

# Ethical Misfit or the Demand for Leniency? The Impact of Behavioral Attributes on Employee Tenure

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## ABSTRACT

In this paper we argue that while ethical misfit between firms and employees may increase the likelihood of attrition, the interaction between organizational and employee ethics may be much more complex. Customer demand for individual and organizational characteristics may impact employee tenure independent of one another. Furthermore, misfit may also create complementarities that benefit both the employer and employee. We use over six million vehicle emissions tests to empirically demonstrate that separating these effects is critical to understanding the role of misfit. We identify pre-hiring levels of fraudulent testing leniency for individual inspectors and facilities, showing that neither ethical fit nor complementarity of misfit has substantial impact on the longevity of tenure. Instead, we find that both inspector and facility leniency lead to longer tenure, with little evidence of interaction between employer and employee ethics.

*Keywords:* Unethical Behavior; Ethics; Deviance; Person-Organization Fit; Person-Environment Fit

Both scholars and managers recognize that the fit between an organization and its individual members can be a critical determinant of job satisfaction, tenure, and performance. As noted by Schneider (2001), “of all the issues in psychology that have fascinated scholars and practitioners alike, none has been more pervasive than the one concerning the fit of person and environment” (p. 141). Schneider’s (1987) Attraction-Selection-Attrition framework (Chatman, 1989; 1991; O’Reilly, Chatman, and Caldwell, 1991) formalized how this fit can affect several major components of the employment relationship, with literature from multiple fields highlighting the impact on employee tenure (Kristof-Brown et. al., 2005; Castilla, 2005; Fernandez, Castilla, and Moore, 2000; Jovanovic 1979, Sicilian 1995) has highlighted the importance of employer/employee fit in determining attrition or turnover.<sup>1</sup> These literatures argue that employees may voluntarily leave due to decreased job satisfaction (Boxx, Odom, and Dunn, 1991; Bretz and Judge 1994, Chatman 1991, Vancouver and Schmitt 1991), or they may be terminated due to the detrimental consequences to the organization of decreased performance or deviant behavior (Warren, 2003).

One dimension of employee misfit that can increase attrition is ethical values and behavior, which can be engrained in the norms and policies of the organization, expressed or demonstrated through peers, and heavily entrenched in the relatively static values of individual belief systems (Ford and Richardson, 1994). Business ethics studies have argued that incongruence between the personal values of employer and employee can have detrimental effects on both parties, leading to greater voluntary or forced attrition (Hunt, Wood, and Chonko, 1989; Laufer and Robertson, 1997; Valentine et al. 2002). Furthermore, this ethical dimension of

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<sup>1</sup> The economics and sociology literatures typically refer to fit as “match”.

misfit can have additional organizational consequences through employee behavior, where employees are terminated due to their violations of laws or regulations (Raelin 1984, Robinson and Bennett 1995, Bennett and Robinson 2000).

Yet as Edwards and Rothbard (1999) explain, the argument that misfit is unilaterally harmful is overly simplistic. Both they and Jansen and Kristof-Brown (2005) argue that misfit can produce asymmetric consequences based on whether individual values or behavior exceed or fall short of organizational levels. Furthermore, Edwards (1994, 1995) has shown that the effects of misfit on tenure or other outcomes may be confused with individual and organizational attributes when misspecified in empirical testing. This empirical problem may partially explain why the empirical literature on misfit and tenure is inconsistent and inconclusive (Kristof-Brown et al., 2005), both generally and on the dimension of unethical behavior. What factors might fully explain how the relationship between employee and employer ethics impact tenure?

In this paper we argue that two important factors complicate the relationship between ethical misfit and attrition. First, we argue that market demand may drive certain levels of ethics for both employees and organizations, independent of the ethical misfit between them. While in many cases customers may demand ethical firms and employees, this is not always the case. In many industries, customers may demand leniency against government rules or regulations from the firms that serve them. Examples include accounting firms such as Arthur Anderson assisting with fraud or bars serving underage clients. Similarly, customers may demand leniency from employees even when this behavior conflicts with organizational norms. In this case, the employee must choose between deviating from the firm and displeasing the customer. Restaurant servers, for example, may give free food or drinks to customers to increase tips, or retail

employees may choose not to prosecute shoplifters. While organizational deviance may have disciplinary consequences, deviating from customer demand may produce even worse outcomes. The employee may lose legitimate tips, illegitimate bribes, or may suffer decreased job satisfaction from customer conflict.

The second factor is that both firms and employees may benefit from differences in ethical norms and behaviors. These beneficial differences, which we refer to as the *ethical complementarity of misfit*, may improve both job satisfaction and increase the value of the employee to the firm. As Warren (2003) explains, not all organizationally-deviant behavior is identical. Firms may benefit from employees with ethics that deviate from organizational norms. Employees with ethical standards in excess of the organization may act as important watchdogs and whistleblowers that alert managers to potential problems arising from widespread or isolated unethical behavior within the firm. Alternatively, employees with ethical standards deficient from organizational norms may serve important roles for the firm, engaging in ethically questionable but profitable activities that would be harmful if broadly used throughout the workforce. These “misfit” employees may be complementary to the ethical rules and norms they conflict with, and may therefore be invaluable to the organization.

We use a simple 2 X 2 model of person-organization fit to demonstrate that misfit may be empirically misidentified when using traditional specifications and tests in the existing literature. This model is general to all attributes and outcome variables, and can therefore be used in a broad range of studies on fit. While Edwards (1994) made considerable improvements in separating individual and organizational characteristics from fit, his models do not fully identify the impact of fit, complementarity of misfit, and the impact of attributes. In particular, it is

difficult in Edwards (1994) to understand exactly how parameter estimates are connected to predictions from theory. The primary empirical motivation of these models seems to be explaining variation in the data rather than matching theoretical predictions to empirical parameter estimates. Our model is able to provide empirical predictions for the impact of misfit, complementarity, and market demand on employee tenure when these three factors are jointly estimated. While our model cannot perfectly identify the exact magnitude of each effect, we can identify which influences are dominant in predicting the outcome variable. We also clearly show the connection between our theoretical predictions and the parameter estimates generated by our estimation procedures.

We empirically study the effects of this model in the context of the vehicle emissions testing market, where widespread anecdotal evidence and state enforcement records demonstrate the potential for fraudulent testing behavior in private firms (Hubbard 1998, 2002).<sup>2</sup> Identifying illegal behavior in firms is a difficult endeavor, as firms aggressively hide such behavior for fear of legal and financial repercussions. We are able to peel back this veil of secrecy by using a database of over 6 million emissions tests from a U.S. metropolitan area in 2001-2004, and find evidence that demand for both inspector and facility leniency increases employee tenure. This result is consistent with the financial benefits of leniency in this market for both inspectors and facilities (Hubbard 1998, 2002). Yet in controlling for this demand for leniency, we find no

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<sup>2</sup> Throughout this paper, we define the act of fraudulently passing a polluting vehicle as unethical, consistent with the Jones (1991) definition of unethical behavior as “either illegal or morally unacceptable to the larger community” (p. 367). The ethics of emissions testing fraud seems clear: this behavior is not only illegal, but is socially harmful as well. Mobile vehicle emissions have been repeatedly shown to aggravate respiratory problems, particularly in children, and are partly responsible for acid rain and other environmental problems. For extrapolation on this, see <http://www.epa.gov/otaq/inventory/overview/index.htm> or “Evaluating vehicle emissions inspection and maintenance programs” (2001). Committee on Vehicle Emission Inspection and Maintenance Programs, National Research Council.

impact of fit or complementarity of misfit on employee tenure. While the noisiness of our behavioral field data may make such effects difficult to identify, we believe that in our setting these factors are dominated by the demand for leniency. These results emphasize the importance of separating these effects in any empirical identification, whether using self-response or behavioral data.

