepartmental collaboration where managers were not as knowledgeable about the performance and precise contributions of each employee towards the desired outcome.

While managerial needs can serve as one factor determining the appropriate type of organizational control, Ouchi (1979, 1980) also examined the organization's environment as dictating appropriate measures of control. In his research, he differentiated environments into three types: market, bureaucracy, or clan environment

(Ouchi, 1979, 1980). In a market environment, employee performance can be observed and rewarded based on principles of exchange: employees who produce little are rewarded little, while employees who produce a great amount are rewarded proportionally (Ouchi, 1979). Organizations attempt to control employee behavior via the reward process. In a bureaucracy, managers must closely watch, direct, and monitor employee behavior to ensure compliance with company standards and rules. Managers must assess whether employee performance satisfactorily complies with the rules and employees must satisfy managerial expectations to be rewarded for their performance (Ouchi, 1979). In a clan environment, individual performance is difficult to disentangle from the performance of other individuals. The organization is able to control employee behavior via socialization processes which commit employees to organizational objectives and reaching performance rewards (Ouchi, 1979).

Ouchi and Johnson (1978) also discussed differences in organizational environments and linked them to two main types of control systems that operate in organizations, termed Type A or Type Z control systems. Type A systems establish control through a tightly monitored system, similar in nature to what would be implemented in a market environment. Employees are frequently evaluated based on hard data collected through formal employee monitoring. Type Z systems operate differently and establish control through acculturation and socialization of employees, similar to control that would be implemented in a clan environment. These systems emphasize coordination between units rather than high individual specialization and evaluations are based on subtle, informal criteria.

The research of Sitkin and colleagues (Cardinal, Sitkin, & Long, 2004; Roth, Sitkin, & House, 1994; Sitkin & George, 2005) also touches upon the formal and informal nature of control systems. Most simply, they refer to formal control as anything that is written while informal control is anything unwritten (Cardinal et al., 2004). Formal control measures are visible, objective forms of control while informal control relies on less objective, unofficial forms of control.

Formality of Control

Ouchi's research on Type A and Z control systems along with Sitkin and colleagues' perspective on written and unwritten control forms the basis for *formality of control*, the first dimension of the control framework to be examined in this research. Formal systems employ strict monitoring and frequent evaluation. They are characterized by written procedures, rules, policies, rigid routines, and by their very official nature. By contrast, informal systems are characterized by a casual or unofficial nature, with employees' evaluations being based on subtle, informal factors. In informal control systems, employees develop a sense for doing what is expected of them via social norms or examples set by more senior members of the organization (Adam & Rachman-Moore, 2004).

Locus of Responsibility

Within informal and formal systems there is a need to identify who or what is responsible for ensuring that employees comply with the system. It is also important to link this distinction back to the purpose of the current research, which is to understand how differences among control systems relate to both positive and negative deviance. This second dimension will be referred to as *locus of responsibility* defined as the

location of the entity that will monitor employee behavior, whether it is located internal or external to the person (e.g., I am responsible for monitoring myself vs. my organization or supervisor will monitor my behavior). In the control research discussed above, the locus of responsibility was external. The organization was responsible for monitoring employee behavior, whether through behavioral, output, Type A, or Type Z control. Although employees may have also kept track of their performance for personal knowledge, final responsibility rested with the organization to monitor employee actions.

The notion of external responsibility has become particularly salient with the use of electronic performance monitoring (EPM). EPM is defined as gathering information about the performance of employees via technological means (Alge, 2001; Ambrose & Alder, 2000). Ambrose and Alder (2000) reported that the use of EPM is extensive, with the number of workers who have been monitored at work growing from more than 10 million in the early 1990s to over 20 million by 1996. EPM techniques can be used to count keystrokes, read email, monitor internet usage and phone calls, and track employee locations via video surveillance (Alge, 2001). In situations where companies utilize EPM or some other form of employee surveillance, the responsibility for monitoring employee actions rests in the hands of the organization, external to the employee. As organizations monitor employee behavior. Ambrose and Alder (2000) have identified ten dimensions related to EPM that the organization can control, including: (a) employee participation in system design, (b) disclosure of monitoring to employees, (c) tasks monitored, (d) amount and length of monitoring, (e) use of monitoring data to develop performance standards, (f) providing feedback to employees, (g) offering opportunities to employees to challenge the system, (h) timeliness of feedback, (i) monitoring of group or individual

performance, and (j) use of monitoring data to inform performance reward decisions. It is important to recognize that EPM systems can be implemented under a host of different conditions, with each having implications for employee reactions and behavior. Recent research has focused on employee justice reactions stemming from EPM techniques in the workplace (Aiello & Kolb, 1995; Ambrose & Alder, 2000; Niehoff & Moorman, 1993; Stanton, 2000).

In contrast to control systems characterized by a high degree of external responsibility are systems with a high degree of internal responsibility where employees are held responsible for monitoring their own behaviors and subsequently their compliance with the control system. These types of systems are often observed in teambased work environments, where individuals self-monitor and observe each other to ensure that each person is complying with the necessary work procedures (Barker, 1993; Ezzamel & Willmott, 1998; Sewell, 1998). Programs designed to instill ethical values are internal control systems when employees are tasked with monitoring their own behavior related to organizational principles, values, and goals. When the organization steps back and places responsibility in employee hands, either because it cannot adequately monitor employee behavior or because it feels employees would be more compliant when self-accountability is high, the control system takes on this internal nature. These types of systems still fall under the broad category of organizational control, since the ideals and values of the organization underlie the nature of the system being implemented. However, the emphasis on individual employees to self-monitor is expected to result in different employee behavior when compared to a system which is based on complying with an external agent.

Table 1

	-	Formality of Control	
		Formal	Informal
		Written expectations of employee behavior	Unwritten norms regarding organizational expectations
	Internal	Individual employees tracking own behavior with explicit documentation	Individual accountability for compliance
Locus of Responsibility		Work diary	Tacit commitment to organizational values
	External	Written expectations of employee behavior	Unwritten understanding between employee and organization
		Monitoring by an external organizational agent	External individuals monitor employee behavior
******		Electronic surveillance	

Characteristics, Typology, and Examples of Control

Typology of Control

Considering the dimensions of formal/informal and external/internal control, a typology for understanding organizational control systems is offered (Table 1). The cell combining a formal control system where locus of responsibility is internal to the employee is characterized by employees tracking their own behavior with explicit documentation and self-reporting when they deviate from norms. An example would be a work diary where employees are required to document their daily work activities (Bonke, 2005; Hewitt, 1983; O'Reilly, 1973). To the extent that the employee is honest and diligent about documenting their activities, any deviation from work procedures (either positive or negative) could be identified from an examination of the diary entries.

The cell characterized by an informal control system where locus of responsibility is internal to the employee requires the employee to self-monitor. In this environment, it is assumed that employees recognize and accept that they are expected to follow the organization's norms and values. At the peer-group level, an example would be the control that develops in team based work systems, either through norms that develop in self-managed work teams or via total quality management initiatives (Barker, 1993; Ezzamel & Willmott, 1998; Sewell, 1998). Another example are values-oriented ethics codes that create an ethical culture and tacit commitment to organizational values, thereby activating an employee's inner sense of compliance (Stevens et al., 2005; Weaver et al., 1999).

The cell combining formal control with an external locus of responsibility is characterized by a precise system with written expectations of employee behavior. Employees are watched in the workplace and their behaviors (whether destructive or constructive) can be documented by the organization and/or their supervisor. An example of this type of control is a budget system where fiscal goals are stated for the forthcoming cycle and progress is assessed by upper management at key intervals (Carlson, 1987; Rabinowitz, 1996). Another example is a code of conduct specified in the employee handbook combined with a form of monitoring such as tracking employee Internet usage (Swanson, 2002) or geographic location in a company vehicle via GPS technology (Cadrain, 2005).

Finally, the cell containing an informal system with external locus of responsibility is characterized by an unwritten understanding between the employee and organization of what is expected from the employee. Supervisors and/or peers monitor

employee behavior. An example would be the politics that develop in organizations which persuade individuals to action that are largely based on unwritten norms and tend to emanate from higher authorities in the organization. Reports of employee behavior (or misbehavior) tend to travel through the grapevines of organizations, which act as a feedback loop to the supervisor (Voyer, 1994) who can then monitor employees' behaviors.

The preceding discussion has focused on organizational level systems, and it is now important to recognize the impact that these systems have on individual level behavior. Organizational control systems are designed, in large part, to limit destructive deviance in the workplace. Organizations want to coordinate and control the activities of organizational members so that all behavior is oriented towards organizational goals (Lawler & Rhode, 1976). It is hard to imagine any upstanding organization that would want their employees to steal, come to work late, laze about while at work, be rude to coworkers, or harass each other. Therefore, control systems try to influence employees by specifying the type of behavior that is appropriate (Lawler & Rhode, 1976). An unfortunate consequence of control systems is that the process of eliminating undesirable behavior may limit more desirable responses (in the form of constructive deviance), as employees perform only what is required of them and nothing more. As some preliminary research has linked the frequency of monitoring (which is associated with eliminating destructive deviance) to decreases in positive employee behavior (Niehoff & Moorman, 1993), I will draw on these initial findings and further relate deviance outcomes to the typology of organizational control proposed in this research.

Workplace Deviance

Early definitions of workplace deviance focus on the voluntary nature of behavior of organizational members that violates significant organization norms, and, in doing so, threatens the well being of the organization and/or its members (Robinson & Bennett, 1997). According to Robinson and Bennett (1997), there are several key components of deviance behavior in the workplace. First, the behavior must be purposeful, discretionary, and voluntary (e.g., not an accident). It does not necessarily have to be intended to be deviant or harmful towards the organization for the behavior to be considered counterproductive, as long as it results in negative organizational outcomes. Second, the behavior violates significant organizational norms. These norms are espoused by the dominant administrative members of the organization, as compared to norms of a subgroup or subculture, and are pivotal or central to the well being of the organization. Violation of these central norms would be known to organizational members to result in negative sanctions. Examples of deviant behavior include theft, shirking, aggression, and harassment.

More recently, Warren (2003) has offered a typology of employee deviance, classifying behavior against two sets of norms: reference group norms and hypernorms. Reference group norms are similar in nature to the norms discussed by Robinson and Bennett (1995). They refer to standard behavior within a person's group. Hypernorms are generally held beliefs about fundamental societal principles and expectations for doing the right thing (e.g., nourishment, freedom, physical security). Behavior that deviates from both reference group and hypernorms is termed *destructive deviance* while behavior that deviates from reference group norms but conforms to hypernorms is termed

constructive deviance (Warren, 2003). One example of constructive deviance would include an employee exercising voice to initiate and encourage necessary change in a work group that embraces the status quo. Here, the employee initiating change is conforming to hypernorms by advocating for improvement while deviating from the reference group norm. A second example is an employee who takes the organizationallyauthorized time for a break when everyone in the work group takes longer than permitted breaks. Here, the employee deviates from the work group by taking a shorter break, but also conforms to hypernorms of following organizational rules. Along similar lines are whistleblowers who violate work group norms by speaking out but conform to hypernorms by reporting wrongdoing. Because norm violations can occur in either positive or negative directions, Warren's (2003) definition more fully captures the scope of deviance behavior. The behaviors classified by Robinson and Bennett (1995) only typically fall into the category of destructive deviance. Therefore, Warren's conceptualization of deviance will serve as the basis for capturing deviance in the current study.

It is important to recognize that constructive deviance is often associated with creativity, prosocial behavior, and organizational citizenship behavior (OCB). Much research has been conducted to examine the antecedents and consequences of this set of behaviors (LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995; Pearce & Herbik, 2004; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). However, constructive deviance can be separated from this broader set of positive, helpful behavior by recognizing the role that norms play in dictating what is deviant and what is not. A hallmark characteristic of deviant behavior is that it violates norms. In the case of constructive deviance, the

behavior must violate reference group norms. Simply because a behavior is positive and conforms to a higher sense of doing what is right does not warrant the constructive deviance label: it must be contrary to the behavior of an individual's reference group. Therefore, if everyone in a reference group engages in OCB and a norm is established where everyone is expected to do so, the target person who also engages in OCB is not being constructively deviant but is simply doing something positive along with his or her colleagues. Given the body of research that has been conducted on OCB, contrasted against the small set of research on the behavior labeled constructive deviance, it is reasonable to assert that constructive deviance may be a subset of OCB in that it shares the overarching "helpful" distinction (Spreitzer & Sonenshein, 2004). What differentiates these concepts is the context and norms operating in the environment that graduate constructive deviance beyond the more general category of organizational citizenship.

Capturing Destructive and Constructive Deviance

To account for the various forms of employee deviance that will be the focus of this research, a diagram organizing the different dimensions can be found in Table 2. This table depicts the primary dimension distinguishing destructive from constructive deviance (deviation from reference group norms + conformity or deviation to hypernorms). To capture deviance, it will be very important to understand the content of both reference group norms, which is likely to differ across organizations, as well as hypernorms which are expected to be more general in nature and stable across situations as they capture global standards, values, and beliefs (Warren, 2003). Therefore, the behaviors displayed in Table 2 should be viewed as reasonable examples, with the caveat

Table 2

Deviance Diagram

Hypernorms		
Conform	Deviate	
Constructive Organizational Deviance	Destructive Organizational Deviance	
Volunteering or taking on extra work	Theft	
Innovative problem solving	Vandalism	
Participating in organizational committees	Withholding effort or low productivity	
that reference group norms may expand or shr	ink which behaviors fall into the categories.	
For example, although theft is widely consider	red to be unacceptable, if everyone in your	
work group steals and you do as well, the beha	avior is not deviant as compared to the	
reference group but instead conforms to peers' behavior. ¹		

Robinson and Bennett (1995, 1997) also include two additional dimensions in their typology of deviance behaviors: severity of deviance and target of deviance. For the purpose of this research, understanding whether deviant behavior has a minor or major impact on the target warrants a much deeper exploration into the environment and characteristics of the actor and target. Obviously there are some destructive behaviors which are undoubtedly severe such as murder, physical assault, or embezzlement.

¹ While this research will focus on behavior that deviates from reference group norms, it is worth noting the other half of Warren's (2003) typology which considers behavior that conforms to reference group norms and either conformity or deviation to hypernorms. Behavior which conforms to both reference group norms and hypernorms is called constructive conformity while behavior which conforms to reference group norms but deviates from hypernorms is termed destructive conformity. In this example, theft which conforms to reference group norms but deviates from hypernorms is destructive conformity.

Similarly, there are certain constructive behaviors which can have a major impact, such as whistleblowing. However, despite the popular attention these behaviors attract, they have very low base rates. For example, the Federal Bureau of Investigation (2004) reported that homicide accounted for only 0.1% of all workplace victimization between 1993-1999, while whistle blowing may be an even less frequent activity, despite the recent passage of legislation designed to protect whistleblowers from dismissal or other discrimination (Glassman, 2005). Therefore, it is unlikely that these behaviors will be captured as part of this research. There are also a set of behaviors that are generally mild in nature, such as gossiping on the negative side and creativity on the positive side, whose impact may be very strongly or weakly felt by the target depending on whether the behavior is in retaliation, reciprocation, or motivated by some other means. Therefore, because of the difficulty associated with making a clean distinction of deviance outcomes along this major/minor dimension, it will not be a focus of the deviance dimensions explored in this research.

I will also limit the scope of deviance behavior with regard to the target of deviance and focus solely on organizationally-directed deviance. Robinson and Bennett (1995, 1997) do make a strong distinction between organizational and interpersonal deviance and note the different antecedents that motivate these behaviors, which is not to be dismissed. However, the nature of the experimental task used in the current study will restrict the interaction between participants, thereby reducing the opportunity for interpersonal deviance while allowing for a more careful examination of organizational deviance.

MODEL DEVELOPMENT AND HYPOTHESES

As organizations attempt to control negative employee behavior, the current research is focused on the intended outcomes of control to limit undesirable behavior as well as the inadvertent consequences of control which restricts desirable behavior. The typology of organizational control systems highlights two key facets of control – formality and locus of responsibility – that are expected to influence destructive and constructive employee deviance. The following section will explain the experimental model and detail hypotheses linking the control dimensions to these behavioral outcomes. Ideally, organizations would want to find a solution to organizational control that minimizes destructive deviance while simultaneously maximizing constructive deviance. This research will explore the simultaneous impact of control mechanisms on both forms of deviance while also taking into consideration important mediating and moderating influences impacting the primary relationship. The precise relationships that will be tested in the current research are displayed in Figure 1.

Figure 1

Experimental Model



Hypotheses

Control – Justice. Research on organizational justice has developed in the psychological literature over the past 30 years, dating back to the work of on aspects of equity, fair procedures, and process control. Early work on organizational justice recognized the notion that individuals desire fairness in their work environments, whether by equitable distribution of resources and rewards, termed distributive justice, or by use of fair procedures that impact outcomes, termed procedural justice (Adams, 1965; Leventhal, 1976; Thibaut & Walker, 1975). More recent research on organizational justice has expanded its dimensionality to include a focus on the fairness of interpersonal treatment received by individuals, termed interpersonal justice (Colquitt, 2001; J. Greenberg, 1993). The current research will focus on these three dimensions of justice reactions.

Alge (2001) found that participants perceived greater procedural justice when the activities being monitored by the control system were relevant to key decisions affecting employees and when employees had the opportunity to voice their opinion about the monitoring system. Douthitt and Aiello's (2001) research on monitoring also found that employees who had the opportunity to provide their input during the monitoring process had more positive procedural justice reactions. This notion of participation in monitoring is related to the control dimension of locus of responsibility. When employees are responsible for monitoring their own behavior, they play a large participatory role in the process, whereas when the organization is responsible for monitoring behavior, employees play less of a role. Therefore, as compared to control systems with an

external locus of responsibility, control systems employing an internal locus of responsibility will result in more positive procedural justice reactions.

H1: Control systems with an internal locus of responsibility will result in more positive procedural justice reactions compared to systems with an external locus of responsibility.

