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THE STRATEGIC MANAGEMENT OF THE ENTITLEMENT PROCESS IN THE EMPLOYMENT RELATIONSHIP

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Over time, members of organizations develop entitlements—preferences about how they wish to be treated and beliefs about how they should be treated. The formation of entitlements is an important subject for strategy researchers because employees resist changes that violate their perceived entitlements; thus entitlements constrain an organization's ability to adapt quickly in a changing environment. In this paper, we use psychological research to propose a two-part model of entitlements formation: (i) Preference formation *makes people likely to resist change because preferences adapt to experience, and thus change imposes painful losses; (ii)* Belief formation *leads to* over-entitlement, *and this produces resistance because employees perceive changes to be unfair or unjust. Over-entitlement happens because (a) psychological limitations in judgement and (b) strategic distortions in the character and content of information exchanged in relationships lead employees to perceive their entitlements as richer and more systematic than intended by the organization. Combined, the preference and belief formation processes can produce substantial resistance to change.*

In stable environments firms may have an incentive to allow entitlements to develop since they enhance employee security and commitment. However, in changing environments, entitlements constrain firms' ability to mobilize resources to meet competitive challenges. After presenting our model of entitlement formation, we use the model to organize and analyze a set of suggestions about how the employment relationship might be managed to avoid problems of entitlement formation, thus enabling firms to adapt more effectively in a dynamic environment.

INTRODUCTION

In the employment relationship, as in all relationships, we develop expectations about the relationship. We learn what the other party expects us to contribute and we develop notions about what we should receive in the relationship. These implicit or explicit expectations constitute the perceived contract in a relationship, and the benefits we believe we deserve under the contract constitute our *entitlements*.

Key words: Entitlements, loss aversion, behavioral decision theory, communication, incomplete contracts

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The formation of entitlements is an important subject for strategy researchers because entitlements constrain the ability of organizations to adapt to new competitive situations. Because employees resist changes that violate their perceived entitlements, if entitlements are not aligned with business needs then organizations will experience a substantial constraint on their ability to deploy the talent and attention of their workforce.

Conventional wisdom holds that the current business environment is becoming more dynamic and competitive, and that in response, organizations must be better able to learn and adapt to their experience in order to survive (Senge, 1990; Garvin, 1993; Guest, 1986; Beer, Eisenstat, and

Spector, 1990, Lawler, 1992). In dynamic environments, it is more important to effectively manage the entitlements formation process because the ability to move quickly and deploy resources freely becomes an important source of strategic advantage. For organizations to respond quickly, employees must be more flexible in their work styles and tasks, must respond appropriately when incentives change, and must be willing to absorb more fluctuations in rewards as the environment changes.

In this paper, we present a model of entitlements formation. By understanding how entitlements are formed, we can better understand resistance to change, and also better understand how to preserve flexibility and adaptability. While the problems of organizational change have been extensively discussed, the emphasis has typically been on managing one-time transitions. These models take a reactive rather than a proactive stance toward resistance. When changes occur more frequently, it may be more effective to short-circuit the entitlements formation process and avoid resistance from the start. In this paper, we use the model of entitlements formation to suggest not how resistance might be overcome, but how resistance might be avoided.

This paper is complementary to other strategy research on information processing and rent-seeking. We focus on the information processing strategies that employees use to understand their entitlements. In one way, our work concerns rent-seeking, or value-creation, in a *factor* market—the market for labor—rather than rent-seeking in product markets. However, at another level, our comments on managing the entitlements process concern the firm's ability to keep its workforce motivated during times of change, which is essential to carry out the search for product market rents. We think of our approach as strategic because many important modern strategy studies focus on relations with customers or suppliers; we turn these focuses inward, toward the firm's relations with its workers as suppliers of labor.

AN OVERVIEW OF THE MODEL

Underlying any employment contract are basic notions of employee motivation. Both expected utility theory in the economic literature and expectancy theory in the psychological literature (Vroom, 1964) assume that employees are willing to take action when they expect that those actions will lead to a particular outcome that they find intrinsically or extrinsically desirable. Under these descriptions of employee motivation, the employment contract defines what actions the employer expects from the employee and what intrinsic and extrinsic benefits the employee expects from the employer (Rousseau and Parks, 1992). In an ideal world such a contract would completely describe the expectations of both parties in all relevant states of the world. Of course, bounded rationality prevents such contracts from being formed. Instead, employment contracts are incomplete, and each side fills in missing information as best they can.

In the next section, we present a model of how employees fill in gaps in the explicit contract to form perceptions of their entitlements. We also describe how the entitlements formation process can lead to resistance to change. Our model has two parts, one describing how preferences are formed, and one describing how beliefs are formed. First, in describing the preference formation process, we argue based on the psychology of preference formation that people adapt to their experience (Kahneman, Knetsch, and Thaler, 1990; Zajonc, 1980), and that the pain of a loss from a *status quo* is much more painful than an equivalent sized gain is pleasurable (Kahneman and Tversky, 1979). Since change typically involves a loss, or a mixture of painful losses and less-pleasurable gains, people will tend to resist change. Second, in describing the belief formation process, we argue that because of systematic biases in the psychological process of belief formation by employees, and because of strategic distortions in the content and character of information offered by the organization, employees will typically come to see their entitlements as richer and more systematic than would a neutral observer. In turn, employees will resist changes, not only because they are painful, but also because they will perceive the change to violate the implicit contract, and thus to be unjust or unfair.

Our definition of entitlements as 'the benefits that people believe they deserve under the implicit contract' highlights the fact that entitlements are beliefs, and it may seem unnecessary to include preference formation with belief formation as part of the entitlements formation process. We do so because preference and belief formation are confounded in most situations. On average, people develop beliefs to justify the things they prefer. It would provoke cognitive dissonance (Festinger, 1957) for people to prefer something they do not deserve, and therefore at the same time their preferences adapt to experience, people also tend to develop beliefs to justify their preferences. Secondly, people try not to develop preferences for things they believe they do not deserve or things that will not persist. For example, people may not allow their preferences to adjust to unexpected or unusual benefits (e.g., Kahneman and Thaler, 1991). Thus, we believe that preferences and beliefs will be highly related in most situations, and therefore find it useful to consider preference formation as a part of the process of entitlements formation.

In a stable environment, the entitlement formation process will not cause problems and will perhaps add value to the relationship, giving people a sense of security and comfort. However, in a dynamic or changing environment, entitlements formation will make it difficult for relationships to change. When change occurs, one party is likely to accuse the other of misrepresentation or unfairness, and resist the change. After presenting the model of the entitlements formation process, we use the model at the close of the paper to suggest ways organizations might manage entitlements formation to produce more flexibility in the work relationship. For example, if people develop a preference for the *status quo* (their current salary, responsibilities, etc.) and resist switching, it may help to make the *status quo* less salient. Current moves toward 'broadbanding' in job titles seem to do precisely this by reducing the number of job titles available in the firm and thus making it easier to move people from job to job without a perceived 'loss' in status when titles change.