We believe this paper makes important theoretical, empirical, and methodological contributions to the literatures on fit, deviance, and business ethics. This paper contributes theoretically by arguing that employee/employer complementarities of misfit and market demand may be as powerful as fit in determining length of tenure, and that these factors often confound one another in empirical identification. Furthermore, they may explain inconsistent empirical results in the fit literature, as well as evidence that the direction of misfit can have differential effects on worker stress and satisfaction (Edwards and Rothbard 1999, Jansen and Kristof-Brown 2005).

Empirically and methodologically, this paper makes several major contributions to the literature on fit. First, we demonstrate the importance of separating measures of fit into organizational and individual components. Edwards (1994) has modeled how measuring fit as a single construct can muddle the effects of individual and organizational characteristics on employment outcomes. Our paper supports this argument, showing that employee and employer leniency explains much of the attrition that might be attributed to ethical misfit, yet we also demonstrate that some of Edward's (1994) suggested empirical specifications do not facilitate carefully matching predictions from our theory to interpretation of the data. We believe our model provides a complementary template to Edwards (1994) for future empirical studies of fit.

Second, we robustly estimate employee and employer leniency and ethical misfit through large-scale behavioral data. Despite hundreds of studies on fit, little evidence exists supporting the more general fit-attrition relationship (Kristof-Brown et al. 2005), and the results are inconsistent and suffer from subjectivity bias common in self-report data (Schwarz 1999, Bertrand and Mullainathan 2001). We believe this paper shows the potential for using improved computational power on large-scale behavioral datasets to identify the importance of multiple dimensions of fit and for measuring ethics and deviance within organizations more generally. The true potential of this methodology lies in the pairing of behavioral data with richer survey, observational, and descriptive data gathering techniques.

## **THEORY DEVELOPMENT AND HYPOTHESES**

### **Influences on unethical behavior: organizational context and individual disposition**

The ethics of employee behavior is the product of two very different influences: organizational context and the individual's disposition. Several scholars in ethics suggest that unethical behavior results from a complex interaction of both factors (e.g., Trevino 1986, Hunt & Vitelli 1986), with Jones (1991) proposing an "issue-contingent" model in which features of moral issues interact with both individual and organizational elements to influence ethical decision making. Separating the influence of these factors is critical toward understanding when employees will be able to conform to organizational norms, and when any conflicts between individual and organizational ethics might persist.

The first of these factors, organizational context, can influence the ethics of employee behavior through the incentives, rules, and culture of the workplace. Considerable evidence and theory highlights the role of organizational and societal variables in unethical behavior, referring

to this influence as the effect of “bad barrels” on employee behavior (Trevino and Youngblood 1990). These bad barrels may be corrupt organizations, where the organization benefits from unethical behavior, or organizations of corrupt individuals, where individuals act self-interestedly for personal gain (Pinto, Leana, and Pil 2008). Studies have identified a number of contextual factors that appear to promote or inhibit intentional unethical behavior, such as the use of incentives (Flannery and May 2000, Schweitzer and Croson 1999, Watts and Zimmerman 1983, Bertrand et al. 2006, Snyder 2010), conflicts of interest (Cain et al. 2005), and codes of ethics (Weaver, Trevino & Cochran 1999, Duggan and Levitt 2002). Individual behavior may converge toward organizational norms, with individual ethics drifting over time due to cultural or economic influences (Gino and Bazerman 2009). Pierce and Snyder (2008) refer to this organizational influence on unethical behavior as “ethical spillovers,” while Ashforth and Anand (2003) refer to this process as “the normalization of corruption,” where corruption can be embedded in the organizations structure and may disseminate to employees across time.

Yet individual ethics are not wholly determined by the organization. A second factor, individual disposition, reflects the employee’s persistent ethical disposition based in the inherent characteristics either born into the worker or developed through a lifetime of education and training. These dispositional factors are resilient through changes in employment. The dominant view in the ethics and economics literature considers individual wrongdoing as intentional, often affecting just “a few bad apples” (Simpson 1987). According to this view, ethical misconduct is the product of intentions and deliberate choices based in the disposition and preferences of the individual worker. Indeed, research has shown that both innate individual factors (e.g., gender, age, and nationality) and malleable personal characteristics (e.g., ethical framework, stage of

moral development, religion, employment, and concern for self-presentation) influence ethical behavior (Fisman and Miguel 2007, Loe, Ferrell & Mansfield 2000, Ford & Richardson 1994), although the results from this body of work at times have been contradictory. For example, while some studies have found that females are likely to act more ethically than males (Ruegger and King 1992), other work has found no impact of gender on ethical behavior (Serwinek 1992). Additional research on implicit biases suggests dispositional factors may be based not only in conscious action, but also in unconscious biases in ethically relevant domains (Banaji et al. 2003, Bazerman & Banaji 2004).

### **The demand for employee leniency and employee tenure**

The variation in individual ethical dispositions may make certain individuals less likely to leave particular types of jobs, independent of the organization for which they work. If trust or an individual's reputation for fair business practices is critical for attracting customers in the industry, then employees may be more successful when they are dispositionally ethical. If customers value interacting with highly ethical employees, then these types of workers are likely to be successful in their vocation. They are likely to generate more business for their firms, higher commissions, and greater customer loyalty. Similarly, they are less likely to have acrimonious contact with customers, and therefore enjoy greater satisfaction in the workplace. Examples of markets with the demand for employee ethics abound, and may include physicians, investment managers, researchers, child care workers, and security guards. Consumer demand for employee ethics may therefore be independent of where that employee works. Consequently, ethical employees may outperform their unethical counterparts.

Alternatively, consumers may demand employees who are willing to break social rules and show leniency. When organizational or legal rules are costly to customers, they may reward employees who show leniency either through financial side payments (bribes or gifts) or through better treatment. In many cases, unethical employees may directly benefit from this demand for leniency through increased remuneration. If they are paid on commission, such as real estate agents, brokers, or salespeople, increased leniency or flexibility with rules may generate growth in business and therefore larger commissions. Even when employees are paid through standard wages or salaries, they may receive side payments from customers for their willingness to break organizational or legal rules. The literature on corruption has demonstrated that such side payments are often necessary for the subsistence living of government officials in developing countries (Shleifer 2004). Consumer demand for leniency may also yield greater job satisfaction for lenient employees than for those who strictly obey rules. If the rules or laws are unpopular, the employee will constantly be in conflict with customers unhappy with the regulation. An employee willing to break or skirt the unpopular rule may avoid some of this conflict, thereby improving their satisfaction in their position.