Considering distributive justice, Niehoff and Moorman (1993) proposed that the formality of monitoring (whether formal meetings or informal discussions between supervisors and employees) should also affect distributive justice reactions. This relates to the current research dimension of formality of control. They hypothesized a positive relationship between both types of monitoring and distributive justice, stating that employees whose managers meet with them to learn about their work behavior (and subsequently use that information in performance appraisal) will perceive greater distributive fairness than employees whose managers do not meet with them. In actuality, they did not find any relationship between formal or informal meetings and distributive justice. However, in their research it is likely that the frequency with which managers met with employees also affected distributive justice perceptions and confounded the relationship between formality of control and distributive justice. Holding frequency constant, when more formal methods of control are used employees may perceive that outcomes stemming from this type of monitoring are fairer. Because the system gathers data in a routinized, structured manner, as compared to an informal method where the system is less structured, it is less susceptible to a supervisor's bias in evaluation. Therefore,

H2: Formal control systems will result in more positive distributive justice reactions compared to informal control systems.

While rooted in procedural justice, interpersonal justice is another arm of fairness which deals with the quality of interpersonal treatment received during organizational procedures (Bies & Moag, 1986). More specifically, interpersonal justice deals with the respect and propriety associated with the type of treatment received (Colquitt, 2001). Shapiro and Brett (1993) found that individuals perceive procedures and outcomes as more fair when they are able to exercise voice. When authorities give greater consideration to an employee's views, procedural justice judgments also increase (Tyler, 1987). Extending these findings into the realm of interpersonal justice and control, informal control systems may give employees the impression that their input matters as the organization places greater responsibility for monitoring in individual hands. This may further be seen as indicating greater respect for the employee as the employee is able to express his or her "voice" by monitoring and controlling their own behavior in an indirect manner (Shapiro & Brett, 2005). Therefore,

H3: Internal control systems will result in more positive interpersonal justice reactions compared to external control systems.

Control – Trust. The literature on organizational control has also identified trust as a necessary condition for improved organizational functioning. Trust has been defined as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (Rousseau, Sitkin, Burt, & Camerer, 1998, p. 345). In organizational environments characterized by a great amount of uncertainty and where work tasks are ambiguous, dynamic, difficult to observe, or

result in outcomes that are hard to assess, employees must have faith in their coworkers and organization that everything will proceed as expected. In the face of this kind of uncertainty, employees must rely on one another to accomplish their work and trust that responsibilities will be fulfilled in the give-and-take relationship (Morris & Moberg, 1994). Trust is not only something that can be developed between employees but also between the employee and its organization, via work policies, procedures, and written and unwritten contracts that explain responsibilities and outline expectations (Robinson & Rousseau, 1994). This kind of trust is based on employee beliefs about the organization's integrity, motives, consistency, and openness (Gabarro & Athos, 1976).

Focusing on trust and locus of responsibility, the role that the organization plays in the control system is expected to impact employees' trust perceptions. An external system, designed with organizational monitoring in mind, is likely to result in negative trust reactions. Employees may believe that they are being held to extreme levels of accountability, which have been shown to lead to negative outcomes (Frink & Klimoski, 1998). On the other hand, internal systems which place responsibility in the hands of employees grant a certain level of freedom. Employees may see this as an indicator that the organization believes they have integrity, which is a basis for the development of interpersonal trust (Mayer, Davis, & Schoorman, 1995). This freedom can result in greater perceptions of security and stability between employees and the organization, which will positively impact trust (Strutton, Pelton, & Lumpkin, 1993). Therefore,

H4: Control systems with an internal locus of responsibility will result in more positive trust reactions compared to systems with an external locus of responsibility.

As part of employment with an organization, expectations are a natural part of the work relationship whether presented via written or unwritten means. While previous research by Malhotra and Murnighan (2002) has shown that non-binding, or informal contracts, are most likely to establish trust, their experiment was conducted so that the overall trust evaluation was a function of several rounds of a simulation, where in each round the conditions of trust had changed. Because the conditions in the current experiment will remain the same throughout the work session, it is not expected that employee trust reactions will differ whether control is implemented via formal or informal methods. Therefore, no hypothesis is offered linking formality of control to trust reactions.

Affective Reactions and Deviance

Justice – Deviance. Research by Trevino and Weaver (2001) on corporate ethics programs and organizational control suggests that positive employee justice perceptions regarding ethics program follow-through leads to greater willingness to report problems. Justice has also been linked to positive creativity in devising solutions to a workplace problem (Clark & James, 1999) and helping behavior in response to procedural fairness of budgetary procedures (Little, Magner, & Welker, 2002). While the norms in these environments are not known, to the extent that willingness to report problems, help out, or display creativity were considered constructively deviant, it is hypothesized that:

H5: The more positive the justice reactions, the greater the frequency of constructive deviance.

The relationship between justice and destructive deviance has been suggested in several previous studies on the topic (Ambrose, Seabright, & Schminke, 2002; Cortina &

Magley, 2003; Fox, Spector, & Miles, 2001). Increased perceptions of injustice have been linked to a variety of organizationally-directed negative outcomes, including sabotage, turnover, and retaliation (Conlon, Meyer, & Nowakowski, 2005). Of most relevance are the results of Fox et al. (2001), which demonstrated a negative relationship between both procedural and distributive justice and organizationally-directed deviance, including behavior such as trying to look busy while doing nothing (withholding effort), putting in to be paid for more hours than worked (theft), and coming to work late without permission (tardiness). It is hypothesized that:

H6: The more negative the justice reactions, the greater the frequency of destructive deviance.

Trust – Deviance. One stream of research on trust in organizations has examined the relationship between trust, cooperation, and contributions (de Cremer, Snyder, & Dewitte, 2001). Individuals who trust more are expected to contribute more in a relationship in expectation of reciprocation and cooperation. Individuals who have a high sense of trust are also believed to have a strong sense of moral commitment (Kramer & Goldman, 1995), which has been further linked to a lessened propensity for theft (J. Greenberg, 2002). Conversely, individuals who are low in trust have negative expectations about reciprocity and are less willing to engage in constructive, cooperative interactions (de Cremer et al., 2001). Therefore, in the context of constructive deviance, it is hypothesized that:

H7: The more positive the trust reactions, the greater the frequency of constructive deviance.

While still a small body of literature, there is some evidence linking trust perceptions to decreases in employee productivity, which is one example of destructive deviance. Hultman (2004) suggests that systemic mistrust in an organization can have negative effects on worker productivity. Along the same lines, Frenkel and Orlitzky (2005) have suggested that increased trust lead to increases in productivity in a sample of Australian laborers. As Frenkel and Orlitzky (2005) note, employees who feel trusted and supported by their organization are going to be more likely to commit to working hard and being more productive, and at the same time, less deviant. Therefore,

H8: The more positive the trust reactions, the lower the frequency of destructive deviance.

Moderators of Trust/Justice-Deviance Relationship

Conscientiousness. Conscientiousness is an often examined concept in relation to employee deviance. Conscientiousness refers to the extent to which someone is hard working, responsible, dependable, reliable, and careful (Barrick & Mount, 1991). Results consistently demonstrate that more conscientious individuals are less likely to be deviant than their less conscientious counterparts (Ones & Viswesvaran, 2001), yet recent research demonstrates that situational factors will interact with personality to produce interesting effects. In Colbert, Mount, Harter, Witt, and Barrick (2004), the researchers were focused on examining the interactive effects of personality and situational characteristics on workplace deviance. They found that the relationship between workplace perceptions and employee deviance (measured as withholding effort) was strongest for low conscientious individuals. While the deviance behavior of highly conscientious individuals did not vary as a function of their workplace perceptions,

individuals low in conscientiousness were found to withhold the greatest amount of effort when they held strongly negative perceptions of the workplace. In a similar fashion, it was expected that conscientiousness would interact with employee trust and justice reactions to affect constructive and destructive deviance. Highly conscientious individuals will refrain from destructive deviance despite feeling untrusted or unfairly treated, whereas individuals low in conscientiousness may engage in deviance even more so when motivated by feelings of distrust or injustice.

H9a: Conscientiousness will moderate the relationship between employee trust reactions and destructive deviance, such that when conscientiousness is low, the relationship will be stronger.

H9b: Conscientiousness will moderate the relationship between employee justice reactions and destructive deviance, such that when conscientiousness is low, the relationship will be stronger.

Research has also supported the link between conscientiousness and organizational citizenship behavior (LePine et al., 2002). Organ's (1988) model suggests that conscientiousness is an integral part of OCB and Van Dyne, Graham, and Dienesch's (1994) model supports the inclusion of obedience (of which conscientiousness is a subset) as a predictor of OCB. Because constructive deviance is being conceptualized as a subset of organizational citizenship, past research supporting the link between conscientiousness and OCB also provides support for the relationship between conscientiousness and constructive deviance. Therefore,
H9c: Conscientiousness will moderate the relationship between employee trust reactions and constructive deviance, such that when conscientiousness is low, the relationship will be stronger.

H9d: Conscientiousness will moderate the relationship between employee justice reactions and constructive deviance, such that when conscientiousness is low, the relationship will be stronger.

Proactive personality. Proactive personality is defined as an individual's disposition to affect change in his or her environment (Bateman & Crant, 1993). Proactive individuals seek out opportunities, demonstrate initiative, and persist in a course of action until their desired change comes about. Proactive personality has been linked to the tendency for individuals to shape their work environment and alter their work methods, procedures, and task assignments (Bell & Staw, 1989). Seibert, Crant, and Kraimer (1999) also suggest that individuals who are more proactive by nature are better equipped to understand the contingencies in their environments. Despite feeling as though they were treated unfairly or do not feel trusted, highly proactive individuals may still engage in constructive behavior as they receive satisfaction from their demonstrated initiative.

H10a: Proactive personality will moderate the relationship between employee trust reactions and constructive deviance, such that when proactivity is high, the relationship will be weaker.

H10b: Proactive personality will moderate the relationship between employee justice reactions and constructive deviance, such that when proactivity is high, the relationship will be weaker.

While Bateman and Crant (1993) have stated that not all proactive behaviors are desirable, there has been very little conceptual or empirical work linking proactive personality to negative behavior, including destructive deviance. Chan's (2006) recent research on proactive personality and situational judgment noted that in most all studies of proactive personality, being proactive is considered a positive, adaptive trait which has been linked to better job performance and positive work outcomes. Therefore, no hypothesis is offered linking proactive personality to negative or destructive deviance as the literature cannot support this relationship.

Control, Reactions, and Deviance

This final set of hypotheses relates the three key components of the focal relationship: dimensions of control, trust, justice, and destructive and constructive deviance. Organizations use formal control systems when they want to enhance their perceived legitimacy (Roth et al., 1994). Law-like, written formal practices are objective and provide a concrete tool for assessing appropriate employee behavior. These control systems will be more effective in limiting destructive deviance overall than will informal systems. Employees may perceive informal systems to be more transparent or open to the interpretation of a particular supervisor or individual. With a concrete set of rules and policies in place, and drawing on earlier hypotheses, it is hypothesized that:

H11a: Formal control systems are more likely to limit destructive deviance than informal control system, and

H11b: The relationship between the formality of the control system and the frequency of destructive deviance will be mediated by justice reactions.

Formal control systems also better specify the responsibilities of employees compared to informal systems (Roth et al., 1994). In doing so, employees will be made aware of what they should and should not do. These specifications may make the environment seem to favor strict, explicit, and expected behavior. This will have negative consequences for constructive deviance as employees are limited by formal responsibilities. Therefore, it is hypothesized that:

H12a: Formal control systems will be more likely to restrict constructive deviance as compared to informal control systems, and

H12b: The relationship between the formality of control and the frequency of constructive deviance will be mediated by justice reactions.

External control systems are regulated by the organization and its agents. Perceptions of "big brother" may dissuade employees from wavering outside of the bounds of acceptable behavior as they know they are being watched (Crossen, 1993). In contrast, the responsibility for monitoring internal systems lies with the employee himself, and he may be less vigilant in both detecting and reporting of norm deviations. This has consequences for both destructive and constructive deviance. With internal systems, the actual lack of accountability to an external source can make breaches of norms less detectable and more likely (e.g., If I can get away with coming to work late, and no one will notice it for a while, I am going to keep doing it).

H13a: External control systems will be more likely to restrict destructive deviance as compared to internal control systems, and

The relationship between locus of responsibility and the frequency of destructive deviance will be mediated by (H13b) justice and (H13c) trust reactions.

As mentioned, deviation from what is acceptable will be more readily noted by an external control system. When deviations indicate that the employee is not doing what they are supposed to (whether for better or for worse), employees may feel compelled to comply with the rules to avoid potential punishment. In contrast, informal systems may give employees more latitude to engage in constructive behavior as the individual employee is responsible for ensuring that they comply with the system and may be more committed to the system as a whole (Crossen, 1993). Whether the individual chooses strict or lax compliance is in the eyes of the employee him or herself. Therefore, internal control systems will promote constructive deviance more than external control systems.

H14a: External control systems will be more likely to restrict constructive deviance as compared to internal control systems, and

The relationship between locus of responsibility and the frequency of constructive deviance will be mediated by (H14b) justice and (H14c) trust reactions.

This last set of hypotheses highlights the dilemma faced by organizations wanting to control positive and negative employee behavior. While formal and external systems may be beneficial for limiting destructive deviance, it is hypothesized that these systems are also most likely to restrict constructive deviance. The proposed study is designed to explore the intended and unintended consequences of control and elaborate on the complicated nature of discouraging negative deviance at work while at the same time encouraging positive deviance.

METHOD

Design. This study employed a 2 x 2 fully crossed between subjects design, varying the formality of control (formal vs. informal) and locus of responsibility (external

vs. internal). The field experiment took place in a single 3-hour session where participants were asked to perform a research task for an organization. The use of field experiment methodology was particularly important for the nature of the outcome being studied. Deviance is a sensitive, affectively loaded topic, which can inhibit honest responding. In addition, self-report methodology commonly used to study deviance raised validity issues and concerns with biased retrospective reporting of behavior. A field experiment presented an opportunity to more carefully consider the cause-and-effect relationship between control and deviance behavior. Most previous research on deviance (e.g., Robinson & Bennett, 1995, 1997) has used correlational data, which made it difficult to assess causal relationships and draw strong conclusions about the antecedents and connectedness between variables. Therefore, a field experiment was conducted. This method combined the advantages of true experiment methodology, including control over extraneous variables, along with the enhanced realism of an organizational environment.

Sample. A total of 251 participants from a large Midwestern university community participated in the present study. Four participants did not give permission for their data to be used as part of the research, resulting in a sample of 247 participants. Due to missing data, 22 participants were further eliminated from the data set for a final total of 225 participants. This resulted in a sample with 52 individuals in the formalexternal group, 59 individuals in the formal-internal group, 53 individuals in the informal-external group, and 61 individuals in the informal-internal group. The sample was 61% female and 68% Caucasian. All participants were between the ages of 18-53 (M = 21.56 years) and had an average of 5.62 years of work experience. Everyone was

paid for their time during the 3-hour session and sessions were conducted with groups of people consisting from 2-12 participants. Because data was gathered in a group setting, group membership was recorded to assess any group-based dependencies affecting the research outcomes. Beginning with the number one, groups were assigned a number in the order in which data was collected and 31 groups were run altogether.

To determine appropriate sample size, power analysis was conducted prior to data collection. Results of the power analysis indicated each cell should contain 60 individuals, for a total of 240 participants. To arrive at this estimate, a literature search was conducted for studies which examined similar variables to those included in the current research. Recently, Colbert, Mount, Harter, Witt, and Barrick (2004) conducted a study examining moderated hierarchical regression models predicting aggression, a form of destructive behavior, from the interaction between perceptions of the work environment and individual differences including conscientiousness. Their findings generated an effect size of $R^2 = .12$. Because the variables being studied by Colbert et al. (2004) were similar to those in the current study, the effect size served as the benchmark for the desired effect size included in this power analysis calculation. To calculate sample size Tabachnick and Fidell (2001) recommended using the following formula: N >= $\{8/[R^2/(1-R^2)]\} + (m-1)$, where m = number of independent variables and N = number of participants per cell. For the current research, m = 2 and R^2 was input at .12 from Colbert et al.'s (2004) research.

Procedure. Participants were recruited from the Michigan State University campus and surrounding area. A series of flyers advertising a work opportunity through "Dynamic Research Group" were posted around campus (Appendix A). In addition, the job was advertised in local newspapers as well as on electronic job boards accessible to college students in the area.

Dynamic Research Group (DRG) was a fictional company created for the purpose of this research. It is important that participants felt as though they were true employees of an organization, with real opportunities to engage in workplace behavior. Every effort was made to ensure that the fictional company appeared real and viable to all participants. A website and email address were created for this company as a way to recruit participants and communicate the details of the work opportunity. The advertisements directed interested participants to DRG's webpage (<u>www.dynamicresearchgroup.com</u>) which explained that DRG was a consulting firm hired by a client organization whose founder was a graduate of Michigan State. The premise of the job was that the client was considering using skilled external labor to outsource the research component of his work process rather than paying full time employees salary and benefits to do this same kind of work.

Participants were hired by DRG for a 3-hour block of time where they performed some Internet research, wrote a short report about their findings, and answered some surveys about their experience. The reports were to inform a decision regarding outsourcing. Participants worked independently and were paid \$10/hour. Applicants filled out a short application and emailed it to the company (Appendix B). This application included individual difference measures of the Big Five and proactive personality as well as a financial knowledge and internet skills test. All applicants who successfully completed the application were emailed back with a selection of dates and times for the work sessions.

Prior to the session, participants were emailed a copy of the DRG Terms of Employment and Employee Expectations (Appendix C). Although participants were only employees of DRG for a short amount of time, they were expected to abide by company policies. This 1-page document outlined company norms, expectations, and terms of employment. Participants learned that on the upcoming day of their session, they would be doing some Internet research and writing a four-page report about their findings. They were told that they would not be expected to do anything beyond what was outlined in the Terms of Employment.