THE ENTITLEMENTS FORMATION PROCESS

Preference formation

People often experience change as painful. We suggest that change is painful because preferences adapt to experience and because losses from a *status quo* are heavily penalized.

In search of simplicity, economic literature typically assumes that preferences are exogenous and stable. While we assume that preferences are endogenous and unstable, we assume they adapt to experience in a simple and predictable way: people come to prefer what they experience and they learn to like what they have (Zajonc, 1980; Thaler, 1980). Preference adaptation may occur for almost any aspect of experience as long as it is initially neutral or positive (tasks, perks, monetary benefits, status). This assumption is not new—it is implicit in much work on inertia in the face of change, and certain economic models (Constantinides, 1990; Cyert and DeGroot, 1987). However, over the last few years, researchers have made progress in understanding the magnitude of the effects and in modeling the phenomenon (Tversky and Kahneman, 1991).

Preference adaptation is troublesome when change is necesary because of another principle of psychological value: losses are more painful than gains are good (Kahneman and Tversky, 1979). A variety of evidence indicates that losses (cost increases, benefit decreases) are about two times more painful than gains are pleasurable. For example, in laboratory settings which eliminate incentives to price strategically, the owners of an item typically request about twice as much to give something up as a neutral observer is willing to pay to acquire it (Kahneman *et al.*, 1990). It is remarkable that this 'endowment effect' (Thaler, 1980), is easy to produce in laboratory experiments simply by giving people mundane consumer goods like coffee mugs or pens. Loss aversion is likely to be even more salient for more meaningful goods like job tasks, titles, or benefits.[1]

Loss aversion makes change difficult at the frontier—after preferences adapt to a current state, it takes a large increase in benefits on one dimension to compensate for a sacrifice on another (Tversky and Kahneman 1991). Imagine, for example, an employee who is indifferent between two jobs at the time he or she is hired. One job (Job T) offers greater travel opportunity (a feature that this employee values) and another job (Job P) offers slightly more pay. After

[1] Most researchers treat loss aversion as a relatively physiological phenomenon, but it is clear that other cognitive or social factors may exacerbate the effect (e.g., dissonance- Festinger, 1957).

accepting either job, the combination of preference adaptation and loss aversion implies that the employee will resist a move to the other job that he or she previously found equally attractive. Before employment, the two jobs were equivalent because gaining an opportunity to travel was just as attractive as gaining some additional pay. After taking the job with more travel, giving up the travel would be a loss, and that loss will outweigh the gain of the extra salary associated with Job P. After taking the job with the higher salary, the loss of the extra salary could not be overcome by the possibility of gaining extra travel offered by Job T. When organizations are left to offer people trade-offs at the frontier, employers may find their employees are surprisingly unsatisfied with the menu of options offered to them.

Because preferences adapt to experience, and because losses impose relatively heavy hedonic penalties, change will typically be unattractive. Change is more painful when people have more time to adapt to and enjoy the *status quo*. The more features of their experience that they like, the harder it is for any change to leave them better off and the greater the potential for change to harm them.

Belief formation

The pain associated with change sets the stage for resistance. However, people are more likely to resist changes that are perceived as unfair. Researchers in procedural and distributive justice have pointed out that people care a great deal about the fairness of outcomes: they withdraw their enthusiasm and commitment from relationships they perceive as unfair (Greenberg, 1988), they actively resist unfair changes (Bies, 1987), and they are even willing to sacrifice personal gain to sanction those who are unfair (Kahneman, Knetsch, and Thaler, 1986; Lowenstein, Thompson, and Bazerman, 1989). In order to predict whether people will treat change as an unfair violation of an entitlement, we must understand what people *believe* they are entitled to under the contract.

Helping people form accurate beliefs about their entitlements would be easy if complete contracts could be written. However, as we mentioned earlier, complete contracts are impossible to write because people are boundedly rational: their foresight is incomplete and the task of imagining and reconciling all potential problems exceeds their patience and mental facilities.[2] Instead, contracts tend to be loosely defined and people develop beliefs about the contract over time. We suggest that this process of belief formation is likely to lead to *over-entitlement*—that is, people will perceive their entitlements as richer and more systematic than would a neutral observer. When change takes place, over-entitlement will lead people to feel that the implicit contract has been violated, and will cause them to perceive changes as unfair and unjust.

In this section, we will consider two major reasons for over-entitlement. First, over-entitlement occurs because people are cognitively and motivationally predisposed to form positive views of the content and stability of the employment contract. Second, over-entitlement occurs because the dynamics of relationships may lead organizations to transmit only positive information about the status of the relationship. Each of these biases—one driven by an incomplete process of inference on the part of individual employees and one driven by incentives to distribute overly positive information on the part of organizations—work to ensure that employees will expect their outcomes to be more positive than they are likely to be. People will see themselves as more secure, more valuable, and entitled to more benefits than they should based on an objective observers' view of their history or of their current environment. Because of these perceptions, change is likely to be surprising and negative, and is likely to leave people feeling that the relationship contract has been violated.

Over-entitlement due to the psychology of belief formation

In this section, we examine how the psychology of belief formation may lead to over-entitlement. We argue that the way that people form beliefs will lead employees to see their entitlements as

[2] There is a significant amount of theoretical research studying the impact of incomplete contracts on the structure of economic relationships. The works of Coase (1937), Williamson (1985) and Klein, Crawford, and Alchian (1978) are among those credited with motivating this research. Our interest is in the *behavioral* implications of incomplete contracts within the employment relationship.

richer and more systematic than intended by their employers.

Richer

Perceived entitlements will be rich, for example, because people typically believe that they contribute a great deal to their relationships, and in turn believe that they deserve equal contributions from the other party. However, people are likely to have an exaggerated view of what would constitute an 'equal' contribution from the other party, since they are aware of and remember each of their own contributions to a relationship, but are not aware of, nor do they remember, each of the contributions of their partners. Empirical evidence shows, for example, that if you add up individuals' perceived contributions to joint products, the total generally exceeds 100 percent (Ross and Sicoly, 1979); this is true for spouses' reports of their contributions toward housework and for academics' contributions to scientific papers. In a world where exchanges are largely premised on reciprocity or equity (Walster, Walster, and Berscheid, 1978), peoples' tendency to over-estimate their contributions may lead them to expect a great deal from the other party at exactly the same time that the other party is expecting a great deal from them.

Perceived entitlements will also be rich because people tend to use their knowledge of themselves to fill in gaps in their knowledge of others. In the absence of concrete information to the contrary, people tend to assume that others see things like they do and that others value the same things that they do (Ross, Greene, and House, 1977). These tendencies may lead people to overestimate the amount of motivation and knowledge they share with the other party in a relationship. On average, people will expect their companies and their superiors to agree with them on what projects should be done, how they should be done, and what benefits they should receive for doing them. Their expectations are likely to be overly positive since the actual desires of their partners will often diverge from their own.