Whether the marketplace demands leniency or strict adherence to rules, the disposition of the employee is likely to impact their performance and ultimately attrition. When customers demand strict adherence to laws and rules, lenient employees will suffer reduced compensation and career success, and also decreased job satisfaction from conflicts with customers. Similarly, when customers demand leniency with laws and rules, strict employees will lose business and suffer conflict with customers. And while this customer demand may also impact the firm, it will not necessarily do so.

*Hypothesis 1a: Customer demand for employee leniency will increase tenure for lenient employees.*

*Hypothesis 1b: Customer demand for employee stringency will decrease tenure for lenient employees.*

### **Firm leniency and employee tenure**

Similar to individual disposition, organizational ethics may impact employee tenure, independent of the ethical disposition of the employee. This will typically occur because the stringency or leniency of the firm in following laws or regulations can have a considerable impact on its financial health, which will directly influence compensation and employment. Where regulation and government monitoring is intense, firms that skirt rules are likely to be punished through severe fines or prosecution. These punishments will financially injure the firm, leading to likely reductions in workforce. Therefore, independent of any individual employee's actions, a lenient firm may be more likely to reduce its workforce.

Alternatively, under conditions of weak regulation, ineffective monitoring and enforcement, or outright government corruption, lenient firms may profit from their disregard for rules and laws. While this situation is particularly common in developing countries with weak institutions, it can also occur in highly developed nations. Market competition may give clear profit incentives to firms to engage in unethical behavior (Shleifer 2004). Firms that can cut costs through weak adherence to safety or environmental regulation can benefit from better profit margins. The use of illegal immigrant labor at prices below minimum wages is only one example of such actions. Similarly, companies that mislead customers into poor contracts or deals can

profit considerably from malfeasance not provable in a court of law. Independent of any individual employee's actions, a lenient firm may therefore be less likely to reduce its workforce.

*Hypothesis 2a: Firm leniency will increase average employee tenure in markets with weak regulatory enforcement and customer demand for leniency.*

*Hypothesis 2b: Firm leniency will reduce average employee tenure in markets with strong regulatory or reputational costs.*

### **Ethical misfit and attrition**

While the leniency of both firms and individual workers may independently influence likely employee tenure within the organization, the interaction of these characteristics may play an even greater role. A large part of any ethical misfit at hiring will persist throughout the employment relationship. Unless job-seekers find firms that perfectly fit their own ethics, they will suffer at least some level of ethical misfit in any organization. Ethical fit between organizations and employees will likely vary both within and across firms, as some workers are matched to ethically compatible environments and others to conflicting ones. If individuals' personal ethics are persistent as they change employers, then this immutability will inevitably lead to some level of ethical incongruence in any employment position, and has distinct implications for employee performance and ultimately attrition.

Ethical misfit between the employee and organization can influence attrition in two distinct ways. First, ethical misfit may reduce the value of the employee to the firm and thereby increase the likelihood of termination. Firms with strict norms of legal compliance, whether due to market forces, government oversight, or culture, will suffer when employing individuals who engage in unethical and illegal behavior. Research on deviance has examined how unethical

behavior can directly harm firms through theft and embezzlement (Bennett and Robinson 2000; Raelin 1984), and agency theorists in economics have demonstrated that when principals (employers) have less information than agents (employees) and the incentives of these two groups are not aligned, agents behave in self-interested ways that lead them to deceive their principals (Holmstrom 1979). Studies in the organization literature have also focused on how intrinsic motivation from situational factors might lead employees to engage in unethical behavior to harm the organization (Bies & Tripp 1996), to revenge unfair treatment (Greenberg 1993; Gino and Pierce 2009), to help others (Gino and Pierce 2010), or to make opportunistic gains (Brief, Buttram, and Dukerich 2001, Lewicki, Poland, Minton & Sheppard 1997).

In firms where legal compliance is costly or illegal behavior is financially rewarded, highly ethical employees will hurt the organization. Ethical behavior such as honesty may lead to fewer sales and lower prices, although this effect may be mitigated by long-term reputation gains. Unlike much of the work on legal deviance (Baucus and Baucus 1997), behavior may not deviate from societal norms but may be organizationally-deviant and ultimately costly. This is often the case with whistleblowers, who may hurt or help organizations through their misfit with ethical norms (Miceli and Near 1992). In either situation, ethical misfit between person and organization hurts profitability and will tend to encourage termination of employment.

The second mechanism through which ethical misfit might increase attrition is by decreasing the value of the job to the employee, and thereby leading to voluntary resignation. Highly ethical employees may voluntarily leave unethical organizations due to low organizational commitment (Hunt, Wood, and Chonko 1989, Laufer and Robertson 1997, Valentine et al. 2002). While such misfit employees may decide to stay and voice dissent, act as

whistle-blowers (Near and Miceli 1987), or engage in functional disobedience (Warren 2003), they are more likely to leave the firm for a better ethical fit. Ethically-misfit employees may also suffer from the inability to compete with those willing to violate laws or regulations. Under high-powered incentives such as sales commissions, dishonesty may produce greater payoffs, and the unwillingness to act unethically may generate differentially lower income for ethical individuals. Similarly, employees who abhor strict legal compliance or whose competitive advantage lies in illegal or unethical activities will be less likely to stay in firms with strict norms of legal compliance. Finally, ethically misfit workers may leave due to worse prospects for promotion, as their superiors may prefer to promote those with similar disposition (Ponemon 1992).

While the direction of person-organization fit is rarely discussed, this dimension may be critically important for predicting employment tenure and workplace behavior. In an organization where even the slightest legal non-compliance can result in massive fines, penalties, or reputation, a slightly less ethical employee may be much more costly than a slightly more ethical one. Similarly, where legal penalties are unlikely and profits from unethical behavior high, a marginally less ethical employee may be costless, while a slightly more ethical one may reduce profits. Past work on over qualification (Johnson and Johnson 1999) and relative deprivation and underemployment (Feldman, Leana, and Bolino 2002) have addressed the importance of direction, but have studied it unidirectionally. Research on differential misfit has both argued and empirically shown that the influence of misfit on a given dimension may depend on whether it is the person or environment that is at a higher level (Edwards 1996, Edwards and Rothbard 1999). French et al. (1982) discuss this asymmetry in terms of “excess” and “deficiency,” where conditions of excess occur when environmental values exceed individual

values. Jansen and Kristof-Brown (2005) confirm the asymmetry of misfit, empirically showing that misfit between the work pace of an individual and his/her group has differential psychological effects depending on who held the faster rate. Similarly, the effects of ethical misfit may also be bi-directional, with some workers less ethical than their organization and others exceeding organizational ethics. While French et al. (1982) define excess as the environment exceeding the individual, on the dimension of ethics we define this differently, based on the individual rather than the environmental level. Employee ethical excess would involve ethical individuals in unethical organizations, while employee ethical deficiency would involve the opposite.

The empirical literature connecting fit with tenure is inconclusive, particularly with regard to the dimension of unethical behavior. Many studies have found significant correlations between fit and those factors affecting employee tenure. Vancouver and Schmitt (1991) found person-organization fit to be highly correlated with organizational commitment, job and organizational satisfaction, and intent to quit, although the directional causality was not fully established. This may explain why they found little correlation with tenure or turnover. Furthermore, “intent to quit” may not predict actual quitting behavior, but rather signal job dissatisfaction. While Castilla (2005) found that fit, as implied by an applicant having been referred by an existing employee, influenced call-center productivity nearly immediately after hiring, an earlier study by Fernandez, Castilla, and Moore (2000) found no effect of referrals on turnover rates. In their meta-analysis, Kristof-Brown et al. (2005) found the broader literature to support the importance of fit for employee attitudes and beliefs, but again found little evidence for the fit-attrition link. Despite this lack of evidence, existing theory suggests these known

effects of fit should drive both the decision to voluntarily leave employment and termination due to lower productivity.