Embedded in this document was the manipulation of the type of control system that was to be used to direct employees' behavior. Work sessions were randomly assigned to the four experimental conditions. Applicants were assigned to a work session based on their personal availability. Participants were sent, via email, the Terms of Employment document that corresponded to their condition and they were asked to read this document prior to attending their session.

On the day of the work session, employees were welcomed into the work space and seated at a computer terminal. The sessions were scheduled in MSU campus computer labs to allow for easy access by MSU students and community members. Participants were placed at least 1 seat away from the next participant to give room for people to work as well as reduce the interaction between individuals. The administrator of the session introduced herself and her assistant as employees of DRG and reminded employees of the terms of their employment and the type of control that was used to monitor their behavior.

Next, the task for the day was handed out to participants (Appendix D). Participants were told that they were to visit a series of websites to conduct some research on the topic of "Advice for the New Investor." Five investing websites were pre-selected for employees to visit to complete their research: The Securities and Exchange Commission (www.sec.gov), The Motley Fool (www.fool.com), Merrill Lynch (askmerril.ml.com/investments/), Investment U (www.investmentu.com/index.html), and The Investment FAO (invest-faq.com). These websites were selected from a wide variety of available investing websites to provide a mix of information based on investing facts (e.g., SEC) and investment advice (e.g., Merrill Lynch). Beyond telling employees to search for information on the general topic of "Advice for the New Investor," employees had full discretion to view as much or as little information on each of the web pages as they felt necessary to complete their work. Employees were told that these five websites were the only websites they needed to visit during the session and that their responsibility was to write a report summarizing the information available from each of the websites on the topic, comparing and contrasting the investment information, and critically evaluating the information. After viewing and writing about each of the sites, employees were asked to make a recommendation to the client on the quality of the web resources they had just investigated. Employees were told they could include a table or figure in their report as a way to help organize their ideas but that this was not required.

Employees were asked to structure their written report into four sections, including an opening statement which summarized the report's contents, a research evaluation section where they were to summarize and compare/contrast each of the websites, and closing paragraph where they were to make their recommendation based on

the quality of information they had gathered. The fourth and final section of the report was an opportunity to evaluate the prospects associated with investing in a particular company based on the information employees had just gathered about investing in general. Each employee was provided with a company name and its stock ticker symbol. Company names included Ford Motor Company, Apple Computers, Proctor and Gamble, Verizon, Exxon Mobil, McDonald's, The Gap, and Eastman Kodak. Company information could be accessed from several of the project websites (Merrill Lynch, The Motley Fool) or through other financial related websites employees sought out on their own (e.g., <u>finance.yahoo.com</u>, <u>moneycentral.msn.com</u>, or the company's website). Employees were told that their reports were expected to be 4 pages in length, double spaced, 12-point font, 1.25" margins, and written using Microsoft Word.

As part of the instructions, employees were reminded that this was an individual task and any conversation between employees was not permitted. All participants were given the opportunity to take two 5 minute breaks during the session which took place approximately 1 and 2 hours after the start of the session. The breaks occurred at uneven minute intervals (example 9:08 vs. 9:10, 4:07 vs. 4:05) to make it more difficult for participants to easily tell when the 5 minute break was up. The work began approximately 10 minutes into the start of the session and all participants were given until 15 minutes prior to the session's end to complete their work. All participants were told to use the entire work period to create the highest quality report possible. The last 15 minutes were reserved for participants to complete a series of questionnaires and to distribute payment. This resulted in approximately 2 hours and 35 minutes of total work time. As participants completed their written report and indicated they were finished,

they were asked to answer a series of questionnaires. If an individual finished the report before the work time was up, they were asked if their report was complete and then they were escorted to a separate computer to complete the questionnaires. Otherwise, when the 2 hours and 35 minutes was up, all participants were asked to save their work to a floppy disk provided by DRG and were seated at a different computer to respond to the questionnaires. All questionnaires were administered online and consisted of a manipulation check, trust, justice, effort, attitudes about the Internet, attitudes about outsourcing, and demographics questions (Appendix E).

Following these required questions were two questionnaires about teamwork and financial investing that participants were told were optional and not required. When finished, participants were escorted away from their work station and debriefed. The employees were told about the true nature of this work experience, informed that they had been participants in a research exercise, and had not been performing a real job. They were given some background information on the purpose of the research and had the opportunity to ask questions. Participants were asked to give permission to use the data that had been gathered on them and to sign a permission form if they were willing to do so (Appendix F). Employees were told that they would be paid whether or not they granted this permission. After reading and signing the form, all participants were paid for their time and dismissed.

Throughout the work session, the session administrator and her assistant were monitoring participant behavior. The session administrator was seated at the front of the room to give the appearance of being the authority figure without imposing on the work space of any one individual. She stayed seated throughout the entire work session except

in the formal-internal control condition where she circulated around the room several times to check in on participants, consistent with that condition's control manipulation. The session administrator covertly timed and recorded the length of break that each participant took, as well as the minutes of participants' late arrivals or early departures (if applicable). The frequency of any other observable off-task behavior or chat between participants was also recorded. After participants began working, the assistant quietly seated herself in the back of the computer lab and covertly observed participants' behavior for things that could not be tracked via the computer's Internet Explorer history, such as playing Solitaire or using an Instant Messaging program. At the conclusion of the session, any observations made by the assistant were noted in the participant's observation file. After all participants left the room, both the session administrator and assistant were responsible for removing data from participants' computers. If a participant did not give permission for his or her data to be used as part of the research project, the data was not downloaded from the computer to the participant's data file. **Manipulations**

The manipulations employed in this study were generated from the two dimensions of control: formality and locus of responsibility. The formality manipulation underscored whether the type of control being used was formal (written) or informal (unwritten) in nature. The locus of responsibility manipulation indicated whether an external agent was monitoring behavior or whether an internal agent (the individual) was responsible for monitoring their own behavior. One of the following manipulations was included in the Terms of Employment form sent to participants:

Formal-External

To ensure that employees meet our work standards, we will be monitoring your workplace behavior. Our code of conduct states that employees must be on task, work efficiently, and conduct themselves in a professional manner at all times. We will be monitoring your Internet activity, tracking the web pages you look at, and checking in with you throughout your work session. You will be provided with these expectations again in writing when you arrive at your work session.

Formal-Internal

To ensure that employees meet our work standards, you will be responsible for keeping a work diary. This diary should be a list of all of your activities during your work session today. Our code of conduct states that employees must be on task, work efficiently, and conduct themselves in a professional manner at all times. You will be expected to commit to making a list of the web pages you visit and of all work-related behaviors that you do. You will be provided with these expectations again in writing when you arrive at your work session.

Informal-External

To ensure that employees meet our work standards, the administrator will be walking through the room to ensure that you are on task, working efficiently, and conducting yourself in a professional manner at all times. Ethical conduct is a defining characteristic of all DRG employees. Everyone is expected to conduct themselves appropriately and in the past, our employees have had a strong desire to comply with these principles.

Informal-Internal

To ensure that employees meet our work standards, we trust that you will commit to our values of keeping on task, working efficiency, conducting yourself in a professional manner at all times. Ethical conduct is a defining characteristic of all DRG employees. Everyone is expected to conduct themselves appropriately and in the past, our employees have had a strong desire to comply with these principles.

A more elaborate version of this manipulation was emphasized to employees at the start of their work session, reiterating their Terms of Employment and the type of control system that was in place during that day. Out of the four conditions of control, the formal-internal condition required some extra work of participants in that they were asked to keep a work diary. Participants were provided with a sheet to track their workplace activity and were asked to record their actions in a fair amount of detail. During pilot testing, participants said that the time for them to complete the work diary was negligible (under 5 minutes) and did not affect their ability to complete their work within the given time.

Pilot Testing

Prior to full data collection, a sample of 43 individuals (who did not participate in the full experiment) was used to conduct extensive pilot testing for several reasons, including: verifying psychological fidelity of control manipulations, gathering evidence that participants would engage in destructive and constructive behaviors as conceptualized and measured, verifying reliability of the deviance behavioral measures (e.g., will Internet Explorer history provide the necessary information or are participants clearing their history), assessing variance on destructive and constructive behavioral

measures, questioning their knowledge of norms (both work group and hypernorms), and understanding participant reactions to the experience itself, as a whole and in part. The quality of many of the experimental measures depended on being able to demonstrate the validity of the assessed manipulations.

Pilot testing examined the effects of all four conditions on behavior and beliefs about control. While the results did not reach significance, there was evidence that participants in the different conditions were sensitive to the control manipulations through the manipulation checks. For example, participants in the external condition (n = 14) more strongly endorsed the items referencing external control ("Dynamic Research Group was monitoring my behavior" and "An administrator walked through the room during the session") than did participants in the internal condition. On a scale of 1-5 where 1=strongly disagree and 5=strongly agree, means were 4.00 (external) and 3.12 (internal) for the first item and 4.21 (external) and 3.29 (internal) for the second item.

During pilot testing, participants were interviewed about their reactions to the experience and about each aspect of the research process at the conclusion of the work session. Data from these interviews also indicated that participants were sensitive to the control manipulations. A participant from the formal-external condition said that she thought the control seemed a little harsh but that the written expectations did impact what she did and did not do during the session. One participant from the informal-internal condition indicated that the norms presented at the beginning of the session were strong and if they had been told that the Dynamic Research Group was monitoring their behavior then they would not have looked at other websites. A second participant from this same session said that since the expectations were pretty relaxed and the

administrator was not walking around looking at what he was doing that he felt freer to check other websites and do what he wanted during the work session. These and other participants' responses were used to alter the pilot procedures which resulted in the final version described earlier. Their responses also gave evidence that the measures of deviance were justified and effective in this environment and that the expectations and amount of the work required of employees was not too much or too little for the time allotted.

Measures

To capture destructive and constructive deviance, several behavioral observations were made during data collection. These observations included: length of break 1 (minutes), length of break 2 (minutes), length of any extra breaks (minutes), chatting with other employees (frequency), any off task behavior such as playing Solitaire or using Instant Messaging software (frequency), arriving late to the session (minutes), length of written report (number of pages), presence of "extras" such as a table or figure in the written report (number), and the extent to which the participant responded to the optional questionnaires at the end of the session (percent complete). The rationale for the inclusion of these variables as deviant is described below.

In addition, participants' web activity was tracked via the History function within Microsoft Internet Explorer. The History function captured the name of each site visited (e.g., <u>www.msu.edu</u>) as well as the number of pages of information viewed within that site. An individual could visit <u>www.msu.edu</u> and simply view the home page (which would record 1 page of information) or someone could view the home page, click on

Academics and Research (<u>http://www.msu.edu/academics_research/index.html</u>), and further explore Academic Units by College (<u>http://www.msu.edu/common/academic/</u> <u>units.html</u>). This would result in a total of 3 pages viewed under the <u>www.msu.edu</u> umbrella. If a participant went to another website such as <u>www.cnn.com</u> and viewed a one page story about the weather and another one page story about politics, this would result in a total of 2 pages viewed under the <u>www.cnn.com</u> umbrella. In total, this participant has visited 2 different *sites* but viewed 5 *total pages of information*.

For each of the five websites required as part of the written report, an observation was made for whether or not the participant visited the site, followed by the number of pages of information that were viewed. All other websites participants visited were categorized into either extra financial-related websites or non-work related websites. Examples of extra financial websites included websites that provided general financial information such as <u>money.cnn.com</u> or the New York Stock Exchange (<u>www.nyse.com</u>) or the website of the organization that corresponded to the company each participant was asked to make an investment recommendation about (e.g., Proctor & Gamble, <u>www.pg.com</u>). Examples of non-work websites included any email sites (<u>mail.msu.edu</u>), e-commerce sites (<u>www.ebay.com</u>), or online communication sites (<u>www.myspace.com</u>). Observations were taken for whether or not each participant visited either extra financial related websites or non-work websites. If the participant visited either, the total number of sites visited was recorded by category, along with the total number of pages viewed within each site.

To determine which behaviors to include as deviant, the norms and expectations established from the Terms of Employment served as the baseline for judging behavior as

deviant or not deviant. While the definitions of deviance provided by Warren (2003) cite group norms as the proximal referent, in the current study, there was not enough time for norms to develop at the group level separate from the norms and expectations set at the organizational level within each control condition. Recognizing that norms can operate at multiple levels, in the current study the norms set at the organizational level were a better referent for judging deviant behavior and were used as the benchmark for assessing deviance.

For destructive deviance, any behaviors which violated both a priori work group norms and hypernorms were considered. In the Terms of Employment, the work group norms were established as all participants needing to keep on task, work efficiently, and conduct themselves in a professional manner at all times. The generally accepted hypernorm was similar in nature, with employees being expected to meet the organization's work standards as part of their employment. For constructive deviance, the Terms of Employment stated that employees were not expected to do anything beyond what was originally asked of them. This established the a priori work group norm. By providing opportunities to employees to go above and beyond expectations in adding a table or figure to their written report or completing optional questionnaires, opportunities to comply with the hypernorm of general good will were created.

Intercorrelations among deviance (destructive and constructive) and performance appear in Appendix G. The behaviors were standardized to accommodate the different measurement scales (e.g., frequency, minutes). To be considered either destructively or constructively deviant, the pattern of correlations demonstrate some content validity in that destructive behaviors were positively correlated and constructive behaviors were

positively correlated. For example the length of break 1 and break 2 correlated r = .21; people who took a long (or short) break at time 1 also took a long (or short) break at time 2. Participants who were more likely to chat with others also took a longer break at time 2 (r = .13). The number of non-work related websites visited also positively correlated with taking an extra break (r = .18) and off task behavior (r = .22). Employees who wrote a longer report were less likely to take a long break 1 (r = .15) but were more likely to include extras in their report (r = .19) and complete the extra teamwork questionnaire (r = .20) and financial questionnaire (r = .15). These correlations support the expected connections between destructive and constructive behaviors and legitimate their inclusion in an overall measure of deviance. Interestingly, individuals who were more likely to arrive late were less likely to visit extra financial websites (r = .13), but individuals who viewed more extra financial websites also visited more non-work related websites (r = .22) suggesting that the relationship between destructive and constructive behavior warrants further exploration.

With little opportunity for employees to talk, interact, or communicate, it is not likely that separate norms developed in individual work sessions related to the time on task, websites visited, et cetera. However, because individuals were clustered in sessions, a group level (session effect) was possible. To account for this potential effect, group session membership was considered as a level of analysis in a hierarchical linear model. The modeling of group membership took into consideration any group-specific effects that may have emerged in the experimental setting. However, because the focus of this research is on the overall effect of the control manipulation on deviance and not of group

session membership on deviance, the definition of deviance will stem from the overarching expectations that were set for all employees.

Destructive deviance. Several indicators of destructive deviance were gathered from behavioral observation data. Spending time checking email, visiting ESPN.com, or any other non-work related website violated these norms. One indicator of destructive deviance was whether or not participants visited non-work related websites, the total number of these websites visited, and the number of pages of information viewed. Because the amount of time spent on each page could not be tracked, the amount of pages viewed served as an indicator of the degree of destructive deviance.

The length of employees' breaks was judged by the experimenter. By telling participants that they had 5, and only 5 minutes, for their breaks, any participant who took longer than a 5 minute break was violating the norm of keeping on task as well as not meeting the organization's standards. In this case, the measure of destructive deviance was whether or not the participant took longer than a 5 minute break and the total length of their break. The experimenter who sat in the room recorded the time on individual observation sheets when each employee stopped working and stood up from their computer. When the employee sat back down at their computer, the time was recorded again. Rather than leaving the room, some employees took their break while sitting at their work station. This was evident when an employee stopped typing, pushed his or her chair back from their computer, and sat and relaxed for the break time. For these employees, the start of the break time was recorded when they stopped typing. As soon as the employee began working at the computer again, the time was again recorded. A clock on the experimenter's computer was used to measure start and stop times and

when multiple employees took their break simultaneously, the experimenter recorded each person's time on his or her individual observation sheet so as not to confuse the length of break between people.

Participants were observed for additional behaviors that also violated work standards and kept them off task. These behaviors included chatting with other employees, arriving to the session late, and any other off task behavior. Off task behavior included instances of playing computer games such as Solitaire, using an Instant Messaging program, sending or receiving text messages with a cell phone, or daydreaming. The experimenter who recorded break times also observed employees for these off task behaviors. These observations were supplemented by observations from the experimenter's assistant and where the observations overlapped, only one instance of the off task behavior was recorded in the participant's data file. Table 3 provides a summary of all destructive deviance behaviors and the number of employees engaging in each behavior.

Destructive deviance was based on seven behaviors. These were: length of break 1, length of break 2, length of extra break, number of non-work related websites visited, number of times chatted with others, number of times off task, and length of lateness. For chat, off task, and number of non-work websites visited, the raw scores were the sum of the number of occurrences. For length of break 1 and 2, the raw score was time in minutes when the break exceeded 5 minutes because the instructions indicated that a 5 minute break was allowed for each of these; destructive deviance occurred only when employees took longer than 5 minutes. For the extra break and length of lateness, the raw score was time in minutes as no extra breaks or lateness was permitted. Finally, for the

Table 3

λ	lumber	r of I	Empl	loyees	Engaging	in I	Destructive	Deviance	(Λ	/=22	25)
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Destructive Behavior	# Yes	# No
Taking longer than 5 minute breaks		
Break 1 R = 6 - 9 minutes	92	133
Break 2 R = 6 - 9 minutes	42	183
Extra break $R = 1 - 5$ minutes	8	217
Visiting non-work related websites R = 1 - 28 total sites R = 1 - 157 total pages	210	15
Chatting with other workers $R = 1 - 8$ instances	24	201
Off task behavior $R = 1 - 4$ instances	23	202
Arriving late to session R = 5 - 25 minutes	16	209

overall destructive deviance score, each raw score was standardized and the seven standard scores were summed as a measure of an individual's level of destructive deviance. Coefficient alpha for this scale was $\alpha = .41$. While alpha is low, it bears mentioning that for the domain of destructive deviance the link for any individual behavior to the overall domain is not meant to be strong because there are many ways to display deviance. Because actual behavior was measured, being deviant in one aspect of behavior (e.g, chatting with others) may mean that employees were not doing another (e.g., off task playing Solitaire). Therefore, while each behavior contributes to the overall measure of deviance, the individual behaviors are not intended to be highly positively correlated, which has resulted in a low coefficient alpha.