Systematic

Entitlements will be more systematic than they should be because people may not anticipate exceptional situations where entitlements might change, and because they may not recognize exceptional situations when they occur. Due to limited information processing ability, people will generally not anticipate all the unusual situations that may arise in the course of a relationship—people typically have limited time to consider all possible alternatives and limited ability to imagine them (Simon, 1947). For example, people tend to treat very low probability events as impossible and very high probability events as being certain (Kahneman and Tversky, 1979). Although any individual low probability event will not occur very often, the combined portfolio of unlikely events leads people to experience a large number of surprises. For example, across a number of domains, when people are certain that they are right about a piece of information or about their prediction of an event, they are actually wrong about one time in five (Fischhoff, Slovic, and Lichtenstein, 1977). In addition, for strategic emotional reasons, people may be particularly unwilling to imagine negative events. People typically assume that bad events are relatively unlikely to happen to *them* (Taylor and Brown 1988); for example, people say that they will be less likely than their peers to have an automobile accident, become the victim of a crime, have trouble finding a job, or become ill or depressed. Because they do not think about all possible states of the world (and especially because they do not think about negative states), people may not have an adequate picture of the conditional nature of their entitlements.

Entitlements may also be overly systematic because people may assume too much consistency in the actions of others or the environment. In analyzing the world, people typically assume that the world will act as it did before (Kahneman and Tversky, 1973). In analyzing their relationship partners, people tend not to focus on aspects of the situation that caused their partners to act in a particular way, and tend to attribute actions to personality or traits rather than to the situation (Jones and Davis, 1965, Ross, 1977). This may lead people to overestimate the amount of consistency in other's behavior since they do not process the root causes of that behavior. If behavior is driven by personality, it will be stable, if driven primarily by situations it will change when the situation changes. For example, this principle says that employees who join a major accounting firm in the fall are likely to attribute a relaxed work environment to the attitude of their boss or the culture of their company. When tax season approaches, they may be shocked and disappointed to find that their 'mellow' boss (or company) has suddenly become frenetic and demanding. Because they believe the world will be consistent, people may also not develop an adequate understanding of the conditional nature of their entitlements.

Perceived entitlements may also be too systematic because limited information processing may prevent people from recognizing exceptional situations when they occur. Since limited information may lead their picture of the world to be over-simplified, instead of recognizing the nuances of changing circumstances, people may see a great deal of similarity between discrepant situations. Since similarity judgments underlie many judgments of fairness—if one situation is like another then the same rewards ought to be given, the same procedures followed, the same options granted—people with an overly-simplistic picture of the world may feel that they have been treated unfairly if they do not receive the same treatment in two situations that they perceive as similar (e.g., Levinthal, 1975). Thus, perceived entitlements will be overly systematic, not only because people may not anticipate exceptional situations, but also because they may not recognize them when they happen.

Based on psychological research on learning and judgment, we have suggested that belief formation will lead to *over-entitlement*—people will perceive their entitlements as richer and more systematic than would a neutral observer. This process of belief formation is likely to cause problems in dynamic relationships. For example, since people assume that others share their picture of the world and have the same standards of correct and adequate behavior, when people are disappointed by their relationship partner, they may suspect that their partner's motives are impure rather than the partner's picture of the world is different. If I believe that my partners see the world like I do, then they could only disappoint me because they lack concern for my feelings, or even worse, because they are *intentionally* disdainful or dishonest (Kramer, 1993).

Over-entitlement as a result of strategic information flows

The problems above arise from errors of inference and learning on the part of employees. In this section we argue that employees may have inflated expectations about their employment contracts as a reasonable response to biased information they receive from their employer. Employers may strategically misrepresent information to their employees in an attempt to maintain employee motivation. Broadly speaking, this misrepresentation may occur at two levels—at the upper levels of the firm where decisions are made about the strategic direction of the firm and how resources will be allocated, and at the lower levels of the firm where employees receive feedback about their individual performance.

At the upper levels of the firm, top management has private information about how they intend to allocate resources across the firm in the short and long term. Depending on how and whether this information is conveyed, employees may develop a false sense of security from observing the actions of the firm. Consider a generic firm which can find itself in three possible states: a *status-quo* state which requires no change in the firm's activities, a bad state which requires cutbacks to be made (e.g., a significant and permanent fall in demand) and a danger state, which indicates that cutbacks might have to be made if the state persists (e.g., a small drop in demand which may or may not be permanent). For simplicity, we assume that upper management can distinguish all the states of the world, while employees are be able to make only partial distinctions. As discussed in the previous section, limited information processing ability is likely to cause employees' picture of the world to be over-simplified.[3] For example, employees may be able to distinguish major differences between states, like differences between good situations and situations that are not good, but have difficulty distinguishing subtle differences, like those between danger states and bad states (e.g., between temporary and permanent falls in demand).

While the occurrence of a danger state makes a bad state more likely, upper management may have an incentive to avoid taking action during

[3] Anecdotal evidence and theoretical arguments (Zajac and Bazerman, 1991) point out that upper managers are subject to the same kinds of psychological distortions. In the current argument, we only need to assume that upper managers have a slightly more complex picture of the world than employees.

a danger state. For example, the firm may avoid making temporary layoffs since the layoffs would decrease the remaining employees' sense of security and thus their level of effort (Brockner, 1988).[4] By not responding to a danger state, the firm keeps employees from becoming anxious or discouraged, and focuses their efforts on the task at hand rather than on looking for alternative employment. However, by not taking negative actions in the danger state, employees may assume that the firm will not take negative actions in 'similar' states in the future. Because they cannot distinguish danger states from bad states, the firm's lack of action in the danger state leads employees to misperceive their stability. If the firm is eventually forced to take action (when the danger state develops into a bad state), employees will view it as a violation of the employment contract because from the employee's view, the current situation is no different than previous situations where the firm did not take action.

In the Appendix we show how this kind of information omission might be modeled in a rational game-theoretic setting. In the model in the Appendix, employees know that they may be in a danger state, but do not reduce their effort because they know that management has an incentive to take the same action in both the *status-quo* state and the danger state. Thus, even though employees know their perceptions might be wrong, they retain their current beliefs because they don't know for sure whether their perceptions *are* wrong. Although this model can effectively capture the firm's incentives to distort communication, it is difficult to model over-entitlement using game-theoretic models. These models assume mutual rationality—workers *understand* the firm's incentives to distort information. In the behavioral model we present, employees react negatively to changes because their picture of the world is overly-simplistic, and changes come as a surprise. Because the rational model does not allow employees to be surprised, in order to get over-entitlement, we have to add the assumption that employees believe that management is obligated to take the same action in the future that they took in the past.