*Hypothesis 3: Ethical misfit between an individual and the organization will reduce employee tenure.*

The concept of ethical fit is typically applied to similarities in the ethics and ethical behaviors of firms and their employees. Yet scholars of organizational fit and congruence have noted that similarity on many dimensions is not necessarily beneficial for either the firm or the employee. Muchinsky and Monahan (1987) argued for the conceptualization of fit as *supplementary*, where employers and employees are similar, and *complementary*, where they are different or offsetting. Employees who dramatically differ from their employers may not fit in a traditional supplementary role, but may instead be complementary in their fulfilling of a specific organizational or environmental need (Kristof 1996). Studying the dimension of extraversion, Kristof-Brown, Barrick, and Stevens (2005) found evidence that such complementary fit may exist based on the attractiveness of teams to potential members. They found this attractiveness to be correlated with perceptions of team member contribution, which at least suggests some link between complementary fit and performance. Similarly, Cable and Edwards (2004) found evidence that similarity between an employee and their environment may not be optimal on several dimensions.

The broader literature on fit seems to present little evidence on when incongruence or characteristic differences between firms and employees may improve performance. Yet there are many reasons to believe that such complementarities might exist--particularly ethical complementarities. Argyres and Mui (2007) argue that organizational dissent can provide

considerable benefits to the firm. Such dissent can prevent herd behavior (Sunstein 2003) that can lead to costly organizational outcomes. Dissent may be particularly important on ethical dimensions, where internal watchdogs or devil's advocates may prevent costly organizational failures such as Enron or Arthur Andersen. While such dissent may yield considerable reprisals when not appreciated, these employees may play the role of what Hurley (1991) refers to as the "loyal opposition". The ethical complementarity of the employee's dissent is acknowledged and valued within the organization, and both their own and the firm's performance benefits from this difference. Such dissenters, if valued in the organization, may seek to stay with the organization to serve this vital role (Graham 1986).

Similarly, less-ethical employees may serve valuable roles for organizations in their willingness to serve roles that are of questionable ethics or are socially stigmatized. These jobs, which Ashforth and Kreiner (1999) refer to as "morally tainted," may be undesirable for workers with high dispositional ethics, but that lack of desirability may in fact make those unconflicted with the job tasks invaluable to the firm. Managers and other workers may value having employees willing to carry out such morally tainted tasks, since this precludes the necessity to taint themselves with the behavior. Furthermore, such unethical outliers in organizations may provide potential scapegoats in case of scandal or legal action. The isolation of the worst behaviors to specific employees may potentially protect the firm from legal or reputational accusations of problems in organizational ethics. Such employees may therefore enjoy greater compensation and protection for their unique role within the organization.

*Hypothesis 4: Complementary in misfit employee attributes will increase employee tenure.*

It is critically important to note that our hypothesized effects are not mutually exclusive of each other. Both the demand for attributes in Hypotheses 1 and 2 and fit (Hypothesis 3) can impact employee tenure. Similarly, the demand for attributes and complementarity of misfit (Hypothesis 4) could impact employee tenure. The only hypotheses that are truly competing are those of fit and complementarity of misfit. Yet if either the fit/misfit hypotheses or the demand for attributes hypotheses are much larger in magnitude, it may be difficult to observe the weaker effects. Consequently, we can empirically identify dominant factors in predicting employee tenure, but cannot definitely rule out all other hypotheses. We illustrate this in a simple model presented below.

### **A SIMPLE MODEL OF THE IMPACT OF ATTRIBUTES, FIT, AND COMPLEMENTARITY OF MISFIT**

Existing theory and the arguments presented here suggest several hypotheses about how the combination of individual and organizational ethics can impact employee tenure. For studying potential benefits from fit, complementarities, or attributes, how might we independently identify these potential hypotheses? The traditional approach is to specify a regression model consistent with the hypothesis, but such an approach inherently rules out alternative hypotheses. Instead, we present a simple 2 X 2 model to define the impact of fit, complementarity of misfit, and the attributes of the employer and employee on employee outcomes. The advantage of this model is that it clearly connects the hypothesized effects relating to demand for attributes, fit, and complementarities to the data. Since many of the hypothesized effects are not mutually exclusive, this model clearly delineates which effects

dominate. This model could apply to any outcome variable, such as performance, job satisfaction, or tenure. To do this we first provide a careful definition of fit and how this definition translates to common empirical approaches.

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INSERT TABLE 1 HERE  
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To define fit we start with the simple two-type approach in Table 1. We do this not because we feel it is more accurate than a continuous approach, but rather that the simplicity of this environment greatly aids in presenting the theory and in interpreting regression results. Each time a worker joins a firm, we characterize both workers as either possessing an attribute or not. Examples of such binary attribute categorizations could be gender, ethnicity, education level, or other demographics. But they could also be more continuous attributes such as personality, emotional intelligence, pace of work, or any psychological scale or behavioral measurement that can be bifurcated into high/low binary categories. For example, in our setting we might define a worker as lenient or not lenient (strict) by splitting the sample at the top 50% of all workers. We might define a lenient firm in similar manner. Fit between employee and firm would be those in cells (A) and (D). In this simple model, the fit hypothesis, Hypothesis 3, would suggest that the mean values of tenure in cells (A) and (D) would be greater than those in cells (B) and (C).

While there has been substantial empirical work on person/organization fit, it is difficult to find a precise empirical definition of the impact of person/organization fit on outcomes. This is particularly true for separating the impact from fit, attribute demand, and complementarity of misfit. We proceed by proposing definitions for these empirical identifications based on our framework in Table 1 and then show how these definitions can

be tested in an empirical setting. In this table we define individuals and firms based on a common characteristic. The fit literature seeks to test whether the closeness of this common characteristic between the firm and the individual has any influence on outcomes such performance, attrition, or job satisfaction.

It is critical in defining the impact of fit to first identify the state in which fit has no impact on outcome variables. We propose that when fit does not matter, the outcome is independent of the fit between the individual and the firm. We call this situation *conditional independence*. Using Table 1, we define conditional independence as follows:

(1) *Conditional Independence of Attributes:  $B-A = D-C$  ;  $C-A = D-B$*

In our empirical setting, this condition states that the impact of hiring a lenient versus a strict inspector on job tenure is not dependent on whether the firm is strict or lenient. Likewise, the impact of a facility being strict or lenient on the employee's job tenure is not influenced by the type of the employee. If conditional independence holds, then the match between employee and firm does not influence tenure or any other plausible outcome variable. In the case of conditional independence, it is still possible that certain attributes could influence outcomes positively or negatively. Conditional independence simply means that the interaction between these attributes doesn't matter.

The outcome variable may be unaffected by fit, while still being influenced by the individual attributes that define fit. That is, the attribute of interest (in our case leniency) may impact the outcome variable (tenure) even under conditional independence. We therefore define the positive impact of firm and individual attributes under conditional independence, where fit are unrelated to outcomes.