It is important to note that a large percentage of individuals did visit non-work related websites (210/225 participants) yet this behavior was not readily obvious to other participants in the room. Therefore, while the majority of participants engaged in this behavior, the subtle nature of the deviance did not disrupt the a priori norm and this behavior was still considered to be destructive in nature. Furthermore, since it was a destructive behavior in which all employees were likely to have thought they could do without being observed, it warrants inclusion in the destructive category as the action kept people from doing their work.

Constructive deviance. Several indicators of constructive deviance were gathered from behavioral observation data. Spending time visiting any additional financial-related websites that could be used to enhance their research report, such as <u>finance.yahoo.com</u>, violated the expectations that no other websites were to be visited, yet the outcome is beneficial because sites like these contain information which can enhance the quality of the written report. Therefore, one indicator of constructive deviance was whether or not participants visited additional financial-related websites, the total number of these websites visited, and the number of pages of information viewed. Because the amount of time spent on each page could not be tracked, the amount of pages viewed served as an indicator of the degree of constructive deviance.

The length of employees' breaks was judged by the experimenter. By telling participants that they had 5, and only 5 minutes, for their breaks, any participant who took shorter than a 5 minute break was violating work expectations but to the benefit of

the organization as the employee got back to work sooner. In this case, the measure of constructive deviance was whether or not the participant took shorter than a 5 minute break and the total length of their break.

Participants were observed for additional behaviors that also violated work standards but went above and beyond expectations. These behaviors included writing a report longer than the 4-page requirement and adding any non-required tables or figures to their written report. The experimenter checked each written report for page length as well as the number of tables or figures included and recorded these variables in participants' observation files.

One final indicator of constructive deviance was employees' willingness to complete some optional questionnaires at the conclusion of the work session. Participants who did complete additional questionnaires complied with the generally accepted hypernorm of helping out or having a good will and at the same time violated the work group norm of not being expected to do anything beyond the original terms. At the very end of the work session after employees completed the questionnaire items about justice and trust, two optional questionnaires were given to participants. The first optional questionnaire was a 2-item essay questionnaire about teamwork experiences and the second was a 10-item multiple choice/short answer questionnaire about financial investing. The teamwork questionnaire was presented before the financial investing questionnaire with the thought that the essay questionnaires would take some additional effort and truly require individuals to go "above and beyond" if they employees to fully complete both. Because the additional questionnaires contained multiple items, the indicator of constructive deviance was the percentage of questions completed (ranging

from 0-100%). Table 4 provides a summary of all destructive deviance behaviors and the number of employees engaging in each behavior.

Table 4

Number of Employees Engaging in Constructive Deviance (N=225)

Constructive Deviance	# Yes	# No
Taking shorter than 5 minute breaks		
Break 1 R = 0 - 4 minutes	102	123
Break 2 R = 0 - 4 minutes	168	57
Visiting extra financial-related websites R = 1 - 19 total sites R = 1 - 139 total pages	197	28
Responding to extra team questionnaire	14 = 50% 104 = 100%	107
Responding to extra financial questionnaire	6 = 10% $2 = 20%$ $1 = 30%$ $5 = 40%$ $2 = 50%$ $15 = 70%$ $13 = 80%$ $19 = 90%$ $98 = 100%$	64
Writing longer than 4-page report $R = 4.25 - 8$ pages	72	153
Adding extra (graph/figure) to report $R = 1 - 3$ extras	43	182

Constructive deviance was based on seven behaviors. These were: length of break 1, length of break 2, number of additional financial-related websites visited, length

of written report, number of tables and figures added to report, and percent complete of optional questionnaires. For number of tables/figures and number of additional financialrelated websites visited, the raw scores were the sum of the number of occurrences. For length of break 1 and 2, the raw score was time in minutes when the break was less than 5 minutes because the instructions indicated that a 5 minute break was allowed for each of these; constructive deviance occurred only when employees took less than 5 minutes. For the length of the written report, the raw score was the number of pages when the page length was longer than 4 as the instructions stated that a 4 page report was expected as part of the work. Constructive deviance occurred only when employees wrote a longer report. For the percent complete of optional questionnaires, the raw score was the percentage of questions answered. Finally, for the overall constructive deviance score, each raw score was standardized and the seven standard scores were summed as a measure of an individual's level of constructive deviance. Coefficient alpha for this scale was $\alpha = .35$. As with the measure of destructive deviance, while alpha is low, it bears mentioning that for the domain of constructive deviance the link for any individual behavior to the overall domain is not meant to be strong because there are many ways to display deviance. Because actual behavior was measured, being deviant in one aspect of behavior (e.g., visiting additional financial related websites) may mean that employees were not doing another (e.g., responding to optional questionnaires). Therefore, while each behavior contributes to the overall measure of constructive deviance, the individual behaviors are not intended to be highly positively correlated, which has resulted in a low coefficient alpha.

Similar to the behavior of individuals in the destructive category, it is important to note that a large percentage of individuals did visit extra financial related websites (197/225 participants) yet this behavior was subtle in nature and was not readily obvious to other participants in the room. Therefore, while the majority of participants engaged in this behavior, the subtle nature of the deviance did not disrupt the a priori norm and this behavior was still considered to be constructive in nature.

Conscientiousness. As part of the employment application, conscientiousness was measured using a 10-item measure from the IPIP (Goldberg, 1999). Coefficient alpha for this scale was 0.81.

Proactive personality. As part of the employment application, a modified version of Bateman and Crant's (1993) 17 item scale of proactive personality was used. A sample item is "Wherever I have been, I have been a powerful force for constructive change." Coefficient alpha was 0.87.

Financial knowledge. Included in the employment application was a 15 item financial knowledge test used to assess participant's knowledge and ability. The items were taken from two financial investments websites (<u>http://www.investored.ca</u> and <u>http://www.investorwords.com</u>). Items were scored 0 for incorrect and 1 for correct.

Manipulation check. Using the manipulations as a basis, several items were created. Items are listed in Appendix E. Three items were created to check the effectiveness of the external control manipulation (Items 1, 5, and 8). An example item was: "I knew that my company Dynamic Research Group was charged with monitoring my behavior." These items were combined into a single external manipulation check scale with $\alpha = .55$.

Two items were created to check the effectiveness of the internal control manipulation (Items 4 and 7). An example item was: "I knew that I, and not Dynamic Research Group, was charged with monitoring my own behavior." These items were analyzed independently because the alpha for the scale was too low ($\alpha = .12$).

To assess the efficacy of the formal/informal control manipulation, three manipulation check items were created, one of which (Item 2) addressed participants' sensitivity to the formal manipulation: "At the start of today's session, I was given a written, formal document explaining how I was expected to keep on task, work efficiently, and conduct myself in a professional manner at all times."

The remaining two items (Items 3 and 6) specifically related to the informal control manipulation addressed the notion that participants were told in an informal, unwritten manner about the work expectations of the day and that DRG expected participants to commit to their values and comply with their principles. These items were combined into a scale for the informal condition manipulation check (α =.49).

Justice. Organizational justice was measured using Colquitt's (2001) 4 item measure of distributive justice, 7 item measure of procedural justice, and 4 item measure of interpersonal justice. Coefficients alpha for these scales were 0.88, 0.67, and 0.91, respectively.

Trust. Robinson and Rousseau's (1994) 7 item scale of trust was used to measure employee perceptions of the organization's trust in them. A sample item is "Dynamic Research Group is open and upfront with me." Coefficient alpha was 0.74.

Additional measures. Several additional measures were included in the set of final questionnaires to which participants responded to further conceal the nature of the

experiment. Because it was important for employees to believe in the realism of the work experience, these measures were included in the final set of questionnaires as a way to enhance the face validity of this portion of the experiment. Without these additional questionnaires, employees may have been suspicious about the psychological nature of many of the manipulation check, justice, and trust items.

These additional questionnaires included attitudes about the Internet (Lavoie & Pychyl, 2001), attitudes about outsourcing, and a 5-item measure of withholding effort modified from Kidwell and Robie (2003). The measure of withholding effort ($\alpha = 0.79$) was used to assess the construct validity of the destructive and constructive deviance behavioral measures. Consistent with expectations, withholding effort was positively correlated with the standardized composite of destructive deviance (r = 0.20, p < .01) suggesting that as participants reported withholding effort was negatively correlated with the standardized composite of fort was negatively correlated with the standardized standardized composite of (r = -0.16, p < .05) suggesting that as participants reported withholding effort was negatively correlated with the standardized composite of constructive deviance (r = -0.16, p < .05) suggesting that as participants reported withholding effort was negatively correlated with the standardized composite of constructive deviance (r = -0.16, p < .05) suggesting that as participants reported withholding effort was negatively correlated with the standardized composite of constructive deviance (r = -0.16, p < .05) suggesting that as participants reported withholding less effort, more constructive deviance was observed.

Several measures of performance were also gathered as a way to understand baseline expectations for internet activity and general work conduct. Performance is not a variable that will be tested in the experimental model but nevertheless it does help to understand the types of things employees were doing while they were working. Performance measures included whether or not participants visited all five required websites and the number of pages of material viewed across all websites, including required and non-required pages. Two hundred twenty one participants visited all required sites with an average of 60.29 pages viewed across these required sites. When

participants visited other financial and content-related sites, they viewed on average 12.00 pages of information; when visiting non-work related websites, an average of 14.16 pages of information were viewed. In total, participants viewed an average of 86.45 pages (across required and non-required sites). There was a wide range of activity within this performance dimension (R = 14-195 pages viewed), suggesting that the number of pages viewed is just one aspect of performance but not a substitute for the thoroughness of the job completed. To assess the thoroughness of performance would require evaluation of each of the written reports, which is beyond the scope of this study. However, with the expectation of the written report set at 4 pages, performance was also assessed via the length of the written report. Participants did fulfill this performance expectation as reports were, on average, 3.96 pages long. Judging from internet activity, it is reasonable to say that participants were largely on task (60 out of 80 pages viewed, on average, came from required sites) and met expectations for the length of the written report.

RESULTS

A summary of the results of all hypothesis tests is provided in Appendix H. The means, standard deviations, intercorrelations, and where appropriate, internal consistency estimates of reliability, are provided for all variables in Table 5. The sections below describe the effects of the experimental manipulations on the hypothesized relationships as well as additional analyses used to test the experimental model in more detail.

Hierarchical linear modeling (HLM, Raudenbush, Bryk, & Congdon, 2000) was used for many analyses. HLM was appropriate for these data because individuals were nested within groups when the data was collected. Because of this nested structure, as

Variable	Σ	SD	1	7	m	4	S	9	٢	×
1. Formal-informal	:									
2. External-internal	ł	ł	-0.01	:						
3. Conscientiousness	3.81	0.63	0.01	-0.08	(.81)					
4. Proactive personality	3.78	0.50	-0.03	-0.04	0.44**	(.87)				
5. Procedural justice	3.88	0.49	0.01	-0.08	0.24**	0.03	(89)			
6. Distributive justice	4.12	0.69	0.04	-0.06	0.18**	0.13*	0.41**	(88)		
7. Interpersonal justice	4.64	0.49	0.03	-0.02	0.18**	0.15*	0.37**	0.36**	(16.)	
8. Trust	4.04	0.53	0.00	0.08	0.35**	0.15*	0.52**	0.41**	0.49**	(.74)
9. Withholding effort	1.79	0.66	0.05	0.01	-0.21**	-0.24**	-0.38**	-0.32**	-0.30**	-0.47**
10. Financial knowledge	6.04	1.96	0.05	-0.07	-0.11	0.06	-0.01	-0.13*	0.01	0.02
11. Age	21.55	4.01	0.01	-0.05	-0.02	0.08	-0.12	-0.06	-0.16*	-0.04
12. Gender	1.62	0.49	0.03	0.03	0.16*	0.09	-0.03	0.06	-0.08	0.05
13. Years work experience	5.62	3.39	0.08	-0.08	-0.11	0.09	-0.13*	-0.03	-0.11	-0.07
14. Ethnic background	3.97	1.53	0.06	-0.02	-0.09	-0.01	0.01	0.03	0.01	-0.05
15. Group membership	17.93	8.95	0.55**	0.27**	-0.03	-0.04	0.02	0.00	0.04	0.06
16. Destructive deviance	2.08	2.41	-0.05	0.05	-0.08	-0.07	-0.03	0.11	-0.12	-0.13*
17. Constructive deviance	3.19	1.95	0.08	0.13*	-0.04	-0.04	0.00	-0.05	0.03	-0.01

Means, Standard Deviations, and Correlations of Experimental Variables

Table 5

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Variable	6	10	11	12	13	14	15	16
9. Withholding effort	(62.)							
10. Financial knowledge	-0.04							
11. Age	-0.07	0.12						
12. Gender	-0.05	-0.18**	0.01					
13. Years work experience	0.04	0.10	0.74**	-0.02				
14. Ethnic background	0.04	0.13*	-0.11	-0.05	0.07			
15. Group membership	0.05	0.00	-0.03	0.11	0.00	0.00		
16. Destructive deviance	0.20**	-0.12	-0.00	-0.07	-0.02	-0.04	-0.06	
17. Constructive deviance	-0.16*	0.13*	-0.03	0.04	-0.06	-0.08	0.04	-0.15

well as unequal sample size and unequal variance between groups, HLM analysis was more appropriate for the data than ANOVA analysis, which is commonly used to test similar between-group differences, minus levels of analysis. When interpreting HLM results, there are several effects to consider. To determine the effect of the manipulations on behavior, a significant effect should be present for the level 2 predictor of the formal/informal control manipulation (γ_{01}) or the external/internal control manipulation (γ_{02}) as indicated by the hypotheses. Proponents of HLM suggest that one precondition to testing for level 2 predictors is sufficient between-group variance (τ_0) at level 1 (Hoffman, 1997). However, for the current study, between-group variance at level 1 is less of an issue because the focal predictions are based on the effect of the manipulations on behavior rather than the effects of group membership on behavior. While significant between-group variance at level 1 will be reported, analyses still proceeded when between-group variance was not significant and level 2 tests for the effects of the manipulations were conducted.

Manipulation Checks

Mean values of the manipulation check items/scales by condition are presented in Table 6. Item numbers correspond to the scale presented in Appendix E. In the event that group size was to influence behavior, size was included as a grand mean centered predictor in all level 2 analyses. Grand mean centering is recommended when both categorical and continuous predictors are used in HLM analysis (Hoffman & Gavin, 1998) as was the case with categorical dichotomous manipulations and continuous group size.

Table 6

Mean (SD) Values of Manipulation Check Items by Condition (N=225)

	Formal	Informal	External	Internal
External (Items 1, 5, 8)	3.55 (0.72)	3.36 (0.84)	3.72 (0.70)	3.22 (0.78)
Internal				
Item 4: Work diary	3.57 (1.56)	2.07 (1.01)	2.18 (1.10)	3.36 (1.60)
Item 7: Self-responsible	3.60 (1.50)	3.96 (0.88)	3.62 (1.09)	3.93 (0.86)
Formal (Item 2)	4.69 (0.69)	4.53 (0.85)	4.65 (0.69)	4.57 (0.84)
Informal (Items 3, 6)	3.96 (0.87)	4.18 (0.84)	4.07 (0.85)	4.08 (0.88)

External control. Results revealed significant between-group variance at level 1, $\tau_0 = 0.08$, df = 30, $\chi^2 = 65.05$, p < .01, ICC = 0.15. Further analysis revealed that participants in the external condition more strongly endorsed these items than did participants in the internal control condition, ($\gamma_{02} = -0.51$, se = 0.11, t = -4.52, p < .01), providing support for this manipulation. After adding these level 2 predictors, the between-group variance which was previously significant at level 1 was no longer significant, $\tau_0 = 0.03$, df = 27, $\chi^2 = 34.82$, p = .14.

Internal control. For the item "I was asked to keep a work diary, including a list of the web pages I visited and all the work-related behaviors I did," results revealed significant between-group variance at level 1, $\tau_0 = 1.36$, df = 30, $\chi^2 = 340.79$, p < .01, ICC = 0.59. Further analysis revealed that participants in the internal condition more strongly endorsed these items than did participants in the external control condition, (γ_{02} = 1.24, se = 0.27, t = 4.64, p < .01) (Table 6). After adding these level 2 predictors, the between-group variance which was previously significant at level 1 remained significant, $\tau_0 = 0.46$, df = 27, $\chi^2 = 126.45$, p < .01.

Similarly, participants in the internal condition also more strongly endorsed the second internal condition manipulation check, "I knew that I, and not Dynamic Research Group, was charged with monitoring my own behavior," ($\gamma_{02} = 0.30$, se = 0.13, t = 2.41, p < .05). Results revealed marginally significant between-group variance at level 1, $\tau_0 = 0.06$, df = 30, $\chi^2 = 41.97$, p = .07, ICC = 0.06, which was not significant after entering the level 2 predictors, $\tau_0 = 0.01$, df = 27, $\chi^2 = 27.71$, p = .43. These analyses combined provide support for the success of the internal control manipulation.

Interestingly, participants in the informal control condition also more strongly endorsed the belief that they were individually more responsible for monitoring their behavior [Item 7, ($\gamma_{01} = 0.36$, se = 0.13, t = 2.88, p < .01)] and participants in the formal condition more strongly endorsed the belief that they were asked to keep a work diary [Item 4, ($\gamma_{01} = -1.48$, se = 0.27, t = -5.58, p < .01)], despite these items not reflecting content unique to the formal or informal control condition. This is likely due to the nature of the between subjects design which fully crossed the external/internal manipulation with the formal/informal control manipulation; participants in the formal and informal cells were also exposed to the external or internal manipulation per their respective condition.