Thus, strategic information withholding can lead employees to believe they are secure under the current contract, when in fact they are not. The firm creates these beliefs by effectively ignoring the existence of danger states through their lack of action in those states. In the long run, this practice causes workers to resist change because workers believe they are entitled to be treated today the same way they were treated in the past. Employers may not only be tempted to withhold information, they may also actively bias their communication in a way that leads to increased entitlements. To ensure the commitment of workers, employers may, for example, paint an overly rosy picture of the likelihood that a factory, work group, or company unit will exist in the future.

At lower levels of the firm, misrepresentation may also lead employees to feel overly secure. Consider, for example, the relationship between an employee and the supervisor responsible for evaluating his or her performance. To preserve employees' commitment to, and enthusiasm for the job, supervisors may be reluctant to give workers negative feedback about their performance,[5] and in the extreme, may be prone to give overly positive feedback. Supervisors may also give positive feedback to preserve the social harmony of the relationship—relationships are more pleasant when the parties in the relationship value each other. Social norms are designed to preserve signals of respect and liking even when people do not respect or like each other. To the extent that supervisors do like the people they supervise, it is natural for them to hedge criticisms.

Combined, the desire to be nice and the desire not to damage commitment or enthusiasm lead to striking biases in communication. This bias manifests itself in the well-known tendency of supervisors to give compressed performance rankings. For example, Merck & Co. reported

[4] Some evidence suggests that the effort effect can go both ways (Brockner *et al.*, 1992). Companies tend to report that morale falls after cutbacks are made, but some companies report that employees work harder, hoping to keep their jobs. In either case, managers express reluctance to take any actions which might lead to a decline in morale (Bewley and Brainard, 1993), so managers' stated predispositions are consistent with those we assume in the model.

[5] For example, Tesser and Rosen (1976) document that people are reluctant even to *pass along* bad news to the person affected by it. The situation is even more difficult for supervisors who are responsible for the negative feedback.

that, on a 5-point scale where five indicated superior performance, 93 percent of the work-force was given ratings from 3 to 4+ (Murphy, 1991). These compressed ratings fail to adequately inform employees how management views their performance under the employment contract. Moreover, in a time of change when the organization is forced to reallocate rents, it will be difficult to use past performance as a fair criteria to redistribute rents.

Thus in this section we have argued that communication biases may lead to over-entitlement. Upper management has an incentive to distort feedback about the stability of the environment; supervisors have an incentive to distort feedback about individual performance. Because of these biased communications, employees may develop overly optimistic expectations about the stability of the world and about their importance to the organization.

Why aren't the mistakes repaired?

Our description above paints an extreme picture of the potential distortions in psychological contracts. Our model argues that the psychology of belief formation and the strategic nature of communication lead employees to feel overly entitled to benefits. It would be legitimate to ask how this effect could persist over time. Why do employees not realize that their pictures of their entitlements are exaggerated and overly systematic?

The first answer is that the environment is a difficult one to learn in. As the last section discussed, the social environment often dedicates itself to conveying misleading feedback. Also, the events that would require updating are typically rare. Situationally, since change events are typically unusual, people may 'learn' from their experience that they are relatively safe and secure: 100-year-floods occur, on average, only once every hundred years, and bankruptcies usually occur only once in the lifetime of a company.

The second answer is that people may not be aware of the limitations in their assumptions. The same information processing limitations that produce systematic positive errors in perceived entitlements may also hinder people from realizing the extent of their assumptions. Although they are likely to have an over-simplified picture of the contract, people may assume that their picture is accurate and complete. People are frequently unaware of the assumptions they are making (Nisbett and Wilson, 1977), and as a result they have difficulty diagnosing the source of problems when they take action based on a mistaken assumption. For example, even experts, when asked to examine a fault tree which lists all the likely causes of a certain event (e.g., asking auto mechanics to critique a list of all the potential reasons a car might not start) tend to focus on the information at hand, and fail to notice what is missing (Fischhoff, Slovic, and Lichtenstein, 1978). When people are not aware of their mistakes in belief, they may not take adequate care to elaborate the contract or to respond to information in the environment.

The third, and perhaps most important, answer why errors will not be repaired is motivational rather than cognitive; people may not be motivated to find out about limitations in their perceptions of the contract. In stable environments, over-entitlement is not dangerous, and in fact may be helpful. Our lives are more pleasant when we can imagine that bad things are unlikely to happen to us, that our relationship partners share our thinking about important events, and that we contribute our fair share (and perhaps more than our fair share) to our relationships. It is also pleasant to receive feedback from others that we are valued and that our work is competent and important. However, in changing situations, these beliefs create unrealistic expectations and these unrealistic expectations may make us less willing to adapt to changing circumstances.

Resistance to change

In general, the process of entitlement formation will cause difficulty for organizations because it leads to substantial resistance to change. The model of entitlement formation points out two reasons why change will be resisted. First the preference formation process points out that change will generally be painful. Preferences adapt to experience, so we come to prefer the *status quo*. Since change typically imposes losses on some dimensions, change will typically be a negative experience because the psychological utility function penalizes losses more than it rewards gains.

Second, change will be resisted because the belief formation process will lead people to see change as unfair. Because people's view of their entitlements will be overly rich and systematic, when a painful change causes people to reexamine their relationship, they are likely to conclude that changes are wrong or unfair. Since their view of the psychological contract did not anticipate the changes, either the previous relationship was 'misleading' or the changes by the other party did in fact violate the contract. In reaction to the perceived violations, people will withdraw their commitment and enthusiasm from the relationship, and may actively resist the efforts of the unfair partner (Bies, 1987). Indeed, when treatment is viewed as sufficiently unfair, the most committed people are likely to have the strongest negative reactions since their identity is most invested in the relationship (Brockner, Tyler, and Cooper-Schneider, 1992).

In our model of entitlement formation, the preference formation process leads people to experience change as painful, and the belief formation process leads people to perceive changes as unfair. Thus, we assume that people will resist change because changes will typically pile insult on injury—over-entitlement will cause people to see changes as insulting and unfair, loss aversion will cause people to experience changes as injurious and painful. Combined, the preference and belief formation processes produce substantial resistance to change.

APPLICATION OF ENTITLEMENT FORMATION TO DYNAMIC ENVIRONMENTS

In this section we exercise our model of entitlement formation by suggesting some ways to manage entitlement formation in dynamic environments. When researchers talk about organizational change, they are often referring to a one-time change at a discrete point in time, in which the organization makes a transition from one stable state to another. Kurt Lewin's metaphor for the change process is often invoked: the change agent must 'unfreeze' a current behavior, 'change' the behavior to the preferred behavior, and then 'refreeze' the new behavior (Lewin, 1947). In this section we explore the problem of managing entitlements formation in a dynamic environment where an organization is not looking at a *one-time* change or transition, but faces a need to *continually* adapt in a changing environment. We thus explore ways to prevent behavior from refreezing in a state that will later have to be modified again.