*(2) Positive Impact of Employee Attributes:  $B > A ; D > C$*

*(3) Positive Impact of Firm Attributes:  $C > A ; D > B$*

The previous definitions indicate scenarios where only one of either the firm or the individual impacts the outcome variable. If both employee and firm attributes positively influence the outcome, then we should observe the following condition under conditional independence. Note that quadrant D has the greatest value, while quadrant C has the lowest.

*(4) Positive Impact of Both Employee and Firm Attributes:  $D > B > A$  and  $D > C > A$*

In our setting, this would imply that tenure is the greatest where both facilities and inspectors are lenient, and lowest where both are strict.

Any impact of either fit or complementarity of misfit is a violation of conditional independence. The individual attributes of the firm and individual no longer act independently on the outcome variable, but rather interact with one another. We present definitions of both of these violations in isolation of the other predictors. We first present these impacts as symmetrical, where the impact of fit at high attribute levels is equivalent to fit at low attribute levels.

*(5) Symmetric Impact of Fit:  $A > B \& C ; D > B \& C$*

The impact of fit on an outcome is here defined by the fit quadrants, A and D, being larger than the misfit quadrants, B and C. The impact of fit in our empirical context simply means that the closeness of leniency or strictness is the dominant positive determinant of job tenure. If, instead, fit is costly, and there are complementarities in misfit between worker and firm attributions, we would observe the following condition.

*(6) Symmetric Complementarity of Misfit:  $B = C > A$  and  $B = C > D$*

The complementarity of misfit is here defined by the misfit quadrants, B and C, being larger than the fit quadrants, A and D. In our empirical context, this would mean that the closeness of leniency or strictness would have a negative influence on job tenure.

## **Regression Models**

The comparison of outcomes across the 2X2 matrix has several linear regression analogues:

$$(1) \text{ Outcome} = a_1 + a_2 * \text{Fit} + e$$

Where fit is an indicator equal to one if the observation is in cell (A) or cell (D) and zero otherwise. A positive coefficient on  $a_2$  would suggest that fit is present and that conditional independence is violated. One common critique of specification (1) is that it does not explain as much variation in the data as a more flexible model could. One suggestion from Edwards (1994) is to separately estimate the impact of employee and facility attributes on outcomes.

$$(2) \text{ Outcome} = b_1 + b_2 * \text{Employee} + b_3 * \text{Facility} + e$$

While specification (2) certainly could explain more of the variation in the data, it is inferior to specification (1) in terms of measuring fit. This is because specification (2) does not compare misfit employees to those with good fit, but rather measures the impact of the firm's and employee's attributes conditional on each other. In our setting, one of the plausible interpretations of a positive coefficient on  $b_2$  in specification (2) is that the more lenient an inspector is, the more valuable they are to the organization and will therefore stay longer. There are certainly other plausible interpretations, but none of them address the issue of fit because specification (2) is inherently not about fit, but rather the impact of some attribute on attrition. To

examine the impact of the attribute and fit on tenure, the fully interacted model combining specifications (1) and (2) is necessary. In our setting, this specification can be rewritten as:

$$(3) \text{ Outcome} = b_1 + b_2 * \text{Employee} + b_3 * \text{Firm} + b_4 * \text{Employee} * \text{Firm} + e$$

This specification fully characterizes the 2X2 model. The outcome in cell (D) is given by  $b_1$  and the outcomes in other cells are given by simply adding the parameters together. For example, the outcome in cell (D) is given by  $b_1 + b_2 + b_3 + b_4$ . In our setting, this specification can be rewritten as:

$$(4) \text{ Tenure} = b_1 + b_2 * \text{Lenient Inspector} + b_3 * \text{Lenient Station} + b_4 * \text{Lenient Station} * \text{Lenient Inspector} + e$$

The implication of our hypotheses for the fully-interacted linear model (4) is presented below in Table 2. Note that the implications for the parameter estimates is the same for related non-linear models, such as the Cox hazard model we include later in the paper.

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INSERT TABLE 2 HERE  
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## **EMPIRICAL SETTING**

Empirical work on fit has been fruitful on many dimensions, but there are several crucial gaps in this literature. Survey-based empirical work has shown important correlations between fit and job satisfaction (Boxx, Odom, and Dunn 1991, Bretz and Judge 1994, Vancouver and Schmitt 1991) and various measures of performance (Bretz and Judge 1994, Downey et al. 1975, O'Reilly and Chatman 1986, Posner, 1992). And while papers have established the effect of P-O fit on the intention to quit (Chatman 1991, O'Reilly et al. 1991, Vancouver, Millsap, and Peters 1994), there is still inconclusive evidence on fit's influence on attrition. Furthermore, the

empirical literature has primarily relied on self-reported surveys and questionnaires, which present fundamental problems in measuring fit. While this data collection methodology is particularly appropriate for hard-to-observe attitudes and personality characteristics, it presents problems of respondent bias and truthfulness.

The problems with self-reporting have long been recognized in economics and psychology, where some have taken rather extreme views, arguing that self-reported responses are uninformative cheap talk (Friedman 1953). While experimental evidence discredits this extreme view, as Bertrand and Mullainathan (2001) explain, survey responses suffer from a variety of problems, including interpretation of questions, respondents' understanding of scales, care in answering questions, respondents not wanting to look bad, lack of true attitudes, weak self-knowledge, and cognitive dissonance. Yet as they point out, survey responses can be very informative, and they often represent the only method for understanding attitudes and personalities. In certain cases, however, their value may be highly limited by the problems discussed in Bertand and Mullainathan (2001), Schwarz (1999), and Presser and Stinson (1998). These problems seem to be particularly severe when attempting to assess the propensity or willingness of an employee to engage in fraudulent or illegal behavior. A more accurate measure of fit on legal compliance may be observed past behavior. If we can observe and measure legal compliance (or lack thereof) in the pre-hiring behavior of employees and firms, we can better understand how ethical misfit can influence performance and attrition.

We study ethical misfit in the market context of vehicle emissions testing. The vehicle emissions testing market has tremendous potential for unethical behavior. While inspectors are legally required to follow strict testing procedures, they have numerous opportunities to diverge

from this course for financial gain or personal preference. Skilled mechanics can make nearly all vehicles pass through a number of temporary mechanical adjustments that do not address the underlying causes of the excess pollution.<sup>3</sup> Even the worst cars can be certified clean through substituting other cars during the testing procedure. Not only do inspectors have opportunities to cheat, they will often have strong incentives. As Hubbard (1998, 2002) addressed in California, reputation, repeat business, and other repairs all provide incentives in certain facilities. Outright bribes and shopping around by customers can furthermore motivate inspectors to help customers pass even grossly polluting vehicles. Firms in this market tend to profit from unethical behavior, since fraudulently passing their customers' older cars ensures they will remain on the road and in need of other mechanical repairs. Customers who fail emissions tests buy new cars, which need little if any repair work.