Formal control. Results revealed no significant between group variance at level 1, $\tau_0 = 0.01$, df = 30, $\chi^2 = 32.70$, p = .33, ICC = 0.02, but a marginal effect for the formal/informal condition on this item at level 2, $\gamma_{01} = -0.17$, se = 0.10, t = -1.72, p = .10, suggesting that participants in the formal control condition were somewhat more likely to perceive they had been given a written, formal document outlining the specifications of control. In retrospect, while participants in the formal condition did receive special written expectations outlining the control system that would be in place, all participants were provided with both written instructions as to how to complete the internet search task as part of their job for the day, which could have been interpreted in the same way as the manipulation for control.

Informal control. Results at level 1 revealed no significant between-group variance, $\tau_0 = 0.01$, df = 30, $\chi^2 = 29.33$, p > .50, ICC = 0.01. Despite low alpha (α =.49), results at level 2 revealed a significant effect for the formal/informal condition on the informal manipulation check scale ($\gamma_{01} = 0.23$, se = 0.10, t = 2.17, p < .05) such that participants in the informal condition more strongly endorsed these items than participants in the formal control condition. This suggested that the informal control manipulation was successful.

While results from this overall analyses demonstrated that the formal manipulation was weaker than the other control manipulations, significant differences observed for all other items and/or scales warranted further exploration of the effects of both the formal/informal and external/internal control manipulations on process reactions and deviance behavior.

Hypotheses 1-4

To examine the effects of the manipulations on process reactions, HLM was performed. The covariates of demographics, financial knowledge, and years of work experience did not correlate significantly with the manipulations and were therefore not
included in the HLM analysis. Group size was included as a level 2 predictor. Mean values for all justice and trust variables are presented in Table 7.

Table 7

	Formal	Informal	External	Internal
Procedural Justice	3.87 (0.52)	3.88 (0.45)	3.92 (0.49)	3.84 (0.49)
Distributive Justice	4.09 (0.69)	4.15 (0.69)	4.17 (0.62)	4.08 (0.74)
Interpersonal Justice	4.63 (0.50)	4.69 (0.49)	4.67 (0.50)	4.65 (0.49)
Trust	4.03 (0.53)	4.05 (0.52)	4.00 (0.53)	4.08 (0.52)

Mean (SD) Values of Process Variables by Condition (N=225)

Hypothesis 1. Hypothesis 1 suggested that internal control would result in more positive procedural justice reactions than would external control. Despite significant between-group variance at level 1, $\tau_0 = 0.02$, df = 30, $\chi^2 = 51.41$, p < .01, ICC = 0.08, results revealed no significant effect of external or internal control on procedural justice, $\gamma_{02} = -0.06$, se = 0.08, t = -0.70, p = .49. Therefore hypothesis 1 was not supported.

Hypothesis 2. Hypothesis 2 suggested that formal control would result in more positive distributive justice reactions than would informal control. There was no significant between-group variance at level 1, $\tau_0 = 0.01$, df = 30, $\chi^2 = 36.16$, p = .20, ICC = 0.02. Further results revealed no significant effect of formal or informal control on distributive justice at level 2, $\gamma_{01} = -0.08$, se = 0.09, t = -0.89, p = .38. Therefore hypothesis 2 was not supported.

Hypothesis 3. Hypothesis 3 suggested that external control would result in less positive interpersonal justice reactions than would internal control. With no significant between-group variance at level 1, $\tau_0 = 0.01$, df = 30, $\chi^2 = 32.45$, p = .35, ICC = 0.04,

further results revealed no significant effect of external or internal control on interpersonal justice at level 2, $\gamma_{02} = -0.00$, se = 0.07, t = -0.06, p = .95. Therefore hypothesis 3 was not supported.

Hypothesis 4. Hypothesis 4 suggested that internal control would result in more positive trust reactions than would external control. There was no significant betweengroup variance at level 1, $\tau_0 = 0.01$, df = 30, $\chi^2 = 36.21$, p = .20, ICC = 0.04. Further results revealed no significant effect of external or internal control on trust at level 2, γ_{02} = 0.09, se = 0.07, t = 1.16, p = .26. Therefore hypothesis 4 was not supported.

Summary. Contrary to expectations, the control manipulations did not result in any differences in justice or trust reactions. Post-hoc analysis suggested that restricting the sample to participants in the 10^{th} and 90^{th} percentile on justice (n = 13 - 37individuals, depending on form of justice) and trust (n = 35) reactions still did not result in significant differences as predicted by the hypotheses. For this type of work, the presence of control expectations may not have been so extraordinary that it incited negative reactions. Employees' ability to do their work was not greatly hampered by any one form of control, so control may not have been as offensive or limiting. Without knowing any differently, the type of control seemed reasonably fair and trustworthy and the strongly negative reactions were absent. Because the manipulations were not significantly associated with the process reactions, the mediation hypotheses (H 11b – H 14b) cannot be supported and will not be tested.

Hypotheses 5-8

This set of hypotheses suggested that the process reactions would affect the two dependent variables in a variety of ways. To examine these hypotheses, simple

regression analyses were conducted. Group membership was not included as a covariate because its influence was already accounted for in the relationship between the independent variables and process measures prior to this set of analyses. For all analyses, the appropriate justice or trust variable was entered in Step 1 and the dependent variable was the standardized composite of either destructive or constructive deviance.

Before describing the hypothesis tests for destructive and constructive deviance, it is important to understand the distribution, range, and nature of the standardized deviance composite scales. These values are displayed in Table 8.

Table 8

Descriptive Statistics	for	Deviance	(N=225))
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	Constructive Deviance	Destructive Deviance
Mean	3.19	2.08
Standard Deviation	1.95	2.41
Range	0.0 - 11.61	0.0 - 13.13
Kurtosis	1.51	4.95
Skewness	1.00	2.10

Both distributions were positively skewed but this was to be expected as deviance is typically a low base rate behavior (Figures 2 and 3).

Figure 2

Distribution of Destructive Deviance



The constructive deviance composite also had positive kurtosis, indicating that a large number of individuals engaged in a small amount of constructive behavior. While some scholars advocate for the transformation of non-normal data, it was important to retain the low base rate distribution which is somewhat unique to deviance behavior. Therefore, the common square root data transformation for positively skewed data and logarithm for positive kurtosis was not used to normalize the distribution as these transformations can sometimes hamper the interpretation of variables, especially when data are grouped (Tabachnick & Fidell, 2001).

Figure 3

Distribution of Constructive Deviance



Hypothesis 5. Hypothesis 5 suggested that more positive justice reactions would result in greater frequency of constructive deviance. Results revealed no significant effects for any of the justice variables on constructive deviance, and therefore Hypothesis 5 was not supported (Table 9).

Summary of Regression Analysis for Justice Variables Predicting Constructive Deviance (N=225)

Variable	В	SE B	β	R ²	
Procedural	0.04	0.30	0.01		
Distributive	-0.19	0.22	-0.07		
Interpersonal	0.21	0.29	0.05	0.01	

Hypothesis 6. Hypothesis 6 suggested that more negative justice reactions would result in greater frequency of destructive deviance. Results revealed a significant effect for both distributive and interpersonal justice on destructive deviance. As expected, lower interpersonal justice reactions resulted in greater destructive deviance, yet higher distributive justice reactions also resulted in greater destructive deviance (Table 10). Therefore Hypothesis 6 was only partially supported.

Table 10

Summary of Regression Analysis for Justice Variables Predicting Destructive Deviance (N=225)

Variable	В	SE B	β	R ²	
Procedural	-0.23	0.37	-0.05		
Distributive	0.66	0.26	0.19**		
Interpersonal	-0.95	0.36	-0.17*	0.04*	

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

Hypothesis 7. Hypothesis 7 suggested that more positive trust reactions would result in greater frequency of constructive deviance. Results revealed no significant effect for trust on constructive deviance ($\beta = -.01$, p = ns.) and therefore Hypothesis 7 was not supported.

Hypothesis 8. Hypothesis 8 suggested that more positive trust reactions would result in lower frequency of destructive deviance. Results revealed a significant effect for trust on destructive deviance, $\beta = -.13$, p < .05, $R^2 = 0.02$, such that higher trust reactions resulted in lower destructive deviance. Therefore Hypothesis 8 was supported.

Summary. Consistent with expectations, more positive interpersonal justice and trust reactions lead to lower destructive deviance, yet more positive distributive justice

reactions lead to increased destructive deviance. Post-hoc analysis was conducted to examine if any one item from the distributive justice scale was driving results in this unexpected direction. Table 11 displays the result of this analysis.

Table 11

Variable	В	SE B	β	R ²	
Distributive_1	0.10	0.27	0.04		
Distributive_2	0.54	0.35	0.16+		
Distributive_3	-0.15	0.32	-0.05		
Distributive_4	0.20	0.34	0.06		
Procedural	-0.22	0.38	-0.05		
Interpersonal	-0.88	0.37	-0.18*	0.05+	

Post-Hoc Regression Analysis for Justice Variables Predicting Destructive Deviance (N=225)

Note. + p < .10; * p < .05. Distributive_1=Item 1 of distributive justice scale; Distributive_2=Item 2; Distributive_3=Item 3; Distributive_4=Item 4.

Results of this post-hoc analysis showed that Item 2, "My pay is appropriate for the work I have completed," was marginally significant. In the context of destructive behavior, individuals who thought that their pay was appropriate were more likely to engage in destructive behavior and slack off their responsibilities. Because pay was distributed equally and not based on equity, individuals who worked less were not punished with lesser pay. Conversely, those individuals who were working hard (not engaging in destructive behavior) did not think their pay was fair. Because the pay structure rewarded everyone regardless of effort, this group of individuals was likely under-rewarded. Overall, paying everyone \$30 for 3 hours work without consideration of performance seemed to have inadvertently driven negative behavior. Another explanation for these findings stems from the equality rule of distributive justice. Pay in this environment was allocated based on the equality rule (versus the equity rule) where everyone was paid the same amount for their time and effort. For the type of work being done, employees may have seen the pay as fair but they may have also taken advantage of the situation and engaged in greater destructive deviance because they knew if they were deviant they would not encounter any negative consequences such as receiving less pay. Had pay been distributed based on an equity rule where greater (or fewer) contributions led to greater (fewer) pay, the positive relationship between distributive justice and destructive deviance would not likely exist.

It is also worth noting that the high mean levels of justice reactions and the pattern of correlations between the distributive justice, destructive deviance, and withholding effort suggest that the relationship between distributive justice and destructive deviance may be a spurious effect. For example, distributive justice and withholding effort correlated r = -.32 (p = .01) and withholding effort and destructive deviance correlated r = .20 (p = .01), yet distributive justice and destructive deviance correlated r = .11 (p = .11). This pattern suggested that greater distributive justice was negatively related to withholding effort, which was positively related to destructive deviance, yet the regression results indicated a positive relationship between distributive justice and destructive deviance, which would not be supported by the correlations alone. Because of this pattern and the marginal correlation between distributive justice and destructive deviance, there is also the possibility that sampling variation and measurement error may explain these unexpected findings.

Hypotheses 9-10

This set of hypotheses predicted that two individual difference variables, conscientiousness and proactive personality, would affect the relationships proposed in Hypotheses 5-8. Hypotheses 9-10 were tested using moderated hierarchical regression. The appropriate process reaction and individual difference were entered in Step 1 followed by the interaction between process and individual difference in Step 2.

Hypothesis 9a. This hypothesis predicted that conscientiousness would moderate the relationship between trust and destructive deviance. Following on the significant relationship between trust and destructive deviance supported in Hypothesis 8, the interaction between trust and conscientiousness was also significant ($\beta = 1.33$, p < .01, $\Delta R^2 = 0.03$) (Table 12). A graph of this interaction reveals when conscientiousness was low, high trust depressed destructive behavior (Figure 4). Therefore, Hypothesis 9a was supported.

Table 12

Variable	В	SE B	β	ΔR^2
Step 1				
Trust (T)	-0.54	0.32	-0.12	
Conscien (C)	-0.16	0.27	-0.04	0.02
Step 2				
ΤxC	1.33	0.49	2.06**	0.03**
Total R ²				0.05

Summary of Hierarchical Regression Analysis for Trust x Conscientiousness <u>Predicting Destructive Deviance (N=225)</u>

Note. ****** p < .01. Conscien=Conscientiousness.

Figure 4



Interaction Between Conscientiousness and Trust on Destructive Deviance

Hypothesis 9b. This hypothesis predicted that conscientiousness would moderate the relationship between justice reactions and destructive deviance. While some relationships between justice and destructive deviance were supported in Hypothesis 6, the interaction between conscientiousness and justice was not significant (Table 13). Therefore, Hypothesis 9b was not supported.

Summary of Hierarchical Regression Analysis for Justice x Conscientiousness <u>Predicting Destructive Deviance</u> (N=225)

Variable	<u>B</u>	SE B	β	ΔR^2
Step 1				
Distributive (DJ)	0.68	0.26	0.10**	

Table 13 (cont'd.)

Variable	В	SE B	β	ΔR^2
Procedural (PJ)) -0.17	0.37	-0.03	
Interpersonal (1	IJ) -0.81	0.34	-0.17*	
Conscien (C)	-0.29	0.26	-0.08	0.05*
Step 2				
DJ x C	-0.02	0.35	-0.04	
PJ x C	0.82	0.62	1.15	
IJхC	-0.03	0.60	-0.05	0.01
Total R ²				0.06

Note. * p < .05; ** p < .01. Conscien=Conscientiousness.

Hypothesis 9c. This hypothesis predicted that conscientiousness would moderate the relationship between trust and constructive deviance. Following from the lack of a relationship between trust and constructive deviance as hypothesized in Hypothesis 7, the interaction between trust and conscientiousness was also not significant (Table 14). Hypothesis 9c was not supported.

	enre Dernan				
Variable	В	SE B	β	ΔR^2	
Step 1					
Trust (T)	0.02	0.26	0.01		
Conscien (C)	-0.11	0.22	-0.04	0.00	

Summary of Hierarchical Regression Analysis for Trust x Conscientiousness <u>Predicting Constructive Deviance (N=225)</u>

Table 14 (cont'd.)

Variable	<i>B</i>	SE B	β	ΔR^2	
Step 2					
ТхС	0.09	0.41	0.17	0.00	
Total R ²				0.01	

Note. Conscien=Conscientiousness.

Hypothesis 9d. This hypothesis predicted that conscientiousness would moderate the relationship between justice and constructive deviance such that when conscientiousness was low, the relationship would be stronger. While there were no main effects for justice on constructive deviance, the interaction between procedural justice and conscientiousness on constructive deviance was significant ($\beta = 1.98$, p < .05, $\Delta R^2 = 0.03$) (Table 15). A graph of this interaction revealed when procedural justice was low, individuals high in conscientiousness were most likely to engage in constructive behavior (Figure 5). Because the relationship was in the opposite direction than hypothesized, Hypothesis 9d was not supported.

Summary of Hierarchical Regression Analysis for Justice x Conscientiousness <u>Predicting Constructive Deviance (N=225)</u>

Variable	В	SE B	β	ΔR^2	
Step 1					
Distributive (DJ) -0.19	0.22	-0.07		
Procedural (P	PJ) 0.06	0.31	0.02		
Interpersonal	(IJ) 0.22	0.30	0.06		
Conscien (C)	-0.12	0.22	-0.04	0.00	

Table 15 (cont'd.)

Variable	<u> </u>	SE B	β	ΔR^2	
Step 2					
DJ x C	-0.43	0.29	-0.87		
PJ x C	1.14	0.50	1.98*		
IJхC	-0.38	0.49	-0.72	0.03	
Total R ²				0.03	

Note. * p < .05. Conscien=Conscientiousness.

Figure 5

Interaction Between Conscientiousness and Procedural Justice on Constructive Deviance



Hypothesis 10a. This hypothesis predicted that proactive personality would moderate the relationship between trust and constructive deviance. Just as the relationship between trust and constructive deviance was not supported in Hypothesis 7, the interaction between proactive personality and trust was also not significant (Table 16). Therefore, Hypothesis 10a was not supported.

Table 16

X

Summary of Hierarchical Regression Analysis for Trust x Proactive Personality Predicting Constructive Deviance (N=225)

Variable	B	SE B	β	ΔR^2	
Step 1					
Trust (T)	-0.01	0.25	0.00		
Proactive (P)	-0.16	0.26	-0.04	0.00	
Step 2					
ТхР	-0.66	0.49	-1.04	0.01	
Total R ²				0.01	

Hypothesis 10b. This hypothesis predicted that proactive personality would moderate the relationship between justice reactions and constructive deviance. Following on the null results from Hypothesis 5 linking justice constructive deviance, there was also no significant interaction between constructive deviance and proactive personality (Table 17). Therefore, Hypothesis 10b was not supported.