Whether or not the reader chooses to believe (according to the conventional business wisdom cited in the introduction) that the current business environment is more dynamic than before, the recommendations below will be useful for managing dynamic environments wherever they are found, for example, in industries or competitive contexts where change is more salient and frequent, or within a firm for employees who experience frequent change: e.g., employees that are on a development path that will involve a number of short-term assignments.

In general, entitlements formation can be addressed by addressing either component of entitlement formation: organizations can attempt to manage *preference* formation and/or *belief* formation. We will propose specific examples to illustrate how each aspect of the process could be managed. Most of the examples are not novel—they have been proposed in either the popular management literature or the academic literature. However, the model of entitlement formation provides a useful psychological foundation to organize a number of suggestions from diverse domains, and to understand why individual proposals may be psychologically sound.

We also note here that while these following examples demonstrate ways that organizations might overcome problems of preference or belief formation, each 'remedy' carries its own costs. In deciding whether to implement these suggestions, organizations must weigh the benefits of managing preference or belief formation against other psychological or administrative costs.

Managing preference formation

Preference adaptation causes people to experience changes in benefits as a loss. If benefits are managed correctly, it may be possible to award benefits *without* having preferences adapt to those benefits.

We will discuss two potential situations where explicit process management may prevent preferences from adapting to benefits. First, people may not adapt to benefits that are segregated in a separate mental account. For example, it is probably substantially less painful to lose a 'bonus' than to lose an equivalent fraction of base salary (Kahneman *et al.*, 1986). Second, people may not adapt to benefits that are not salient. Since people may experience a loss when any concrete feature of experience (e.g., a title) disappears, one way of avoiding losses is to avoid creating or calling attention to such features (e.g., emphasizing the importance of titles).

Segregating benefits

One way of managing the preference adaptation process is to encourage a process that occurs naturally—the tendency to separate out resources into separate mental accounts (Thaler, 1985). Even when resources are highly fungible, people react differently to different resources, for example, people exhibit a high propensity to consume regular income but a low propensity to consume income from investments or home equity (Shefrin and Thaler, 1988). In order to prevent preference formation, organizations may want to take care to encourage this process by helping people to segregate idiosyncratic or infrequent benefits.

When people separate out a novel benefit into a separate mental category, their preferences may be less likely to adapt to that benefit. Because preferences do not adapt, people avoid a negative contrast or loss when the benefit diminishes or disappears. For example, Kahneman (1992, Kahneman and Thaler, 1991) suggests that cultural norms succeed in managing preference adaptation and contrast effects by creating a class of 'special' occasions which allow extravagant consumption. By labeling an occasion as 'special,' and thus mentally segregating the benefit, people may be able to enjoy a birthday meal or anniversary celebration at a great restaurant without diminishing their enjoyment of their next dinner out at an average restaurant. By highlighting the unusual status of a 'special task force assignment,' employers may be able to temporarily reward an employee with a more interesting task without decreasing the employee's enjoyment of the regular job once the task force assignment ends.

By encouraging people to mentally segregate benefits, an organization can help people resist developing preferences for those benefits. One organization with a substantial international business has a special benefits package that is awarded to staff when they are away from their own country. The package includes tax compensation, ex patriot pay boosts, and additional travel allotments for travel to and from their home country. The organization's strategy for minimizing endowment and contrast effects is to take great care to label the extra benefits as the '*International Staff* Benefits Package,' and administer that package separately from the normal salary and benefits of employment. Human resources personnel hold pointed discussions with new international staff distinguishing between the International Staff Benefits Package which will disappear when the employee returns home, and the regular benefits package which will continue. The discussions are not entirely successful—the company complains that it remains difficult to get people to rotate back to their home country after experiencing the rich benefits package. However, the example does point to steps that might make it possible to grant special benefits while mitigating the possibility that those benefits will automatically be added to an endowment.

The current move to increase the amount of pay awarded in the form of bonuses provides another example of a management approach that may successfully manage preference formation. There are many reasons for this move other than managing preferences. In a world of flatter organizations, promotion opportunities may no longer be available to provide appropriate incentives to employees, and organizations must reward performance in a more immediate way than the old system which tied increased pay to promotion up the hierarchy to better-paying jobs (Baker, 1990). Bonus systems tie pay to performance more effectively, providing immediate rewards for appropriate behavior (which may change rapidly as the environment shifts) without tying the organization's resources to an outdated incentive system.

Despite these other advantages, perhaps the most compelling arguments for bonuses are derived from psychological observation (Kahneman and Thaler, 1991). There is evidence that bonuses have a different mental accounting status than regular income. For example, bonus money is more likely to be saved than regular income, even when it is awarded consistently in consistent amounts (Ishikawa and Ueda, 1984). Given that bonuses seem to be psychologically separate, bonuses may allow the organization more flexibility than increases in base salary (merit increases, etc.) because they do not commit the organization to a continued stream of pay. Increases in base salary are very likely to be added to a person's endowment, and therefore reductions in base salary are likely to be treated as a loss. Many observers have noted that nominal wages are sticky downward (Blinder and Choi, 1990). However, the magnitude of the phenomenon is surprising. In a recent study of employees at a large firm (Baker, Gibbs, and Holmstrom, 1993), 20 years of data involving 49,276 salary changes recorded only 25 observations where employees received a nominal cut in wages.

If bonuses are mentally segregated, it may be easier to award and remove them than to award and remove increments to base salary. Instead of experiencing a loss (as would an employee if salary were cut), the employee merely experiences the reduction of a gain, an experience which is psychologically much less painful (Kahneman and Tversky, 1979).

Bonuses are not a cure-all. If the process is not managed properly, people may adapt to the income associated with bonuses, and treat the absence of a bonus as a loss instead of a foregone gain, producing the same difficulty as changes in base salary. Officials at one large financial institution say that employees reacted very negatively to a decline in ESOP earnings during a period of organizational distress—they had been treating the ESOP earnings which were prorated and placed in their paychecks as a part of their salary. By not effectively segregating the ESOP earnings from the regular paycheck, the company made a strategic mistake in allowing the employees to integrate the bonuses into their endowment.

Perhaps the most difficult part of managing bonuses is that beliefs must be managed more closely. Because bonuses tie pay more explicitly to performance, organizations must work very hard to make sure that employees understand the mapping between the reward and their activities. If, as we argue, people's model of the relationship is oversimplified, employees may not discriminate between situations where they should receive the bonus and situations where they should not receive it. People in organizations are often quite unwilling to sacrifice their bonuses when their unit or organization is doing poorly—they reason that they have been doing 'their job' and are relatively unwilling to sacrifice because another group has been doing poorly. In addition, because people are aware of their own contributions and not those of others, people may frequently believe their bonus is inadequate given their evaluation of their own performance vs. others'.