The state can do little to enforce that the testing is being carried out legally, short of engaging in covert investigations.<sup>4</sup> Only when facilities or inspectors are passing nearly every vehicle do regulatory agencies carefully investigate. The cost to society of this unethical behavior is broadly distributed through pollution, such that the impact is rarely salient to consumers or voters. Consequently, since facilities have strong incentives to fraudulently pass older cars, many are likely to encourage this action in their employees. Ethical employees may

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<sup>3</sup> If a driver has a registered vehicle weighing less than 8500 lbs., they must get it tested for hydrocarbons (HC), carbon monoxide (CO), and nitrogen oxide (NOx). If their car is newer than 1981, they must choose a testing station at which to conduct the test. These testing facilities will be private companies, but will be licensed by the state. Vehicles will receive one of two tests: dynamometer and idle. In the idle test, the probe is inserted into the tailpipe while the car engine idles. This test is much easier to pass, as it doesn't measure NOx levels. The dynamometer test, which requires the vehicle to run on a sort of "treadmill," measures exhaust at different engine RPM's.

<sup>4</sup> Discussions with the state agency suggest that covert audits are very rare, due to the unwillingness of state workers to participate in them.

reduce profits, and therefore may be either forced out or pressured to leave. Only extremely unethical inspectors fundamentally put the firms at risk for regulatory punishment.

Consequently, in our setting, firms suffer little threat from ethically deficient employees due to few regulatory or reputational risks. In this market, we expect firms to benefit from ethically deficient employees through increased customer loyalty and testing business. The true cost to the firm is from ethically excessive employees, who may drive away potential customers by refusing to illicitly help them pass their emissions tests.

## **DATA**

Our dataset comes from the department of motor vehicles (DMV) of a large northern state. It contains all vehicle inspections conducted between 2001 and 2004 for gasoline-powered vehicles under 8,500 lbs,<sup>5</sup> and includes vehicles owned by individuals, corporations, fleets, and government agencies. Only those vehicles in dense urban areas are included, as these are the only vehicles that required our specific testing procedure during this time period. The data at the inspection level includes inspection date, the inspection time, VIN number, facility identifiers, inspector identifiers, and inspection results. These data allow us to uniquely identify vehicles, including all characteristics such as make, model, model-year, and odometer reading. Additionally, we know the name and address of the inspection station, as well as the date on which the test occurred. Finally, we can observe which inspector conducted the test through unique inspector ID's, although we do not know their names. Since we know exactly when and

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<sup>5</sup> Most passenger vehicles fall within this range.

where the inspection took place, this allows us to follow the careers of inspectors as they change employment from one facility to another.

One major limitation of our data is that they do not identify the nature of the attrition. Inspectors who are involuntarily terminated by a facility appear identically to those who voluntarily leave. Another limitation is that we rely on observed tests to indicate continued employment. While our data represent the entire population of tests in 2001-2004, it is possible that some inspectors remain as employees while ceasing to perform inspections. The small size of most of these firms, however, makes this possibility unlikely, as employees must serve multiple roles. Censoring on both the left and right side are additional problems. Our analysis is consequently limited to those inspectors who switch stations during our time period, which means we must refrain from drawing inferences about workers with extremely long tenures.

## **EMPIRICAL APPROACH AND RESULTS**

### **Measuring Ethical Misfit and Leniency**

Having demonstrated the importance of empirically separating ethical misfit from the demand for leniency, we now apply our methodology to our emissions testing data. Our approach proceeds in two steps. The first stage is to measure both the dispositional ethics of the employee and the behavioral norms in the hiring firm through behavior *prior to the inspector joining the hiring firm*. These pre-hire measures are equivalent to employee surveys or interviews given at the time of hiring, except that they identify pre-existing traits based on observed behavior. Additionally, we derive a measure of misfit between the inspector and the facility through differences in this pre-hire behavior. If an inspector passed vehicles at a much higher rate than the hiring facility (prior to hiring), this would indicate a positive ethical misfit.

Similarly, if the inspector passed fewer vehicles, this would indicate a negative ethical misfit. This measure is used to demonstrate the inadequacy of specification (1) in identifying sources of attrition. In the second stage we use measures of leniency and misfit as independent variables in Cox proportional hazard models that predict employee tenure at the new facility. These models test our hypotheses using the specifications presented in our hypothetical model above.

### **Sample Selection**

We begin by creating a sample of inspectors that switch facilities during our four-year period. We construct this sample in a conservative manner. For an inspector to be included in this sample they must not be working at multiple facilities simultaneously. Even if an inspector moves from facility A to facility B, they are excluded from our sample if they worked at another facility during the period when they were employed at facility B. Furthermore they are eliminated from our sample if they return to their original facility. They also must remain at the new facility at least seven days, a restriction used to exclude temporary workers from our sample. This sampling is necessary from an identification standpoint, because it is impossible to identify pre-hire behavior in individuals for whom we never observe behavior prior to joining a facility. This sampling is equivalent to past studies involving hiring, where we cannot observe those individuals who never change jobs. We further restrict our sample to inspectors and facilities whose pre-hire observations are of sufficient size to adequately measure pre-hire behavior. For our baseline model, this minimum size is 25. We later present alternative restrictions for robustness.

## Identifying the Impact of Leniency and Ethical Misfit

Having developed a measure of pre-hire leniency and misfit in the first stage, we now test our hypotheses on how the demand for leniency and ethical misfit influence inspector tenure. To test our hypotheses, we first calculate mean tenures for each of the four quadrants presented in Table 1. This allows us to apply simple t-tests of the inequalities in tenure proposed by our hypotheses. Using our pre-hire pass rates, we split our sample into the top 50% of inspectors in leniency (which we call “lenient”) and the bottom 50% (which we call “strict”). We do the same for facilities. We present these mean tenure values in Table 3.

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INSERT TABLE 3 HERE  
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We first find that there is significant evidence supporting the impact of the demand for leniency on tenure. For cells (A), (B), or (C) when either the worker or the firm becomes more lenient attrition is diminished. Consider cell (B) where the hired inspector is lenient but the hiring firm is not. Moving towards a lenient firm increases the number of days the inspector stays with the station by almost 80 days on average. However, we do not find evidence that fit is more important than the demand for leniency. If fit were the most important factor leading to attrition we would expect that cells (A) and (D) would both be significantly greater than cells (B) and (C). In fact what we find is that cell (A) is significantly *smaller* than any of the other cells. These results are consistent with Hypotheses 1a and 2a, that the demand for leniency in facilities and inspectors increases tenure.

Next, we apply a Cox proportional hazard rate model to our specifications (1)-(3). We use a Cox model instead of an OLS regression because it allows us to deal with the significant

right hand side censoring problem that we face in the data.<sup>6</sup> Our fully-interacted Cox model, which replaces specification (3), is therefore:

$$h_{ij}(t) = \lambda \exp[\beta_2 \text{LenientInspector} + \beta_3 \text{LenientStation}_{ij} + \beta_4 \text{LenientStation}_{ij} * \text{LenientInspector}_{ij}]$$

The Cox model estimates the hazard rate for any inspector *i* in the facility *j*. *PreControls* includes unique characteristics of both the facility and inspector portfolios prior to hiring. These variables, which include vehicle age and odometer, control for differences in pre-hire portfolios of cars that might affect pass rates.

### **Hazard Model Results:**

Table 4 presents the descriptive statistics for our sample, which requires a minimum of 25 pre-hire tests to measure misfit. Our sample of 2,119 inspectors has mean tenure of 373 days, with pre-hire pass rates of approximately 94.5% for both inspectors and facilities. We designate those inspectors and facilities above the median pass rate as *Lenient*, while those below are designated as *Strict*. 31.7% of all inspector-facility pairs involve both being above the median, while 36.7% involve both being below the median.