Table 17

Summary of Hierarchical Regression Analysis for Justice x Proactive	Personality
Predicting Constructive Deviance (N=225)	

Variable	B	SE B	β	ΔR^2
Step 1				
Distributive (D	DJ) -0.18	0.22	-0.07	
Procedural (PJ) 0.02	0.30	0.01	
Interpersonal (IJ) 0.23	0.30	0.06	
Proactive (P)	-0.16	0.26	-0.04	0.00
Step 2				
DJ x P	-0.52	0.40	-0.92	
PJ x P	0.59	0.63	0.82	
IJ x P	-0.41	0.57	-0.31	0.02
Total R ²				0.02

Summary. Despite a lack of main effect relationships between justice and trust and constructive and destructive deviance, the interactions between conscientiousness and trust on destructive deviance and between procedural justice and conscientiousness on constructive deviance were significant. While individuals low in conscientiousness may otherwise be inclined to engage in destructive deviance, feelings of high trust diffused this inclination. A sense of procedural fairness, however, did not enhance the likelihood of constructive behavior for individuals low in conscientiousness. In this situation, despite feeling procedural injustice, highly conscientious individuals still engaged in constructive deviance. This finding is consistent with LePine et al.'s (2002) results linking high conscientiousness to constructive behavior, yet the under the

influence of procedural justice, the relationship is not as clear. Because of the high mean on procedural justice (M = 3.88, SD = 0.49) and conscientiousness (M = 3.81, SD = 0.63), one standard deviation below the mean is still above the midpoint on either 5-point scale, suggesting that "low" procedural justice or conscientiousness is still relatively high. In fact, a post-hoc planned comparison did not reveal any significant differences in means between groups, mainly because when creating groups containing individuals scoring lower (higher) than 1 standard deviation below (above) the mean for both procedural justice and conscientiousness, the sample size was severely restricted to 19 individuals. Therefore, the apparent negative impact of high procedural justice on highly conscientious individuals warrants careful interpretation as the differences between individuals on these variables is not very large and may be due to a measurement artifact similar to a ceiling effect.

Hypotheses 11-14

Hypotheses 11-14 were designed to fully examine the mediating and moderating effects operating in the experimental model. Because Hypotheses 1-4 were not supported, the mediating relationships proposed in Hypotheses 11b, 12b, 13b, 13c, 14b, and 14c will also not be supported and will not be tested. However, the direct relationship between the control manipulations and the different forms of deviance was still examined using HLM.

Hypothesis 11a. Hypothesis 11a predicted that formal control systems were more likely to limit destructive deviance than informal control systems. Despite significant between-group variance at level 1, $\tau_0 = 1.21$, df = 30, $\chi^2 = 83.56$, p < .01, ICC = 0.21, results revealed no significant effect for formal or informal control on destructive

deviance, $\gamma_{01} = -0.21$, se = 0.48, t = -0.46, p = .65. Therefore Hypothesis 11a was not supported.

Hypothesis 12a. Hypothesis 12a predicted that formal control systems were more likely to limit constructive deviance than informal control systems. Significant between group variance was observed at level 1, $\tau_0 = 0.68$, df = 30, $\chi^2 = 74.46$, p < .01, ICC = 0.18. Further analysis, however, did not reveal a significant effect for formal/informal control on constructive deviance, $\gamma_{01} = 0.3564$, se = 0.34, t = 1.04, p = .32. Therefore Hypothesis 12a was not supported.

Hypothesis 13a. Hypothesis 13a predicted that external control systems were more likely to limit destructive deviance than internal control systems. Despite significant between-group variance at level 1, $\tau_0 = 1.21$, df = 30, $\chi^2 = 83.56$, p < .01, ICC = 0.21, results revealed no significant effect for external or internal control on destructive deviance, $\gamma_{02} = 0.25$, se = 0.48, t = 0.52, p = .61. Therefore Hypothesis 13a was not supported.

Hypothesis 14a. Hypothesis 14a predicted that external control systems were more likely to limit constructive deviance than internal control systems. Significant between group variance was observed at level 1, $\tau_0 = 0.68$, df = 30, $\chi^2 = 74.46$, p < .01, ICC = 0.18. Further analysis revealed a marginally significant effect for external/internal control on constructive deviance, $\gamma_{02} = 0.64$, se = 0.33, t = 1.92, p = .06, such that the frequency of constructive deviance was lower under external control than internal control (Ms = 3.45 and 3.92, respectively). Therefore Hypothesis 14a was supported.

Post hoc analysis. While the overall interaction between formal/informal control and external/internal control was not significant for constructive deviance, $\gamma_{03} = 0.15$, se

= 0.68, t = 0.23, p = .82, the means between conditions suggested that post hoc analysis was in order to examine the observed difference between the formal-external condition and the informal-internal condition. Table 18 displays the results of Tukey's HSD post hoc analysis, which revealed a significant difference in the expected direction. Individuals in the formal-external condition engaged in significantly less constructive deviance (M = 3.25) than did individuals in the informal-internal condition (M = 4.10). Table 18

Condition (A)	Condition (B)	Mean Difference (A-B)	<u>SE</u>
Formal/External (M=3.25)	Formal/Internal (M=3.74)	-0.49	0.27
	Informal/External (<i>M</i> =3.65)	-0.40	0.28
	Informal/Internal (M=4.10)	-0.85**	0.27

Post-Hoc Tukey HSD Test for Interaction Term (N=225)

Note. ****** p < .01.

While results for the overall destructive deviance construct did not support the hypotheses, further exploration of destructive deviance suggests that the negative behavior may be further split into two categories, that being deviance that is subtle versus obvious. Subtle forms of deviance included the number of times a participant was off task (daydreaming, playing computer games) and the number of non-work related websites visited. More obvious forms of deviance included the number of minutes when breaks lasted longer than 5 minutes, the number of minutes a participant arrived late, and the number of times a participant chatted with another participant. Individuals in the

external control condition may have felt that while they knew the organization was monitoring their behavior, deviance of a subtle nature would be less noticeable than would overtly long breaks, chatting with another participant, or arriving late. Results of HLM analysis revealed a marginally significant effect for external/internal control on subtle destructive deviance, $\gamma_{02} = -0.38$, se = 0.20, t = -1.92, p = .06, such that individuals in the external condition engaged in more subtle destructive deviance (M = 1.07) than did individuals in the internal condition (M = 0.68). There was no effect for formal/informal control on subtle deviance, but it appears that the presence of an external monitoring agent was not enough to suppress this subtle form of negative behavior. When examining between group differences on obvious forms of destructive deviance, there were no effects for any type of control on this form of destructive deviance.

Another set of post hoc analyses was conducted to explain the role of individual differences in moderating the relationship between control and deviance. Because there was no support for the role of process reactions mediating the control-deviance pathway, it was possible that conscientiousness and proactive personality moderated the control-deviance relationship supported in Hypothesis 14a such that when conscientiousness and proactive personality were low, the relationship would be stronger. HLM analyses were conducted to examine these relationships but no support was found. Interestingly, results revealed that conscientiousness played a marginal moderating role in the relationship between external/internal control and destructive deviance, $\gamma_{10} = -1.33$, se = 0.80, t = -1.66, p = .10. A graph of the interaction is displayed in Figure 6. Results show that the limitations of low conscientiousness are enhanced in internal control environments, perhaps where a lack of careful attention on the part of individual employees leads to a

greater frequency of destructive behavior. In external environments where the presence of an outside monitoring agent is made salient, the likelihood of destructive behavior was lessened.

Figure 6

Interaction Between External/Internal Control and Conscientiousness on Destructive Deviance



Summary. While it was not possible to show support for the mediation hypotheses, support was found for the relationship between internal control and constructive deviance. There was also support for the post hoc comparison between the two dimensions of control on constructive deviance such that individuals in the informalinternal control condition were more likely to engage in constructive deviance than individuals in the formal-external condition. Although the hypotheses linking control to destructive deviance were not supported, the results suggest that there are forms of control which do enhance constructive behavior. Further post hoc analyses also revealed subtle forms of destructive deviance are more commonly observed in participants in the external control condition. The benefits of external control were also observed for low conscientiousness individuals such that destructive deviance was lessened under external control than under internal control.

DISCUSSION

As counterproductive behavior continues to be an issue for many organizations, a normative approach to understanding deviance was used to explore the nature of both positive and negative behavior as well as the interplay between constructive and destructive deviance. The creative use of field experiment methodology in the current study allowed for an interesting look at behavioral criteria of deviance, as opposed to typical self-report methods used in deviance research. As such, this research was conducted with careful consideration of the cause, effect, mediating processes, and moderating influences that ultimately affect deviance behavior.

Deviance Behavior

A key contribution of this research comes from the field experiment methodology used to gather behavioral observations of deviance behavior. Only a small handful of field experiments conducted in an organizational context are published each year, perhaps because of the many challenges they present. Field experiments also present many opportunities associated with the advantages of laboratory experiments, including greater control over the situation to better isolate the causal relationships between variables. The "field" in field experiment also helps maintain external validity and generalizability.

The measure of deviance was created through several steps, all of which were designed to legitimate and validate the individual behaviors combined into the deviance

composites. Intercorrelations between behaviors served as one judgment point while the expectations set forth to establish norms in the session served as another. To combine individual behaviors, each behavior was standardized and summed into its respective deviance composite (destructive or constructive). Employees' self-reported withholding effort served as another tool to validate the interconnectedness between destructive, constructive, and effort behaviors. With few exceptions, most research on deviance has used self-report, retrospective accounts of counterproductive behavior. The use of observational data takes a step away from the biases inherent in self-report questionnaires of behavior and moves forward in capturing deviance in context.

Control-Process Reactions

Previous research on control and justice reactions has found that employees tend to respond more positively when they are allowed to give their input and feel that the control will not impede their ability to be successful in the organization (Alge, 2001; Douthitt & Aiello, 2001). Furthermore, when control was more structured and unbiased, employees have responded with a greater sense of justice as well (Niehoff & Moorman, 1993). Control systems also communicate a sense of trust (or distrust) to employees as employees read-in to the control and gain a sense of the organization's motives and openness (Gabarro & Athos, 1976). To explore three dimensions of justice (distributive, procedural, and interpersonal), a series of hypotheses was offered that predicted that control systems with an internal locus of responsibility would result in more positive procedural and interpersonal justice reactions as well as more positive trust reactions. Formal control systems were expected to result in more positive distributive justice reactions.

The results did not support any of the hypotheses linking types of control to either justice or trust reactions. This was possible for several reasons. Alge's (2001) research on reactions to monitoring found that concerns about invasion of privacy was a key driver of procedural justice reactions. In this context, a single exposure to more obtrusive forms of control may not have stirred a strong sense that there was an invasion of privacy, especially given that the task being performed was a computer-based task and monitoring of computer activity was not beyond the boundaries of what would be reasonable in this environment.

Research by Tabak and Smith (2005) suggests that an employee's disposition to trust, in combination with their experience at the current organization and prior experience at other organizations, will affect an employees' decision about managerial trustworthiness and subsequent trust formation. With only a single experience with Dynamic Research Group, the foundation for trust formation was in its formative stages and could also have contributed to a lack of variability on trust reactions. In ongoing employment experiences, the link between control and trust (or justice) is an iterative cycle such that employee experience informs how they evaluate their organization and at the same time supervisor or organization experience informs how employees are evaluated and further trusted or distrusted. Therefore, while a lack of support for the hypotheses signaled some doubt that control was appropriately linked to justice and trust reactions, a more comprehensive look at the temporal dynamics associated with the formation of trust and justice would provide a better setting to understand these relationships.

Process Reactions-Deviance

Research linking justice and trust reactions to both constructive and destructive deviance has typically found that more positive trust justice reactions lead to increased constructive behavior (de Cremer et al., 2001; Little et al., 2002) and more negative justice and trust reactions lead to increased destructive behavior (Fox et al., 2001; Hultman, 2004). The second set of hypotheses reflected the likelihood of these relationships in the current setting but there was limited support linking process reactions to deviance behavior.

Results showed that greater interpersonal justice and trust led to lessened destructive deviance, which is a hopeful message for employers looking for ways to dampen destructive behavior. To take advantage of this relationship in an employment setting, organizations may wish to implement strategies to enhance interpersonal justice and/or trust. For example, for organizations wishing to enhance trust, research has shown that trust can be further developed when there is equal power between parties in an employment relationship and where employees feel as though they have full knowledge of their supervisor's intentions in an evaluation setting (Enzle & Anderson, 1993).

Contrary to expectations, no effects were observed for any of the justice or trust reactions on constructive deviance. One likely explanation stems from the limited variability of these reactions, which decreases the likelihood that reactions would further predict differences in behavior. An examination of the mean levels of distributive, procedural, and interpersonal justice and trust demonstrated that on a five point scale, all means are above the mid-point of the scale and in all cases, a large percentage of individuals scored at 4.0 (agree) or higher [procedural justice > 4.0 = 25%, distributive

justice > 4.0 = 40%, interpersonal justice > 4.0 = 75%, trust > 4.0 = 50%], which further limited the variation in measures. The demand characteristics in the current study were unlike characteristics in other psychological studies of deviance (e.g., J. Greenberg, 2002) where individuals are provoked to react negatively, which may further explain the lack of variance and effects for process reactions on deviance behavior observed in the current research.

Moderating Role of Conscientiousness and Proactive Personality

The research linking conscientiousness and proactive personality to deviance has found support for the relationship between high conscientiousness, decreased destructive deviance (Ones & Viswesvaran, 2001), and organizational citizenship (Van Dyne et al., 1994) and between high proactive personality and increased constructive behavior (Bell & Staw, 1989). Therefore, to understand the effect of conscientiousness and proactive personality on deviance behavior, several hypotheses were generated to suggest that conscientiousness would moderate the relationship between process reactions and destructive deviance and constructive deviance and that proactive personality would moderate the relationship between process reactions and constructive deviance.

Support was found for Hypothesis 9a; conscientiousness did moderate the relationship between trust and destructive deviance such that when conscientiousness was low, a trusting environment helped to lessen destructive behavior. This is particularly interesting for managers who are faced with pressure to do more with less and perhaps do not have many resources or time to devote to constant monitoring of employees. If establishing a trust-based relationship with employees (who might otherwise be inclined

to engage in off-task behavior) helps to decrease destructive deviance, there are many low-cost, practical avenues for the manager to pursue in developing that trust.

While support was not found for Hypothesis 9d, procedural justice did interact with conscientiousness in an unexpected direction. Procedural justice is defined by actions that are consistent and ethical (Thibaut & Walker, 1975). When procedural justice was lower, highly conscientious individuals may have still felt that the situation was flexible and would allow them to go beyond the rules and expectations of the work and engage in constructive behavior. Highly conscientious individuals often have a internal locus of control (Judge, Erez, Bono, & Thoresen, 2003), meaning they believe that rewards and outcomes are driven by personal ability and effort (O'Brien, 1984). Because the benefits of helping or going above and beyond are often rewarding in itself, the extra effort to go above and beyond (even in situations where the procedures were seen as unfair) is not uncharacteristic of highly conscientious individuals.

For highly conscientious individuals who perceived high procedural justice, the results are less intuitive but are consistent with some research on consistency, procedural justice, and self-esteem. For example, Gilliland (1994) found that self-esteem was lowered for individuals who were treated consistently in a selection system but were rejected. Similarly, Schroth and Pradhan Shah (2000) suggest that knowing procedures were fair does not balance out the disappointment or negative affect associated with receiving an undesirable bad outcome. These two studies shed some light on the current findings that procedural fairness essentially had a negative effect on constructive deviance for highly conscientious individuals. For highly conscientious individuals who

environment were fair, applied consistently, and were free of bias may have meant that they were less apt to engage in constructive deviance because they knew that the set expectations were already fair – why go above and beyond in an environment that already seemed reasonable? To build on this preliminary explanation for why procedural justice had a negative effect on constructive behavior, future research should explore this relationship more carefully, especially in a sample with greater variability on conscientiousness.

Control-Deviance

The final set of hypotheses suggested that the different forms of control would affect employee deviance and that this relationship would be mediated by process reactions. Because the link between control and process reactions was not supported, the mediating pathways could not be tested, but some very interesting results from the control – deviance pathway were still explored. On the constructive deviance side, both informal and internal control systems were expected to promote constructive behavior as employees are not limited either by formal responsibilities (Roth et al., 1994) but they are given more latitude regarding their behavior (Crossen, 1993). For similar reasons, control of a formal and external nature was expected to have effects on destructive deviance as employees were more aware of precise expectations and would have an external agent monitoring their behavior.

While results did not support the relationship between control and destructive deviance, support was found for the hypothesized relationship between internal control and constructive deviance. This suggests that while control in this environment may have been unable to suppress destructive behavior, there were forms of control which

simultaneously affected constructive behavior. Individuals in the external condition were less likely to engage in constructive deviance than individuals in the internal control condition. (This same pattern of means was observed in the formal and informal conditions, Ms = 3.03 and 3.34, respectively.) Post hoc analysis of the interaction between control dimensions revealed that individuals in the formal-external condition were significantly less likely to engage in constructive behavior than individuals in the informal-internal condition.

A premise of this research was that prior work in this area has failed to consider the simultaneous occurrence of destructive and constructive behavior and the results of this research support that there are some forms of control which are detrimental towards positive behavior. Research has supported the many benefits of counter normative, constructive behavior including a desire to reciprocate help for help (El-Alayli & Messe, 2004) and the development of a "good neighbor" mentality (Heckert & Heckert, 2004). Depending on the perspective of who is evaluating the benefits of constructive behavior, there are some examples of counter normative behavior such as rate busting which have not been viewed as favorably, especially by labor unions and employees who are satisfied with maintaining the status quo (Heckert & Heckert, 2004). In any organization wishing to enhance constructive deviance, it remains important for employees to feel as though they can engage in this behavior without fear of punishment for not following the rules or ostracism from their work group for bucking the trend (e.g., Barker, 1993).

Additional analysis of destructive deviance showed that individuals in the external control condition were somewhat more likely to engage in subtle destructive deviance than were individuals in the internal control condition, despite the presence of an external

monitoring agent. Despite no overall findings suggesting that there are control systems which are more likely to limit destructive deviance, a closer look at the destructive deviance construct revealed that there are several ways employees can be deviant, not all of which may be as salient or as destructive as the other. Further follow up analysis revealed that while the mediating path between control and deviance could not be tested, there were moderating effects for the individual difference of conscientiousness on the relationship between external/internal control and destructive deviance. In an internal environment, low conscientiousness individuals were more likely to engage in negative behavior. This detrimental outcome does not bode well when employees who are low in conscientiousness and not careful to begin with are placed in an environment where they are responsible to self-monitor, as more negative behavior is likely to slip through the cracks.