Making the status quo *less salient*

A second strategy to manage preferences is to avoid drawing employees' attention to aspects of the environment that may change and to avoid enriching the environment with features that might disappear at a later time. The existence of a special title, special service, or special program may draw people's attention to aspects of the social environment that they wouldn't have noticed otherwise. Once they notice, then they experience a loss when the title, service, or program disappears. These issues are particularly acute with symbols of status, since organizations have a strong ability to attach status to many features of the environment.

Many companies, for example, complain that it is difficult to get people to make 'lateral' moves that might broaden their experience and increase their long-run qualifications for senior positions (Jones, Braddick, and Shafer, 1991). They complain that people resist moves because they are too sensitive in the short run to subtle differences in the status of job titles. There seem to be two main reasons for employee resistance, first, the 'career ladder' focuses people on moving upwards, and accepting even a completely equivalent position and title may be a loss relative to aspirations; second, because titles make so many fine distinctions, it is difficult to find another job title for a 'lateral' move that is in fact psychologically equivalent.

In response to this problem in mobility, some companies are reclassifying job titles into a few broad bands (Jones *et al.*, 1991). Typically, the number of titles under 'broadbanding' are reduced by one half to two-thirds. For example, a firm with 10 salary ranges, each with an associated title, would reduce its number of salary ranges (and titles) to five. Each of these new ranges would have a much greater spread between the minimum and maximum salary levels within the band (the goal is not to minimize salary spread, but to divorce salary from titles). One of the primary goals of broadbanding is to increase the level of employee mobility and skills acquisition. By reducing visible job classifications, it is possible for people to move from job to job without worrying about a 'loss of status' because of the change in title.

While broadbanding is consistent with managing preference formation, note that our model of entitlement formation indicates that this organizational change will be difficult to accomplish in companies that have historically had more titles. In these companies, reducing job classifications will deprive some employees—those who formerly had titles in the top half of the revised band—of part of their perceived entitlement. One company that we know reported broad resistance to broadbanding by employees with higher than average job classifications. These employees perceived that their position in the firm had been devalued, and hence that they had lost a benefit they had worked hard to obtain.

Managing belief formation

The section above gave two general kinds of suggestions about how to manage preference formation. The section below suggests two general ways to manage belief formation: (1) through explicit up-front analysis and negotiation, and (ii) through greater attention to ongoing communication.

Better up-front negotiation

The most frequently suggested remedy to the problems of belief formation is to solve the problem up front by making expectations, duties, and costs more explicit and by addressing and reconciling potential problems. Advice to soon-to-be-married couples includes recommendations to explicitly discuss topics that are common sources of disagreement (e.g., finances, child-rearing practices). Human resources guidebooks typically specify explicit policies for a class of topic areas (absences, health days, paid and unpaid leave) which seem likely to cause problems. Explicit discussions clarify otherwise-ambiguous terms of the employment contract, and thus make it easier for employees to learn about the work relationship and harder for employers to misrepresent the relationship.

Evidence indicates, for example, that 'realistic job previews,' which accurately describe the negatives as well as the positives of jobs, actually reduce turnover (Premack and Wanous, 1985). Because they explicitly clarify the content of the job for prospective employees, employees may better manage their own process of preference formation—learning not to treat unusual benefits as expected or unusual negatives as habitual. Because negatives are anticipated, setbacks are less likely to cause employees to reevaluate the relationship. The fact that Realistic Job Previews reduce turnover implicitly indicates that strategic information withholding does take place—employers must make specific plans to convey negative information.

Explicit discussions are a reasonable solution when it is possible to identify potential problems and establish procedures to solve them. However, it is not possible to resolve all problems up front because of the limitations in foresight discussed earlier. When people systematically ignore low probability events or events with negative payoffs, contracts will remain incomplete. It is even harder for people to write a complete contract in a dynamic environment, since the complexity of the environment makes it more difficult for people to imagine all contingencies and decide on appropriate actions.

Another way to make contracts more explicit, while avoiding the necessity of writing detailed agreements, is to make formal or informal precommitments about the scope and character of the employment relationship that make it more difficult for the organization to strategically miscommunicate. For example, companies may hire employees into a job or a status which makes certain benefits or rewards unattainable; some companies hire contingent workers to avoid the trauma of laying off permanent employees. The strong informal norm against tenuring assistant professors at some universities clarifies the incentives for all parties: a senior professor cannot seduce an assistant professor into heavy committee work by 'promising' that the work will help their tenure case. Economic models have argued that 'up or out' promotion mechanisms are a good way to precontract to award workers their marginal product (Kahn and Huberman, 1988; Prendergast, 1993). These mechanisms may also serve to de-bias the information process.

Another solution that makes contracts more explicit, but that avoids problems of bounded rationality, is to use company norms or value statements to express general guiding principles for the relationship. Cultural norms may provide a way of filling in gaps in the incomplete contract (Kreps, 1984; Camerer and Vepsalainen, 1990). Because they are general, cultural norms will not handle every problem, but they might effectively guide decisions at difficult choice points, providing a coordinating mechanism for firms and employees to renegotiate their understanding of the agreement on an ongoing basis. A company that cannot promise permanent employment might offer 'permanent *employability*'—making a general commitment to develop people so that they are attractive to outside employers if their original employer cannot offer continuing employment. Companies might promise that they will offer employees 'a challenge, not a position.' An expressed concern with 'continuous improvement' might also serve to signal to employees and managers that they should not expect the current job descriptions and tasks to persist over time.

More ongoing information

When contracts cannot be effectively clarified up-front, then organizations must devote more effort to ongoing communication to manage beliefs as the relationship evolves. As discussed earlier, the combination of psychological inference and strategic information flow may lead employees to feel entitled to work at their current pace and enjoy the benefits associated with their current job. Employees generally feel that they are making an important contribution to the organization—researchers have documented that most employees, most of the time, think that they are performing above average (Meyer, 1975).

It is not surprising that employees resist changed or increased job requirements when they think that their performance is already more than adequate. Employees may find it confusing or unjust when they are asked to change what they thought was satisfactory performance. In dynamic environments where required behavior is changing, people may need more explicit and frequent communication to help them modify their picture of the world (McCann and Gilkey, 1988). Because learning new behaviors is difficult, without sufficient warning that their skills or performance are lagging, people may not devote sufficient time and attention to learn new skills or modify their performance.

Our earlier discussion pointed out two areas where strategic information biases exacerbated over-entitlement—at the bottom level of the company where people get feedback on their performance, and at the top level of the company where people get feedback about the stability of the environment. More accurate feedback about performance helps people anticipate what actions they need to take in order to perform well, and allows them to learn what benefits they should expect. More accurate feedback about the environment also helps people think about what kinds of rewards they can expect in a changing environment. Managing belief formation in a dynamic environment requires more careful communication at both levels.