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INSERT TABLE 4 HERE  
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We present the hazard model results from our sample in Table 5. Columns (1) and (2) represent the simple fit model. Columns (3) and (4) represent the equivalent to the Edwards model we presented in specification (2). Columns (5) and (6) represent the fully interacted model

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<sup>6</sup> We operate under the assumption that if the employee was with the station during the last month of the sample that they stayed with the firm. If the employee is not with the firm during the last month of the sample the date of separation is the last inspection performed by the employee at the station.

capable of testing our hypotheses. For each of these specifications, we include one model without controls (1, 3, and 5) and one model with controls (2, 4, and 6).

Both models (1) and (2) indicate no simple relationship between fit and attrition. The traditional fit model shows no impact of misfit on attrition. Yet the Edwards linear model in columns (3) and (4) indicates statistically significant relationships between the demand for leniency and attrition. Consistent with hypotheses 1a and 2a, consumer demand for leniency appears to reduce attrition, although the statistical significance for hypothesis 2a is weak. The fully-interacted models in columns (5) and (6) continue to show the impact of inspector leniency in reducing attrition (and thereby increasing tenure). The inclusion of the interaction term, however, fails to find any impact of ethical misfit on attrition.<sup>7</sup> In short, we find no evidence that ethical misfit impacts employee tenure or attrition. Rather, it is primarily the leniency of the inspector, independent of the firm, which predicts employment length.

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INSERT TABLE 5 HERE  
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Table 6 presents robustness tests using Cox models for specifications (1) and (2). Columns (1) and (2) relax our sample restrictions to a minimum 5 pre-hire inspections. Columns (3) and (4) restrict our sample to inspectors and facilities with at least 100 pre-hire inspections. Columns (5) and (6) define leniency or strictness at the top 25<sup>th</sup> percentile, rather than at the median inspector. The results in Table 6 are consistent with those in Table 5. Hypothesis 1a is consistently supported, with marginal support for hypothesis 2a. Employee leniency seems to be primarily driving tenure, as customer demand for leniency increases financial rewards and likely

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<sup>7</sup> Since the model is non-linear the interpretation of the interaction enters the equations non-linearly. Because the effect size is so small this is not substantively relevant in this case.

job satisfaction as well. While we have one marginally significant result for misfit in column (5), the absence of any other findings suggests this may be a statistical anomaly.

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INSERT TABLE 6 HERE  
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## **DISCUSSION AND CONCLUSION**

In this paper we develop predictions on how ethical misfit and the demand for leniency might employee attrition. We argue that when employee disposition conflicts with organizational norms, employees may be more likely to voluntarily leave or be terminated. But we also show that one must be careful to disentangle the impact of employee and firm behavior from the interaction of these behaviors. As Edwards (1994) has illustrated, any measure of misfit or incongruence is a construct of two independent variables, and treating misfit as a single construct can lead to faulty conclusions. We take Edwards approach a step further, presenting a fully-interacted model capable of identifying the impact of individual and firm characteristics as well as their interaction through misfit. Our model, while simplified in its binary measure of leniency, is not contingent on hypothesized relationships. In essence, our model and empirical specification is capable of testing any hypothesized relationships between firm and employee characteristics and attrition. Furthermore, it is applicable to other outcome variables such as employee satisfaction, productivity, or behavior.

Our empirical analysis of over 2,000 emissions inspectors shows that in a market where unethical leniency is in demand by customers, employee behavior influences attrition while misfit does not. Firm leniency may also prolong tenure, but this effect is weaker and less-

accurately identified. We find no evidence that ethical misfit impacts attrition. Leniency by mechanics is the only visible factor impacting attrition.

While our empirical results strongly support the role of employee leniency in reducing attrition, there are several limitations to our analysis. First, we urge the reader to be cautious while interpreting our results, since like nearly every other study on fit, we cannot control for the endogenous matching of employees to firms. Furthermore, we do not know if the employee was terminated or voluntarily left the facility. While our theory predicts similar effects on both types of attrition, we cannot parse out the separate effects in this market setting.

This paper contributes to the understanding of the interaction between the dispositional ethics of employees and the culture and norms of the organizations that hire them. More specifically, we demonstrate how there are elements of individual ethics that are immutable, and that dispositional leniency by employees can elongate their stay at a firm. Furthermore, our simple model illustrates how a fully-interacted empirical model can separate out the impact of many factors on employees' outcomes. These factors include potential roles of employee and firm characteristics, misfit, and potential complementarities. While we do not find any evidence of misfit or complementarities, we hope this explication and model will help future studies separate these intimately tied factors.

Additionally, we contribute to the literature on fit by using a new method for measuring ethical misfit. We employ pre-hire behavioral data, which we believe eliminates two of the major problems with self-reported ethics: bias and misrepresentation. This represents a significant methodological contribution, one that can be used in conjunction with existing methods. The strength of this methodology is in its ability to link misfit with attrition, a link not

consistently established in the empirical literature in psychology (Kristof-Brown, Zimmerman, and Johnson 2005), psychology, or sociology (Fernandez, Castilla, and Moore 2000, Castilla 2005). While pre-hire behavioral data is often difficult to find, we still see significant potential for this methodology in multiple types of fit: ethics, productivity, and other types of performance. These applications will likely be strongest in markets where employee productivity or behavior is necessarily tracked by regulatory agencies or third parties. Examples might include tax accounting, education, safety inspections (restaurants, plants, cranes, building), real estate, home mortgages, or transportation. Researchers might also find sufficient data for these studies when studying person-group fit when employees move within firms, as such organizations may track past employee performance, productivity, or behavioral problems. The potential for this methodology is also to apply it in work similar to Castilla's (2005), linking misfit to robust measures of post-hire or post-transfer productivity. This methodology has greater possibilities than we can demonstrate with our dataset, which is limited by firm size and lack of information on cause of termination. Behavioral data from larger organizations can also better identify diversity as a possible moderator for the misfit-attrition relationship.

Furthermore, the context in which we study this problem is not a trivial one--vehicle emissions testing is widespread across the United States, and has serious implications for the economy, the environment, and public health. Fraud in emissions testing has been linked to customer loyalty (Hubbard, 2002) and customer wealth (Gino and Pierce 2010), and can be extrapolated to elevated air pollution and infant mortality (Chay and Greenstone, 2003). We therefore believe that this paper not only contributes to our understanding of ethics and organizations, but also to the management of employees and the design of environmental policy.

These findings have considerable implications for both managers and policy-makers. When individuals join organizations, their personal ethics are not entirely immutable but are clearly persistent. These personal ethics may significantly impact employee retention, and it is therefore important to identify these pre-hire. How can managers accomplish this? In many non-profit or heavily regulated industries, pre-hire behavioral data may be available from third-parties or agencies. In education, past classroom scores are often publicly available. In medicine, surgeon and physician medical choices and performance are also reported. Attorney behavior in transcripts of past cases may also be observed. The accident and violation records for drivers of taxis and other livery services are available to managers as well. Furthermore, pre-hire behavior not directly related to the new position may be informative and predictive of likely misfit. Past arrests, credit defaults, and community service may provide behavioral evidence of likely individual attributes and potential ethical misfit. We would not argue that measuring attributes and fit based on pre-hire behavior is always feasible, but rather that it is a complement to traditional methods using interviews, references, self-reports, and more subjective evaluations of disposition.