The process of studying both destructive and constructive deviance comes at a time when both entitlement perceptions and the push for innovation are seemingly at odds with one another. When performance expectations become more ambiguous and employees are encouraged to do less with more, the boundaries between ethics, performance, and deviance are inevitably blurred (Litzky, Eddleston, & Kidder, 2006). As such, employees may be more willing to go above and beyond, but at negative long term costs to the organization and its customers. The one time nature of the work experience studied here did not allow for a longitudinal look at deviance, but as performance expectations and the psychological contract are re-negotiated and re-interpreted over time, the dilemma between constructive and destructive deviance is bound to grow. Here, the first glance at the overall relationship linking control to

deviance suggests that control has the potential to impact both positive and negative behavior and that further examination of this relationship is warranted in future research studies.

Limitations and Future Directions

Despite the noteworthy findings linking control to constructive deviance and the careful consideration given to the theory and methods used to examine deviance, a majority of this study's hypotheses were not supported. I took away from this experience an appreciation for how the context truly matters in understanding deviance (and related processes). A post hoc review of the context reveals several key factors that will help further explain the results of the study and offer directions for future research, namely: the ability to effectively implement control, defining and assessing norms of deviance, the effect of time, and the impact of rewards and other organizational factors that influence employee behavior.

Implementing control. In designing the framework of control, there were challenges associated with a creating a clear and distinct boundary between cells that also allowed for a realistic manipulation of the control system. For example, when distinguishing formal from informal control, simply relying on one type to be defined by written instructions and the other to be defined by unwritten instructions was limited in scope. Given that all participants were provided with written instructions to outline the job task, the strength of the formal/informal control manipulation was inadvertently weakened. Manipulating the other dimension of control was more clear cut in that the boundaries separating the organization (external monitor) from oneself (internal monitor) are distinct. Rather than treating the cells as distinct from one another, one possible

direction is to treat these control systems on a continuum where control varies in its strength on these key dimensions. Another avenue for future research would also not abandon these dimensions but but rather work to better elucidate the distinctions between formal and informal control and take advantage of the role of the administrator/supervisor in implementing the control. For example, in the current research the administrator was dressed professionally at all times to give credence to the work experience. In the informal control condition, if the control is truly more casual in nature, the administrator could more thoroughly "act the part" and dress down or use less formal speech when delivering task instructions.

Defining and assessing norms. Gaining a more thorough understanding of the normative nature of deviance was one of the main drivers of this research effort. In a nutshell, destructive deviance was conceptualized as behavior which violated norms and did harm while constructive deviance was conceptualized as behavior which violated norms but was beneficial. In real organizations, history and context also provide insight into normative behavior. Without any history or context, the norms operating in this environment were established from the expectations laid out for employees at the beginning of each work session. These norms were essentially established at the organizational level via the control system rather than at the group level, which for defining deviance, would be the appropriate level to consider. However, because norms can operate at many levels, it was a choice to consider norms at the organizational level as the benchmark for judging deviance given the current context paired with the lack of opportunity for norms to truly develop within each individual work session.

With these expectations came norms for behavior, but anecdotal observations suggest that there may have been slight group effects which further affected the norms for that session. That is why it was important to properly account for group membership in all data analysis by using hierarchical linear modeling. For example, if no one got up from their work station within a minute of the break being announced, it seemed to be much less likely that the entire group would take a break than if several people got up, made a little noise, and took a few minutes away from work. This has implications in terms of understanding the stability and content of norms. The point of view of the source also impacts norms. Norms in this environment were assessed from the perspective of the organization, rather than from the employees. Noise in the channel between the delivery of expectations, establishing a norm, and execution of behavior definitely creates a more complicated picture.

Further complication arises from understanding whether "counternormative" behavior is truly deserving of the destructive or constructive label or if the labels and definitions of norm-based deviance are too strict. This research raises the question of whether violating a norm to do extra work is actually constructive deviance or is it more similar to OCB? Is the behavior so unexpected and beyond extra role expectations that it fits the definition of deviant? Upon observing the behavior of these one-time employees, the waters have become murky in distinguishing constructive deviance from organizational citizenship. The helpful, beneficial behaviors observed of employees may be more a reflection of natural behavior you would expect out of highly conscientious, proactive individuals (which is characteristic in this sample). Future research should

work to more clearly distinguish citizenship behavior from constructive deviance while taking into consideration the content and stability of norms operating in the environment.

Effect of time. As evidenced by a lack of support for Hypotheses 1-4, the impact of control on justice and trust reactions was lacking. Previous research on justice has shown that the effects of company procedures on justice reactions tend to unfold over time (Mesch & Dalton, 1992). In the current context, a one-time exposure to a particular method of control did not result in immediate reactions of unfairness or distrust. In the short term, more explicit forms of control might even be expected as new employees learn the job and require more guidance. As the control seems to be more intrusive and less desirable over time, it can serve as a stressor which may result not only in reactions of injustice but also other psychological symptoms leading to greater problems in the organization (Snow, Swan, Raghavan, Connell, & Klein, 2003). Therefore, future research in this area should understand how the repeated exposure to control as part of an employee's daily routine may more slowly provoke frustration and erode feelings of trust and justice, rather than attempting to capture injustice in a single snapshot of the work experience.

Rewards and organizational factors. In real organizations, employees have a past, present, and future, all of which contribute to their behavior. An employee's history in the organization is likely to have a large influence on the likelihood that they will or will not engage in deviance. For example, Greenberg and Barling (1999) found that an employee's past history of aggression in the organization served as a strong predictor of future aggression against other employees. An employee who is trying to impression manage and who has recently been praised for going above and beyond is probably more

likely to do so again in the future (Bolino, 1999). Similarly, an employee who gets away with coming to work late is likely to continue that behavior as well. While the current study has made inroads into understanding the relationship between control and deviance (with interesting results), future avenues in this area should consider the impact of an employee's history and tenure, along with his or her relationships with peers and supervisors, all of which will influence the likelihood and frequency of deviance behavior.

Rewards in the workplace also drive employee behavior. A reward in the form of a paycheck can enhance employee performance when pay is tied to performance outcomes. Pay which is not tied to performance not only has the potential to depress any constructive behavior but it may also encourage, to a slight degree, destructive behavior (Litzky et al., 2006). Because there were no between-group differences for control on destructive deviance, one explanation is that knowing the \$30 would be rewarded at the end of the session, regardless of on-task or off-task performance, could have promoted negative behavior in the form of general laziness or off task behavior. The type and frequency of organizational rewards, whether pay or praise, can serve as a subtle form of control in and of itself. As a way to manage deviance, future research should investigate these factors which may inadvertently encourage (or discourage) deviance behavior. *Conclusions*

This field experiment exploring the relationship between organizational control and organizationally directed deviance was a first glance into a behavior-based examination of destructive and constructive behavior. With the advantages of field experiment methodology, there were still many challenges in conceptualizing and

operationalizing destructive and constructive deviance as the nature of this type of behavior depended on the strength of norms in the work environment as well as employee reactions regarding fairness and trust. Building on the results of the current study, organizations seeking to enhance constructive behavior may wish to experiment with external and internal forms of control while future research in this area should seek to examine control in real world settings and its short- and long-term effects on employee behavior.

APPENDIX A


APPENDIX B

DYNAMIC RESERRCH GROUP

Employment Application

Please enter all of your responses directly on this electronic application. You will be asked to send this application as an email attachment as part of your pre-employment test. After receipt of your application, you will be contacted by Dynamic Research Group and notified of your status. Thank you for your interest in this position!

Sersonal Information	
Name	
Street Address	
City, State Zip	
Phone Number	
Email	
Availability for Work	
	(can specify mornings, afternoons, nights, days of week, weekends)

	an a	
High School	Year Graduated:	School:
College	Major:	Institution:
	Year in School/Year of Graduati	on:

Previous Work Experien	ce: Please list your 3 most recent employers
Employer	
Dates of Employment	
Job Title	
Street Address	
City, State Zip	
Phone Number	
Employer	
Dates of Employment	
Job Title	
Street Address	
City, State Zip	
Phone Number	
Employer	
Dates of Employment	
Job Title	
Street Address	
City, State Zip	
Phone Number	

Applicant Background Questionnaire and Pre-Employment Test

A. Employee Behavior

The following questions are a series of phrases describing people's behaviors. Use the 5 point rating scale where:

1=Very	2=Somewhat	3=Neither	4=Somewhat	5=Very Accurate
Inaccurate	Inaccurate	Accurate nor	Accurate	
		maocurate	and the second	and the second se

We would like for you to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully. Enter your response to the left of each question.

1. Am the life of the party.
Feel little concern for others.
3. Am always prepared.
Get stressed out easily.
5. Have a rich vocabulary.
6. Don't talk a lot.
Am interested in people.
8. Leave my belongings around.
9. Am relaxed most of the time.
10. Have difficulty understanding abstract ideas.
11. Feel comfortable around people.
12. Insult people.
13. Pay attention to details.
14. Worry about things.
15. Have a vivid imagination.
16. Keep in the background.
Sympathize with others' feelings.
18. Make a mess of things.
19. Seldom feel blue.
20. Am not interested in abstract ideas.
21. Start conversations.
22. Am not interested in other people's problems.
23. Get chores done right away.
24. Am easily disturbed.
25. Have excellent ideas.
26. Have little to say.
27. Have a soft heart.
 Often forget to put things back in their proper place.
29. Get upset easily.
30. Do not have a good imagination.
 Talk to a lot of different people at parties.
Am not really interested in others.

3	33. Like order.
3	34. Change my mood a lot.
3	35. Am quick to understand things.
3	36. Don't like to draw attention to myself.
3	37. Take time out for others.
3	38. Shirk my duties.
3	39. Have frequent mood swings.
4	40. Use difficult words.
4	Don't mind being the center of attention.
4	42. Feel others' emotions.
4	43. Follow a schedule.
4	44. Get irritated easily.
4	 Spend time reflecting on things.
4	46. Am quiet around strangers.
4	47. Make people feel at ease.
4	Am exacting in my work.
4	49. Often feel blue.
5	50. Am full of ideas.

B. Approach to Problem Solving

The following questions ask about your approach to problem solving. Your answers will be kept confidential. Please answer each of the following items honestly using a 1-5 scale, where:

1=Stro Disag	ngly ree	2= Disagree	3=Neither Agree nor Disagree	4=Agree	5=Strongly Agree
	1. I am constantly on the lookout for new ways to improve my life.				
	2.	I feel driven to make a di	fference in my commur	nity, and maybe the	world.
	3.	I tend to let others take th	ne initiative to start new	projects.	
	4.	Wherever I have been, I	have been a powerful f	force for constructiv	ve change.
	5.	I enjoy facing and overco	ming obstacles to my i	deas.	
	6.	Nothing is more exciting	than seeing my ideas t	urn into reality.	
	7.	If I see something I don't	like, I fix it.		
	8.	No matter what the odds,	, if I believe in somethin	ng I will make it hap	open.
	9.	I love being a champion for my ideas, even against others' opposition.		ion.	
	10.	10. I excel at identifying opportunities.			
	I am always looking for better ways to do things.				
	12. If I believe in an idea, no obstacle will prevent me from making it happen.		appen.		
	13.	I love to challenge the sta	atus quo.		
	14.	When I have a problem, I	tackle it head-on.		
	15.	I am great at turning prob	elems into opportunities	s.	
	16.	I can spot a good opportu	unity long before others	s can.	
	If I see someone in trouble, I help out in any way I can.				

C. Knowledge of Investments

The following questions ask about your knowledge of investments and investment terminology. Please answer each question without the assistance of the internet or any other information source. Please enter your responses in the cells to the left of each question.

	Question 1: To be a safe investor, where should you put your money?
	1. A bank account and/or treasury bills
	2. Conservative bonds
	3. Blue chip stocks and conservative mutual funds
	4. Quality growth stocks
	5. All of the above
	Question 2: Which of these investments has the lowest risk?
	1. Money market funds
	2. Quality growth stocks
	3. High tech mutual funds
	4. High yield bonds
	5. Balanced mutual funds
	Question 3: Which of these investments will help your money grow with moderate risk?
	1. Large-cap stocks
	2. Blue chip stocks
	3. Balanced mutual funds
	4. Quality growth stocks
	5. All of the above
	Question 4: When making investment decisions, the most important thing is:
	1. Timing the market
	2. Buying and selling regularly
	3. Asset allocation
	4. Sticking to one strategy
	5. None of the above
	Question 5: Securities laws help protect investors by requiring companies to:
	1. Show profits before they can sell stocks
	Give investors important information about the company's financial position
	3. Pay dividends
	4. Repay investors who have lost money
	Question 6: If you had extra money, what would be the best investment choice?
	1. Invest in the stock market
	2. Invest in mutual funds
	3. Invest in bonds
1.000	4. Place it in a savings account
	Question 7: Stacey will retire in 40 years and wants to start saving for her retirement now.
	Stacey has a number of investment choices. Which of the following would be a good choice
	for Stacey to meet her long-term goal?
	1. A savings account at the bank
	2. A Guaranteed Investment Certificate (GIC)
	A mutual fund that invests in a range of stocks
	4. The stock of one company

statement: "There are some things about investing that you just learn by trial and error." 1. Agree 2. Agree Slightly 3. No Opinion 4. Disagree Slightly 5. Disagree
"There are some things about investing that you just learn by trial and error." 1. Agree 2. Agree Slightly 3. No Opinion 4. Disagree Slightly 5. Disagree Sightly
1. Agree 2. Agree Slightly 3. No Opinion 4. Disagree Slightly
2. Agree Slightly 3. No Opinion 4. Disagree Slightly
3. No Opinion 4. Disagree Slightly 5. Disagree
4. Disagree Slightly
E Disearco
5. Disaglee
Question 9: What is the calculation of the approximate sales volume required to just cover
costs, below which production would be unprofitable and above which it would be profitable
1. Break-even analysis
2. Stock actions
3. Debt service coverage
4. Market analysis
Question 10: What is the tax rate paid on the last dollar of one's income?
1. Capped tax rate
2. Marginal tax rate
3. Investment tax rate
4. Wealthy tax rate
Question 11: What is the rule of thumb that 20% of a population earns 80% of its income
reterred to as?
1. Domino's Law
2. Law of Returns
3. Pareto's Law
4. Market Value
Question 12: What is the term for a financial obligation, debt, claim, or potential loss?
1. Asset
2. Equity
3. Ratio
4. Liability
Question 13: Which of the following is not a commodity that can be traded?
1. Food products
2. Petroleum
5. Bonds
4. Intellectual property
1 Exceptional a wiz
2. Bottor than most
3. Okay but not great
4. Not year good
5. I spend more and save less than I could
6 Never seem to have enough cash
Question 15: Have you ever invested in any of the following?
1 Stocks
2 Bonds
3 Mutual Funds
4 Certificates of Deposits (CDs) or Guaranteed Investment Certificates (GICs)
5. None of the above

D. Internet Skills

Please answer the following questions which test your Internet and computer skills. You should use the Internet to help you answer the questions below. Please type your responses in the blank cells to the left of the questions.

Se an Einglight	 Search for the term sleep disorder using the Google search engine. List the first 5 web pages that come up from your search, NOT including the sponsored links.
	2. How many miles are needed for a standard award roundtrip First Class Ticket on Northwest Airlines traveling from New York City to San Francisco?
	3. I want to order a pizza from Bocce Club Pizzeria near Buffalo, NY. What are the addresses and phone numbers of their two Buffalo-area locations?
	4. As construction on I-96 continues, travelers face many detours and lane changes. Go to the Michigan Department of Transportation website. What does MOOT plan to do for westbound traffic traveling on I-96 at the 36 th Street interchange in Kent County when construction begins there in 2006?
5. Save this applic this application as	ation to your computer. Use your last name as the file name (e.g., Smith.doc). Send an attachment to info@dynamicresearchgroup.com.

Submitting this application via email to Dynamic Research Group will serve as your electronic signature. I attest that I am 18 years of age or older, all information included in this application is accurate, and all responses are trutifylu as of the date of this application.

APPENDIX C

DYNAMIC RESERRCH GROUP

Terms of Employment and Employee Expectations

As an employee of Dynamic Research Group (DRG), this document explains the terms of your employment and some of our organization's expectations.

Terms of Employment

You will be hired as a short term employee of DRG as part of our Internet Consulting Project. You will be an employee of DRG for one 3-hour time period in the coming weeks. During this time, you will be asked to work independently on an internet research project, write a report about your findings, and answer several surveys about your experiences. You will not be expected to do anything beyond what is outlined for you here.

The company who has hired DRG for this project is interested in the quality of your work product, your reactions to the work, and how you feel about your experience. Employees are expected to arrive to their work sessions on time and remain at the session for the entire 3-hour period. We are interested in your individual work projects so we discourage any conversation between employees during the session. At the conclusion of your work session, you will be paid \$30.

Employee Expectations

Formal-external

To ensure that employees meet our work standards, we will be monitoring your workplace behavior. Our code of conduct states that employees must be on task, work efficiently, and conduct themselves in a professional manner at all times. We will be monitoring your Internet activity, tracking the web pages you look at, and checking in with you throughout your work session. You will be provided with these expectations again in writing when you arrive at your work session.

Formal-internal

To ensure that employees meet our work standards, you will be responsible for keeping a work diary. This diary should be a list of all of your activities during your work session today. Our code of conduct states that employees must be on task, work efficiently, and conduct themselves in a professional manner at all times. You will be expected to commit to making a list of the web pages you visit and of all work-related behaviors that you do. You will be provided with these expectations again in writing when you arrive at your work session.

Informal-external

To ensure that employees meet our work standards, the administrator will be walking through the room to ensure that you are on task, working efficiently, and conducting yourself in a professional manner at all times. Ethical conduct is a defining characteristic of all DRG employees. Everyone is expected to conduct themselves appropriately and in the past, our employees have had a strong desire to comply with these principles.

Informal-internal

To ensure that employees meet our work standards, we trust that you will commit to our values of keeping on task, working efficiency, conducting yourself in a professional manner at all times. Ethical conduct is a defining characteristic of all DRG employees. Everyone is expected to conduct themselves appropriately and in the past, our employees have had a strong desire to comply with these principles.