At lower levels

Organizations can, for example, commit to evaluate performance in a veridical or timely manner. For example, at the lower level of the organization, organizations can prevent managers from avoiding performance evaluations by imposing a certain time schedule on evaluations. Many companies, for example, commit to have yearly performance reviews for all employees and more frequent reviews for new employees. Organizations can also take steps to make the content of performance evaluations more veridical. For example, organizations can force managers to use a forced ranking system which makes it impossible for a manager to give everyone positive feedback. Alternatively, firms can make evaluations more veridical by tying certain benefits to evaluations. For example, promotion reviews in academics are typically tied to tenure. The practice of tying benefits to evaluations minimizes the incentives for supervisors to distort feedback because giving an employee an adequate review requires that the supervisor award large benefits contingent on that verdict. Some have suggested that this is one reason that wages may be tied to jobs (Prendergast and Topel, 1993).

Given the magnitude of positive illusions about performance, veridical performance evaluations are likely to contain bad news for most employees. Employees are likely to be demoralized after hearing that their supervisor and their organization feel that they are contributing less than they thought. On average, since employees receive news that is not as positive as they would have expected, feedback forces a negative reevaluation of the relationship, and raises concerns that the evaluator is being unfair. Aware of these issues, supervisors are likely to resist delivering bad news: reducing the positive bias requires evaluators to devote time and effort to make the evaluations more obviously fair (and thus justifiable to the employee) and to manage the consequences of disabused expectations.

Because veridical performance evaluations are difficult to administer, organizations should think seriously about how often and with what level of detail to evaluate their employees. In a stable environment, employees' illusions and management's reluctance to communicate bad news probably do not cause problems—employees feel secure and valued and the firm may be able to carry few marginal performers. In a more dynamic environment, the advantages of giving people more immediate feedback about their behavior may outweigh the disadvantages of disappointment and the high costs of creating an evaluation system that will be perceived as fair.

At upper levels

In a dynamic environment, it is also more important to carefully communicate how the firm stands within its environment. Accurate information about the environment may help employees manage their preferences and beliefs; if, for example, employees know that the company is undergoing difficult times, they may be less likely to develop beliefs that the company owes them promotions and less likely to allow themselves to become comfortable with perks or benefits that may disappear if hard times continue. A variety of evidence indicates that people can manage their preferences and their coping resources more effectively when they have prior warning that an event may happen (Krantz, Grunberg, and Baum, 1985). When bad states occur, employees with an overly positive sense of security will be worse off than employees that had a more realistic notion of their security.

Employers could precommit to share certain kinds of information. For example, opening company books may serve as an early warning system to insure against overly positive information flows. By sharing information on an ongoing basis, companies can insure that they are not tempted to hide information when bad states occur. The continual openness makes information more credible, and provides a reputational incentive for continued openness even in bad states. If the organization commits to convey information, then the absence of the information becomes a clear signal of bad intentions.

The need for more communication creates a dilemma, since there will be many more situations where an organization may experience a loss than situations where the organization actually experiences a loss. Employees who are warned of potential changes may be more willing and able to change when the time comes, but they may also be more stressed on an ongoing basis as they worry about potential changes.

Thus organizations must consider how much information to communicate to employees in 'danger' states. Note that our argument implies that full communication is not always good. In relatively stable, unchanging environments, withholding bad news is probably not a bad strategy—parents infrequently tell their children about all possible dangers in the world, and spouses do not divulge every occasion where they were upset with each other. In a stable business environment, it may be reasonable to allow employees to develop a strong sense of security because the organization will seldom be forced to change in a way that imposes losses on the employees.

In general we can think about two different strategies of communication, paternalistic and communicative. Paternalistic managers shelter employees from bad news and have employees who are overly optimistic about the world. When losses happen that force entitlements to be cut, the employees of these managers will be particularly upset and unadaptive. On the other hand, communicative managers who always inform employees about where the company stands will have less devastated employees in the loss states because they have had a chance to anticipate the bad events, but at the cost of having stressed and anxious employees in many states of the world where bad events *might* happen.

In this section we have suggested two ways to manage belief formation—through better up-front negotiation and through better ongoing communication. In general, belief formation may be harder to manage than preference formation. Belief formation is hard to manage up-front because we have limited abilities to imagine the contingencies necessary to write complete contracts, and it is hard to manage on an ongoing basis because of the disappointment, stress and anxiety that often results from the transmission of veridical information. However, firms in dynamic environments may not have a choice about whether or not to manage beliefs; active management may be necessary to avoid negative reactions from employees who will tend to see changes as violations of the implicit contract.

CONCLUSION: THE DILEMMA OF MANAGING IN DYNAMIC ENVIRONMENTS

Strategy researchers have recognized that the newly dynamic, competitive environment requires organizations and their employees to be more flexible and adaptive. In order to adapt, employees must be more flexible and adaptive. Some have argued that organizations can achieve competitive advantages by changing their management approach to take more advantage of the skills and problem solving abilities of workers (Kanter 1983; Beer *et al.*, 1990).

The management literature over the last few years has noted that companies need to offer a stable work environment in order to encourage employees to respond flexibly and creatively (e.g., Lawler, 1992). The demands on employees in dynamic, competitive environments are high. As Lawler (1992) states, 'High involvement management techniques place substantial demands on employees in terms of their ability to solve problems, contribute to group discussions, and, of course, perform a wide array of technical work-related activities that contribute to the organization's basic effectiveness.' It seems reasonable and fair that in order for employees to be willing to adapt to new roles and to participate actively in the improvement process, companies should offer employees the security of not being fired on the basis of their help in improving a process.

However, it is important to recognize that the demands for adaptability and stability are contradictory—the same dynamic environment that makes it necessary for employees to be more flexible may also make it impossible for companies to offer a stable employment relationship. Dynamic environments require flexible workers, flexible workers require a stable employment relationship, but stable employment relationships may not be possible in dynamic environments.

We have no suggestions for resolving this dilemma, indeed it is probably not resolvable. As indicated by our suggestions in the previous section, we do note, however, that firms will find it more costly to manage the employment relationship in a dynamic environment. While over-entitlement is costly for firms in a dynamic environment because it hinders their ability to change, it benefits companies in stable environments by increasing employees' security. Employees who feel assured about their future with a firm do not have to be paid as much, are more willing to make sacrifices for the firm, and are willing to allow paternalistic managers to withhold information from them. As security decreases in a dynamic environment, companies will have to invest more resources into managing employment relationship. Companies will have to provide more explicit social and monetary insurance against bad changes in the environment. This may involve paying higher wages, bearing costs of general training in addition to company-specific training, or communicating more. In each case, costs will increase.

We have proposed a model of the entitlements formation process that assumes that people will resist change because of preference and belief formation. We also used the model to organize a set of suggestions that organizations might use to manage these processes in a dynamic environment. By better understanding the entitlement formation process, managers in organizations will be in a better position to ensure that their organizations remain able to adapt and change.