Some of the most interesting strategy and policy implications of this paper stem from the financial and career benefits from unethical behavior. Firms in some industries may suffer financially from hiring employees that are too ethical. Our results show the effect on attrition to be greatest when employees are highly ethical. But this directional effect will not always be true across firms and industries. Where unethical and illegal behavior is sufficiently monitored and legal sanctions are sufficiently high, unethical employees may become liabilities for the firm. We would obviously not propose hiring fraudulent employees as a recommended course of action,

but we suggest that firms should care intimately about the unethical actions of their competitors. If unethical or illegal behavior lends a competitive advantage to a rival, then monitoring these dimensions in the marketplace becomes an important strategic action, as firms can then report such behavior to authorities (if illegal) or publicize this to customers if it is reputationally-costly. We also would suggest that regulators and authorities must focus vigilantly on those industries where unethical behavior pays. Penalties and enforcement activities, when feasible, must be brought to levels to change the profit calculus of unethical behavior. Our evidence suggests that hiring highly ethical inspectors may hurt the firm. Given our knowledge about levels of cheating in this market, we can only believe that the optimal employee is not one who strictly follows the law.

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Table 1: A Simple Model of the Impact of Attributes and Fit on Performance

	Worker Attribute = 0	Worker Attribute = 1
Firm Attribute = 0	(A) Outcome	(B) Outcome
Firm Attribute = 1	(C) Outcome	(D) Outcome

Table 2: Implications of Hypotheses for Linear Model

	Implications for Linear Model
Hypothesis 1a (Demand for Worker Leniency)	$b_2 > 0$
Hypothesis 2a (Demand for Firm Leniency)	$b_3 > 0$
Hypothesis 3 (Fit Increases Tenure)	$b_2 > 0; b_3 > 0; b_4 > 0$ and large
Hypothesis 4 (Complementary Misfit Increases Tenure)	$b_2 > 0; b_3 > 0; b_4 > 0$

### Table 3: Summary Statistics

	Observations	Mean	SD	Median	Min	Max
Inspector tenure at new facility	2119	373	345	249	1	1386
Percentage inspectors that left the new facility	2119	0.695	0.461	1.000	0	1
Facility pass rate prior to hiring the inspector	2119	0.946	0.042	0.956	0.678	1
Inspector pass rate prior to joining the new facility	2119	0.944	0.047	0.955	0.600	1
Facility pass rate prior to hiring the inspector above the median	2119	0.501	0.500	1.000	0	1
Inspector pass rate prior to joining the new facility above median	2119	0.500	0.500	1.000	0	1
Facility and inspector pass rate prior to hiring are both above the median	2119	0.317	0.465	0.000	0	1
Median facility and inspector pass rate prior to joining are mismatched	2119	0.367	0.482	0.000	0	1
Mean vehicle make year at the facility prior hiring the inspector	2119	1994.5	1.9	1994.3	1989.5	1999.9
Mean vehicle make year seen by the inspector prior to joining the new facility	2119	1994.8	1.9	1994.5	1990.0	2000.1
Mean vehicle odometer reading at the facility prior hiring the inspector	2119	71921	21746	71966	23524	201692
Mean vehicle odometer reading seen by the inspector prior to joining the new facility	2119	69234	21097	69487	26564	202451
Number of inspections performed by the facility prior hiring the inspector	2119	1355	1366	924	25	10771
Number of inspections performed by the inspector prior to joining the new facility	2119	259	409	128	25	5771

Note: For an inspector facility pair to be included in the sample they must have both performed at least 25 inspections prior to the inspector being hired.

**Table 4: Mean Inspector Tenure (Days) at  
New Facility**

	Pre-hire strict inspector (Below median pass rate)	Pre-hire lenient inspector (Above median pass rate)	Difference (Standard Errors)
Pre-hire strict facility (Below median pass rate)	311.507 (11.936)	353.288 (17.938)	41.781 (21.546)*
Pre-hire lenient facility (Below median pass rate)	395.474 (17.834)	432.681 (13.919)	37.207 (22.622)*
Difference (Standard Errors)	83.967 (21.459)***	79.393 (22.705)***	

Note: Standard errors computed in parenthesis. \* significant at 10% level, \*\* significant at 5% level, \*\*\* significant at the 1% level. For an inspector facility pair to be included in the sample they must have both performed at least 25 inspections prior to the inspector being hired.

Table 5: Impact of Leniency and Misfit on Probability of Attrition

	(1) Time To Exit	(2) Time to Exit	(3) Time To Exit	(4) Time To Exit	(5) Time to Exit	(6) Time To Exit
Median facility and inspector pass rate prior to joining are mismatched	1.000 (.055)	.991 (.055)				
Facility pass rate prior to hiring the inspector above the median			.909 (.051)*	.908 (.054)	.900 (.073)	.906 (.075)
Inspector pass rate prior to joining the new facility above median			.766 (.044)***	.852 (.062)**	.757 (.059)***	.850 (.077)*
Facility and inspector pass rate prior to hiring are both above the median					1.023 (.113)	1.004 (.111)
Facility and Inspector pre-hiring make year, odometer, and number of inspections controls	No	Yes	No	Yes	No	Yes
Number of Observations	2119	2119	2119	2119	2119	2119
Number of Failures	1472	1472	1472	1472	1472	1472

Note: Robust standard errors clustered at the facility level are computed in parenthesis. \* significant at 10% confidence level, \*\* significant at 5% confidence level, \*\*\* significant at 1% confidence level. All results account for right hand side censoring. For an inspector facility pair to be included in the sample they must have both performed at least 25 inspections prior to the inspector being hired.

Table 6: Robustness Tests for Sample Selection and Leniency Cutpoint

	(1) Time To Exit	(2) Time to Exit	(3) Time To Exit	(4) Time To Exit	(5) Time to Exit	(6) Time To Exit
Facility and inspector pass rate prior to joining are mismatched	1.003 (.047)		.880 (.068)		.900 (.056)*	
Facility pass rate prior to hiring the inspector		.895 (.044)**		.896 (.076)		.876 (.058)**
Inspector pass rate prior to joining the new facility		.830 (.044)***		.838 (.080)*		.846 (.069)**
Facility and Inspector pre-hiring make year, odometer, and number of inspections controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Less Restrictive	Less Restrictive	More Restrictive	More Restrictive	Baseline	Baseline
Threshold to classify a facility as being lenient	Median	Median	Median	Median	Top 25th Percentile	Top 25th Percentile
Number of Observations	2950	2950	1160	1160	2119	2119
Number of Failures	2089	2089	742	742	1472	1472

Note: Robust standard errors clustered at the facility level are computed in parenthesis. \* significant at 10% confidence level, \*\* significant at 5% confidence level, \*\*\* significant at 1% confidence level. All results account for right hand side censoring. For our baseline sample an inspector facility pair to be included in the sample they must have both performed at least 25 inspections prior to the inspector being hired. For our less restrictive sample the inspector and facility must have performed at least 5 inspections. For our more restrictive sample the inspector and facility must have performed at least 100 inspections.