APPENDIX D

DYNAMIC RESEARCH GROUP

Internet Research Project

Dynamic Research Group's client is a new organization whose founder is a graduate of Michigan State University. This entrepreneur is interested in pursuing some new ideas related to outsourcing. As you may know, companies have been increasingly focused on cutting costs and identifying new ways of getting work done. This can include outsourcing. Outsourcing involves contracting for cheaper labor than what it would cost the organization while still trying to preserve the quality of work done. Our client is interested in outsourcing a component of his work process – namely research – to less costly, skilled individuals instead of having full time employees on staff whose salary and benefits costs are much more expensive. Our client would like to know if college students and community members are capable of doing this work. Because the founder is a Michigan State graduate, we are beginning his work at MSU but will eventually expand our efforts to other colleges and communities.

Your Task

Today you will be doing some Internet research on the topic of "Advice for the New Investor." The list of websites below are the websites we would like you to visit to complete your research. Securities and Exchange Commission www.sec.gov The Motley Fool www.fool.com Merrill Lynch askmerrill.ml.com/investments/ Investment U www.investmentu.com/index.html The Investment FAO invest-fag.com/ **Important Note: When you are ready to begin, open Internet Explorer. Past employees have found they have had some difficulty using Netscape and Firefox on these computers. so please do all of your Internet work using Internet Explorer today.

The websites listed above are the only websites that you need to visit today. Feel free to make notes about your research as you are working on the paper provided. Please work individually on your research and refrain from discussing your work with others in the room today. If you do have any questions, please let the administrator know.

Outcomes

DRG's client is interested in the nature and content of the reports that are generated from this session. They will be reviewing the content and making an evaluation on whether or not individuals from your demographic are able to create quality reports in a 3-hour period versus having their own employees take company time to complete the same job. Therefore, we expect that you will create the highest quality report possible in the time permitted.

Report Expectations

This report will have three sections: opening statement, research evaluation, and closing statement. We would like you to begin your report by writing an opening statement or paragraph that summarizes what you will be discussing in the text. In the next section of your report, provide a short summary of the investment information that you gather from each of the websites. Next, compare and contrast the investment information that you gather from the websites listed above. Use this opportunity to critically evaluate the information. In your final paragraph, use your best judgment from your own experience and the information you have been evaluating to make a recommendation to the client as to which of the websites listed (if any) you would suggest as quality resources. You should focus your work efforts on the written portion of your report, but if you feel that a table or figure would add to the quality of your final document, please insert these graphics at the end of your document. This element is not required but could benefit our client.

The final element of your report will be to evaluate the prospects with investing in a particular company, based on your research and what you have learned. You can keep your analysis at a fairly high level and include your thoughts at the end of your written report. This section does not need to exceed 1 page.

Report Format

Your report should be near 4 pages in length. When you are ready to begin writing your report, create a Microsoft Word document. You should write this document as if it will be included in a report to be sent to top management. Use proper grammar, spelling, and language. Be sure to save this document as you are working. You have been assigned an employee number, which is posted on top of your computer work station. Save this document as YourEmployeeNumber.doc, so for example A1008.doc or C3389.doc on the floppy disk provided. You must write your report using your own words. DO NOT cut and paste information from the websites directly into your report. Because the expectation is that you will synthesize the information and make your own critical evaluations, we expect that you will not plagiarize any material. Please use Times New Roman 12-point font, double space, 1-1.25" normal margins. Enter your employee number on the first line of your document and then begin your report.

Additional Information

- You will be able to take two 5 minute breaks during the session today. The breaks will be announced by the session administrator. When it is time for your break, we would like for you to get up, stretch your legs, and leave the room.
- You will have until 15 minutes prior to the end of today's session to finish your report. The last 15 minutes of the session will be used to answer some surveys and distribute payment.

APPENDIX E

Manipulation Check

Do the following statements correspond to the type of organizational system used in your work session today? Respond using a 1-5 scale, with 1=strongly disagree and 5=strongly agree.

- 1. Dynamic Research Group monitored my workplace behavior, Internet activity, and tracked the web pages I looked at.
- 2. At the start of today's session, I was given a written, formal document explaining how I was expected to keep on task, work efficiently, and conduct myself in a professional manner at all times.
- 3. Dynamic Research Group told me that they trusted I would commit to their values and comply with their principles.
- 4. I was asked to keep a work diary, including a list of the web pages I visited and all the work-related behaviors I did.
- 5. The administrator at the front of the room walked through the room to ensure that I was on task, working efficiently, and conducting myself in a professional manner at all times.
- 6. At the start of today's session, I was told in an unwritten, informal manner about the ethical conduct expected from all Dynamic Research Group employees.
- 7. I knew that I, and not my company Dynamic Research Group, was charged with monitoring my own behavior.
- 8. I knew that my company Dynamic Research Group was charged with monitoring my behavior.

Justice

(Modified from Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, 386-400.)

Please answer the following items using a 1-5 scale, with 1=strongly disagree and 5=strongly agree.

Procedural Justice

The following items refer to the procedures used in today's work session.

- 1. I have been able to express my views and feelings during today's procedures.
- 2. I have had influence over the procedures used in today's work session.
- 3. Today's procedures have been applied consistently.
- 4. Today's procedures have been free of bias.
- 5. Today's procedures have been based on accurate information.
- 6. I have been able to appeal the use of the procedures.
- 7. Today's procedures have upheld ethical and moral standards.

Distributive Justice

The following items refer to your work behavior today.

- 1. My pay reflects the effort I have put into my work.
- 2. My pay is appropriate for the work I have completed.
- 3. My pay reflects what I have contributed to the organization.
- 4. My pay is justified given my performance.

Interpersonal Justice

The following items refer to your reactions towards Dynamic Research Group.

- 1. Dynamic Research Group has treated me in a polite manner.
- 2. Dynamic Research Group has treated me with dignity.
- 3. Dynamic Research Group has treated me with respect.
- 4. Dynamic Research Group has refrained from improper remarks or comments.

Trust

(Modified from Robinson, S. L., & Rousseau, D. M. (1994). Violating the psychological contract: Not the exception but the norm. *Journal of Organizational Behavior*, 15, 245-259.)

The following questions relate to how much you believe your employer trusts you. Please answer using a 1-5 scale, with 1=strongly disagree and 5=strongly agree.

- 1. I am not sure Dynamic Research Group fully trusts me.
- 2. I am open and upfront with Dynamic Research Group.
- 3. Dynamic Research Group believes I have high integrity.
- 4. In general, Dynamic Research Group believes my motives and intentions are good.
- 5. I am not always honest and truthful.
- 6. I don't think Dynamic Research Group treats me fairly.
- 7. I can expect Dynamic Research Group to treat me in a consistent and predictable fashion.

Attitudes about the Internet

(Modified from Lavoie, J. A. A., & Pychyl, T. A. (2001). Cyberslacking and the procrastination superhighway: A web-based survey of online procrastination, attitudes, and emotion. *Social Science Computer Review*, 19, 431-444.)

Please answer the following questions about your attitudes towards the Internet. Use a 5 point rating scale from 1=strongly disagree to 5=strongly agree.

- 1. I feel the Internet makes me more productive.
- 2. I often use the Internet to relieve stress.
- 3. I think that the Internet is a useful tool for research.

- 4. People rely on the Internet for information more often than they should.
- 5. The Internet is a way for me to stay connected to the outside world.

Attitudes about Outsourcing

Please answer the following questions about your attitudes about outsourcing. Use a 5 point rating scale from 1=strongly disagree to 5=strongly agree.

- 1. Individuals who have outsourced jobs are not as competent as in-house employees.
- 2. Outsourcing takes away jobs from people who deserve them.
- 3. Outsourcing is an effective way for companies to save money and become more efficient.
- 4. I think that companies should only consider the bottom line when deciding to outsource jobs.
- 5. Only jobs which are not core to a company's business should be outsourced.

Withholding Effort

(Modified from Kidwell, R. E., & Robie, C. (2003). Withholding effort in organizations: Toward development and validation of a measure. *Journal of Business and Psychology*, 17(4), 537-561.)

- 1. I gave less than 100% effort on my work today.
- 2. I took longer breaks than I should have today.
- 3. I put in less effort in my work than I know I could today.
- 4. While at work today I was daydreaming.
- 5. While at work today I pretended to be busy.

Demographics

- 1. Age (in years)
- 2. Gender
 - a. Male
 - b. Female
- 3. Total Years of Work Experience (in years)

4. Background

- a. Asian/Pacific Islander
- b. Black/African American
- c. Hispanic
- d. Native American/American Indian
- e. White
- f. Other

Additional Interview Items used during Pilot Testing Phase

1. What did you think about today's experience? What are your reactions?

2. Did any part of today's session raise your suspicions about why you were here today?

3. Were you convinced that you were an employee of this consulting organization?

4. What could be done to increase the realism of this experience for future participants? Of the manipulations? Of the location? Of the task itself? Of the questionnaires following the work?

5. Did you feel free to do what you wanted to get the Internet research project done? Did you go outside the bounds of what was established for you?

6. How did you react to the type of organizational control that was used in this session? Did you take it seriously, respond naturally, disregard it, etc.?

7. Were there other behaviors that you did that we did not look at? Either positive or negative?

8. What were the norms that guided your behavior?

APPENDIX F

Dynamic Research Group Debriefing Form

In the wake of several corporate scandals such as Enron, Worldcom, and Adelphia, organizations are increasingly concerned with employees following proper standards of conduct. The work that you just participated in is part of a psychology research activity designed to understand how control systems designed to curb negative employee behavior may inadvertently result in fewer positive employee behaviors as well. Dynamic Research Group is a fictional company that was created for the purposes of this research. Control systems are any tool that the organization uses to bring out desirable behavior in their employees, whether a monitoring system, ethics program, or norms that encourage people to do the right thing. These systems are typically designed to limit negative behavior in the organization (e.g., employee theft or withholding effort), but an unintended consequence is that employees may react negatively and are no longer as willing to go above or beyond what is required of them. We are interested in your justice and trust reactions to the type of control that was being used and then will link your reactions to your behavior. We measured negative behavior by the length of your break and the webpages you visited that were outside the authorized list given to you by the session administrator. We will also look at your positive contributions by whether or not you went above and beyond in your written report or if you answered the additional questionnaires given to you at the end of the session. We hope that this research will benefit organizations that are looking to understand employees' behavior and maximize employees' positive contributions while minimizing negative behavior.

We wanted you to feel as though you were an employee of a real organization so that you could feel free to engage in actual work behavior. Had we used a true laboratory experiment, we felt it would have created a situation that was too artificial. We wanted to avoid a situation where you felt as if you were being watched as part of an experiment and then refrain from your natural behavior. Creating a situation where you felt as though you were an employee allows us to more accurately capture our variables of actual positive and negative behavior in a work setting.

If you have any questions about this research or the research process, please let the session administrator know. If any questions or concerns arise after you leave the session today, please contact Dr. Dan Ilgen, Department of Psychology, 340A Psychology Building, East Lansing, MI 48824, 517.353.4873, email: <u>ilgen@msu.edu</u> or Jaclyn Nowakowski, Department of Psychology, 346 Psychology Building, East Lansing, MI 48824, 517.355.2171, email: <u>nowako18@msu.edu</u>. You may also contact Michigan State University's Committee on Research Involving Human Subjects (anonymously if you wish) at 202 Olds Hall, East Lansing, MI 48824, 517.355.2180, email: <u>ucrihs@msu.edu</u>. This project has received their approval.

We assure you that none of the data that we have gathered here can be tied to your identity. All of your responses will be given a number that we will use for our research purposes. While we do have your name on file, we will never associate your name with your data after the process of data collection has been completed. Your responses will remain confidential and we would like to use your data for our research. You may decline without any penalty. Even though the company titled Dynamic Research Group is a fictional company that was created for the purpose of this project, all participants will receive the \$30 as advertised for your time and work effort.

Please mark the box and indicate your permission to allow the researchers to use your data for research purposes only. <u>Everyone is asked to keep the details of this activity confidential due to the sensitive nature of the information.</u>

The researchers MAY use my data for research purposes.

The researchers MAY NOT use my data for research purposes.

Employee:		
Printed Name		
Signed Name		
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Administrator:		

Printed Name Signed Name

Jaclyn Nowakowski

Date

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Intercorrelations of Standardized Deviance Behaviors

Variable	1	2	3	4	5	9	7	8
1. Length of break 1 (minutes)	1							
2. Length of break 2 (minutes)	0.21**							
3. Length of extra break (minutes)	-0.18**	-0.10						
4. Chat between employees (frequency)	0.12	0.13*	0.01					
5. Any off task (frequency)	0.08	0.24**	0.04	0.06				
6. Late arrival to session (minutes)	-0.10	-0.14*	0.02	-0.05	-0.07			
7. Visit extra financial websites $(0 = no 1 = yes)$	-0.01	0.00	0.07	-0.03	-0.02	-0.13*		
8. Number extra financial websites visited	0.07	-0.01	0.12	0.10	-0.01	-0.08	0.45**	
9. Number extra financial pages viewed	0.15*	0.02	0.01	-0.01	-0.03	-0.02	0.27**	0.56**
10. Visit non-work websites $(0 = no 1 = yes)$	0.03	-0.02	0.05	-0.05	-0.02	0.06	0.22**	0.22**
11. Number non-work related websites visited	0.04	0.12	0.18**	0.06	0.22**	-0.07	0.17**	0.28**
12. Number non-work related pages viewed	0.08	0.19**	0.09	0.02	0.26**	-0.05	0.06	0.09
13. Report page length	-0.15*	-0.07	-0.01	0.06	-0.04	0.00	0.06	-0.06
14. Report extras (frequency)	-0.07	-0.04	-0.05	0.06	0.09	-0.02	0.07	0.05
15. % complete extra teamwork questionnaire	-0.04	-0.11	0.07	-0.04	-0.06	0.03	-0.09	0.05
16. % complete extra financial questionnaire	-0.12	-0.11	0.11	0.00	-0.08	-0.02	-0.02	0.06
<i>Note.</i> $N = 225$. For all items, Mean = 0, Standard d	eviation =	1. * p < .0	15; ** p <	.01.				

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Appendix

Behaviors
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Intercorrelations of Standardized Deviance Beha	viors						
Variable	6	10	11	12	13	14	15
10. Visit non-work websites	0.16*						
11. Number non-work related websites visited	0.15*	0.26**					
12. Number non-work related pages viewed	0.04	0.17**	0.75**				
13. Report page length	-0.05	-0.11	-0.02	0.04			
14. Report extras	0.01	0.06	-0.03	0.01	0.19**		
15. % complete extra teamwork questionnaire	-0.01	-0.02	-0.03	-0.01	0.20**	0.04	
16. % complete extra financial questionnaire	-0.03	-0.01	-0.03	-0.04	0.15*	0.07	0.56**

APPENDIX H

List of Hypotheses and Analyses

Hypothesis	Analysis	Supported?
H1: Control systems with an internal locus of responsibility will result in more positive procedural justice reactions compared to systems with an external locus of responsibility.	HLM	No
H2: Formal control systems will result in more positive distributive justice reactions compared to informal control systems.	HLM	No
H3: External control systems will result in less positive interpersonal justice reactions compared to internal control systems.	HLM	No
H4: Control systems with an internal locus of responsibility will result in more positive trust reactions compared to systems with an external locus of responsibility.	HLM	No
H5: The more positive the justice reactions, the greater the frequency of constructive deviance.	Multiple regression	No
H6: The more negative the justice reactions, the greater the frequency of destructive deviance.	Multiple regression	Partial
H7: The more positive the trust reactions, the greater the frequency of constructive deviance.	Regression	No
H8: The more positive the trust reactions, the lower the frequency of destructive deviance.	Regression	Yes

Appendix H (cont'd.)

List of Hypotheses and Analyses

Hypothesis	Analysis	Supported?
H9a: Conscientiousness will moderate the relationship between employee trust reactions and destructive deviance, such that when conscientiousness is low, the relationship will be stronger.	Moderated hierarchical regression	9a – Yes 9b – No 9c – No 9d – No
H9b: Conscientiousness will moderate the relationship between employee justice reactions and destructive deviance, such that when conscientiousness is low, the relationship will be stronger.		
H9c: Conscientiousness will moderate the relationship between employee trust reactions and constructive deviance, such that when conscientiousness is low, the relationship will be stronger.		
H9d: Conscientiousness will moderate the relationship between employee justice reactions and constructive deviance, such that when conscientiousness is low, the relationship will be stronger.		
H10a: Proactive personality will moderate the relationship between employee trust reactions and constructive deviance, such that when proactivity is high, the relationship will be weaker.	Moderated hierarchical regression	10a – No 10b – No
H10b: Proactive personality will moderate the relationship between employee justice reactions and constructive deviance, such that when proactivity is high, the relationship will be weaker.		

Appendix H (cont'd.)

List of Hypotheses and Analyses

Hypothesis	Analysis	Supported?
H11a: Formal control systems are more likely to limit destructive deviance than informal control system, and	HLM	11a – No 11b – No
H11b: The relationship between the formality of the control system and the frequency of destructive deviance will be mediated by justice reactions.		
H12a: Formal control systems will be more likely to restrict constructive deviance as compared to informal control systems, and	HLM	12a – No 12b – No
H12b: The relationship between the formality of control and the frequency of constructive deviance will be mediated by justice reactions.		
H13a: External control systems will be more likely to restrict destructive deviance as compared to internal control systems, and	HLM	13a – No 13b – No 13c – No
The relationship between locus of responsibility and the frequency of destructive deviance will be mediated by (H13b) justice and (H13c) trust reactions.		
H14a: External control systems will be more likely to restrict constructive deviance as compared to internal control systems, and	HLM	14a – Yes 14b – No 14c – No
The relationship between locus of responsibility and the frequency of constructive deviance will be mediated by (H14b) justice and (H14c) trust reactions.		

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