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APPENDIX

In this Appendix we show how the strategic omission of information by upper level management discussed in the section on belief formation can occur when employees are rational but not fully informed. We show that there exists a perfect Bayesian Nash equilibrium in which the firm does not reveal its true state, and the employees understand that such a possibility exists. Intuitively, this happens because the firm does not want to reveal when times are 'almost bad' (because employee motivation suffers) and while employees know this they cannot force management to reveal all of their information.

Consider a firm which operates in one of three states—low, medium, and high denoted s_L, s_M, and s_H respectively, for a three period horizon. Let $N_s \in \{N_L, N_M, N_H\}$ be the optimal number of identical workers to employ in each state. The firm's state follows a three-state Markov chain P^3 with positive transition probabilities $p_{s,s'}$, where $s,s' \in \{s_L, s_M, s_H\}$ and P^3 is common knowledge. Furthermore, assume that the firm must pass through the medium state, that is, $p_{HL} = p_{LH} = 0$. For the purposes of this illustration assume that it is common knowledge that the firm is in the high state in period one, but at the beginning of period two the firm has private information about its true state. In each period each of the identical, risk neutral workers selects one of two possible effort levels: a_1 = high effort, where the worker incurs effort cost $c > 0$, and a_2 = low effort, where he or she incurs zero effort cost. We assume that while the workers' effort levels are observable, they are not verifiable, and hence, noncontractible. This requires that the employment relationship be based on self-enforcing implicit contracts.[6] Let W^1 and R equal a worker's wage given effort level a_1 and a_2 in the previous period, respectively, where $W^1 > R$. And for simplicity assume that the wage a worker receives if he leaves the firm (their reservation wage) is equal to R. Finally, assume that $W^1 - C > R$.[7]

A worker's actual wage depends on whether the firm reduces its employment level given a change in state. Since workers are identical assume that the probability of *not* being laid off from a current employment level of N_s to a reduced employment level $N_{s'}$ is:

$$q_{ss'} = \frac{N_{s'}}{N_s}$$

Since the firm is in state H in period one, a worker's expected utility in period two given a high effort level in period one is

$$EW(a_1|H) - c = p_{HH}W^1 + p_{HM}[q_{HM}W^1 + (1 - q_{HM})^R] - c.$$

His expected utility from a low effort level is simply R, since his low effort level wage and his reservation wage are assumed to be equal.[8] Hence, a worker will select a_1 in the high state if:

$$p_{HH}W^1 + p_{HM}[q_{HM}W^1 + (1 - q_{HM})R] - c > R. \tag{1}$$

Equation (1) reduces to:

$$(p_{HH} + p_{HM}q_{HM})(W^1 - R) > C, \tag{2}$$

That is, the expected benefit to a worker from taking the high effort action is greater than the cost. Assume relation (2) holds. Hence, all workers find it optimal to select the high effort level in the first period.

Each worker has beliefs $\mu = \{\mu_L, \mu_M, \mu_H\}$ about the firm's true state in period two, where $\mu_H + \mu_M + \mu_L = 1$. Prior to the firm's employment decision in period two, the beliefs of each worker equal the transition probabilities, $\mu_0 = \{p_{HL}, p_{HM}, p_{HH}\}$. Each worker uses Bayes' rule to update their beliefs after the firm makes its employment decision, and before they select their effort levels. Finally, in period three assume there is no effort aversion problem and workers select a_1.

[6] See MacLeod and Malcomson (1989) for an elaboration of this approach.

[7] A key aspect of this analysis is that a worker's current wage depends entirely on his or her effort level in the previous period. For simplicity we ignore discounting, which has no effect on the results.

[8] Note that by equating the workers' low effort wage with their outside wage the individual rationality constraints and the incentive compatibility constraints are equal.

Our goal is to show the existence of a perfect Bayesian pooling equilibrium in which the firm selects the high employment level in the second period in both the high state and the medium state.[9] In such an equilibrium the workers' beliefs after the firm announces N_H equal their prior beliefs, that is, $\mu(N_H) = \mu_0$. Such an equilibrium requires that the firm's profits from over-employment in the medium state with high effort levels are greater than its profits from employing the 'optimal' number of employees under low effort levels. That is, assume that $\pi_M(N_H|a_1) > \pi_M(N_M|a_2)$.[10] This requires that the workers find it optimal to select the low effort level if the medium state obtains, and in turn requires that the following relation holds.

$$EW(a_1|M) - c = p_{MH}W^1 + p_{MM}W^1$$
$$+ p_{ML}(q_{ML}W^1 + (1 - q_{ML})R] - c < R. \qquad (3)$$
$$\Rightarrow (p_{MH} + p_{MM} + p_{ML}q_{ML})(W^1 - R) < c. \qquad (4)$$

So the expected benefit to a worker from taking the high effort action is less than the cost. Comparing equations (2) to (4) we see that if q_{ML} is significantly smaller than q_{HM} then it is feasible for both of these inequalities to hold. The intuition is that workers face a much higher chance of being laid-off in the low state relative to the medium state, and hence, they do not have sufficient incentive to select the high effort action.

Let EW(H) denote a worker's expected wage from selecting a_1 in the high state (left side of equation [1]), and let EW(M) denote a worker's expected wage from selecting a_1 in the medium state (left side of equation [3]). A pooling equilibrium requires that the workers find it optimal to select the a_1 under beliefs $\mu_0 = \{p_{HL}, p_{HM}, p_{HH}\}$. Since $p_{HL} = 0$, this condition requires equation (5) below to hold.

$$p_{HH}EW(H) + p_{HL}EW(M) < R. \qquad (5)$$

That is, if the worker's prior beliefs, given by the transition probabilities, place sufficient weight on the high state then it is optimal for them to select the high effort action, despite the possibility that the firm is actually in the medium state.

Hence, given the above set of assumptions, a perfect Bayesian equilibrium exists where it is optimal for the firm not to reveal its true state. Workers understand that the firm has an incentive not to reveal such information, but since the firm selects the same action in either state, it is sufficiently likely that they are in the high state to justify selecting the high effort level.

This brief model ignores several important issues. For example, what if the firm simply raises the wage in the medium state to make the incentive compatibility constraint binding? This option is clearly possible in the framework developed above, and this and similar issues are addressed in Knez (1993). But note that raising wages in the medium state (the danger state) implies the firm will want to *lower* wages if it returns to the high state. Empirical evidence, along with the arguments developed in this paper, suggest that this is very difficult for firms to do.

[9] A perfect Bayesian equilibrium is a set of strategies and beliefs such that strategies are optimal given beliefs and the beliefs are obtained from equilibrium strategies and observed actions using Bayes' rule.

[10] Note that we are assuming that the firm's individual rationality and incentive compatibility constraints hold. The important aspect left out here is a punishment strategy that prevents the firm from reneging on its promise to pay a higher wage under high effort in the previous period. This can be dealt with by simply assuming that workers quit if the firm reneges and the firm incurs employee replacement costs. See Knez (1993) for the details.