

Organizational Politics of Prevention

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ABSTRACT

A theory is developed of how, and under what conditions, prevention-oriented organizational practices reproduce and strengthen the political order of organizations. The theory is developed inductively from an analysis of the establishment of prevention-oriented routines in U.S. commercial aviation. The case of aviation shows that, under some conditions, prevention activities can be a solution to problems of political order. Prevention routines can reinforce the authority of state regulators to control daily operations of industry, reduce jurisdictional conflicts between state agencies, increase the power of elites by expanding their fame, and gather power and legitimacy for organizations by embodying the goals of progressive social movements. The implications of this theory are discussed for political theories of organization and the diffusion of effective prevention practices across organizations.

POLITICS OF PREVENTION

The purpose of this paper is to theorize the links between the political order of organizations and prevention. It focuses on how the pursuit of prevention can serve the interests of power by reproducing the institutionalized authority and control systems in organizations upon which that power is founded. In the process it will uncover how the doing of prevention can be motivated by political self-interest of those who hold power in organizations.

While the stated goal of this paper is clear, the justification behind it requires some explanation. It is not obvious that there is a connection between prevention and politics, nor why it is significant, because the political value of prevention has been obscured intentionally and incidentally. Organizational politics in organizations is usually hidden because there is no public, explicit acknowledgment of political processes and structures (Jackall, 1988). Publicly, organizational action and structure is legitimated only when rationalized by a social acceptance of the means and ends (Meyer, 1983; Meyer, and Rowan, 1991; Meyer, 1994), and it is rare that public approval for organizations is in the pursuit of power and order in its own right. The politics of prevention is even less visible, however, because there is no public conflict over the goal of prevention. In general, there is universal support for preventing recurrences of negative events (Douglas, 1992, p. 63). With no interest group bent on preventing prevention, it reduces attention to the political effects of doing prevention even further.

The politics of prevention has also been hidden from scholarly attention because it falls between the separate fields of research on prevention and politics in organizations.

Prevention research has been focused on the immediate goal of identifying and understanding how the goal of prevention is reached or occurs. The additional political effects of doing prevention have understandably been a lower priority than the actual preventing of negative events.

Similarly, political research on organizations has not examined prevention. Instead, that research examines the more vivid political and potentially dysfunctional responses to misfortunes – such as seeking out a scapegoat to blame – rather than on the less visible, and potentially beneficial, politics of responding to misfortunes prevention activities.

Consequently, the first part of this paper provides the missing conceptual framework connecting research on politics and prevention, and also explaining why a political theory of prevention is an important extension of organizational theory. A joint consideration of the previously separate theories of politics and prevention will show that politics and prevention overlap at the point of determining the cause of organizational misfortunes. Both the political order and preventative learning are affected by the explanations for why misfortunes happened. Prevention depends upon the construction of specific types of causal explanations of misfortunes that help organizations learn how to stop recurrences. At the same time, causal explanations for a misfortune can lead to reinforcing or changing who holds elite roles, the control systems, and even the institutional logics of organizing in use in organizations – depending upon who or what is determined to be the cause of the misfortune. This is what connects politics and prevention.

While the general connection between politics and prevention through causal explanations can be derived from existing theory, the specifics of the relationship cannot. The question of what are the exact effects of prevention, and under what conditions does the exactly does prevention affect the political order of organizations, requires extension of existing theory on both topics. It is the task of the second part of this paper to develop theoretical propositions about the specific political value of prevention. The propositions are developed inductively through analysis of the politics around the emergence and stabilization of prevention practices and routines in the field of commercial aviation in the United States. The aviation field is selected mainly because it is an exemplar of prevention-oriented activities (e.g., Barach, and Small, 2000; Kohn, et al., 2000: 95; 2001: 4).

Foreshadowing the case analysis, there is ample evidence of a political salience of prevention. Prevention-oriented routines and practices emerged mainly as solutions to the problem of establishing political order in a new organizational field and maintaining it after accidents or disasters. Prevention routines were particularly important in helping reproduce the authority of state agencies involved in day-to-day operations in the industry. Further, public concerns about safety were clearly secondary to political concerns in the early industry when prevention-oriented practices first emerged. Unlike the modern era in which there is keen public and government interest in aviation safety and mishaps, in the early years of the commercial aviation industry accidents were so common and so few people flew that they were largely accepted as an inherent part of flying. The historical record will show that the most powerful motivation for adopting

prevention-oriented practices was their utility in maintaining order in the face of the internal political tensions of the new industry.

The third and final section of this paper discusses the implications of the connection between politics and prevention both practically and theoretically. The pragmatic value is that an understanding of the political dimensions of prevention could aid the diffusion of prevention practices. While preventing future misfortunes is a goal that has almost universal approval, the necessary organizational practices for achieving that goal are not in universal use. Given that in the long run political concerns in organizations trump the less fundamental goal of prevention, political forces could be the enduring sources of leverage for doing the work of prevention in organizations.

The larger theoretical reason for studying the politics of prevention is that it is an important first step in developing a general theory of the cultural politics of misfortune. The theoretical implication of this study of prevention is that there appears to be a more general relationship between organizational politics and how organizations routinely explain and react to misfortunes. When the theory of the political value of prevention developed here is considered along with previous political research on the politics of secrecy (Molotch, 1970; Beamish, 2002; Tasca, 1990) and blame (Jackall, 1988; Douglas, 1992), it suggests that there is a necessary effect on authority from all explanations given for misfortunes. Given that misfortunes are relatively common (if unpredictable) occurrences, the larger implication is that misfortunes are routine and dependable opportunities for building authority in organizations. If this is true, it would suggest that current political theories are incomplete without recognition of this ongoing and general

means of building authority in organizations. This research on the politics of prevention is a first step in developing that more general theory.

CONCEPTUALIZING POLITICS AND PREVENTION

The first step in developing a theory of the politics of prevention is to define the concepts of politics and prevention. These terms have multiple meanings, but very specific definitions in the context of organizations and each other.

Organizational politics and political order

Organizational politics are the processes and practices that reproduce the political order in organizations. The political order is embodied by the organization as a resolution to the chronic political tensions inherent to organizing. These tensions are over issues such as who will hold positions of control and power within the organization (e.g., Michels, 1958; March, 1962; Jackall, 1988; Fligstein, 1990), how the frontiers of control should be set between classes or groups within the organization such as managers, workers, professionals, owners, and superordinate actors such as states or classes, etc. (e.g., Crozier, 1964; Burawoy, 1979; Clegg, 1981; Abbott, 1988; Zald, 1978; Heimer, 1999; for a review see Jermier, Jermier, 1998), and which logics of organizing will define the authorized and legitimate means and ends of the organization itself (Friedland, and Alford, 1991; Thornton, 2001; Fligstein, 1996).

Political order is a necessary, but always provisional accomplishment of stable, cohesive organizations. The underlying political tensions in organizations are chronic and cannot be resolved for all time. Instead, it requires ongoing effort to maintain at least a working consensus and avoid outright conflict. Order is maintained through two interrelated

mechanisms: systems of resource distribution and authority. Systems of patronage within an organization can direct the material resources of the organization to maintain a dominant coalition, but ultimately material resources are not enough alone to concentrate power in the hands of a few. As pointed out by Bendix (Bendix, 1956) in the context of managerial control, such control by a minority is only possible with the acceptance of it as a legitimate form of authority by the majority. It is the institutionalized meaning systems in place that legitimate and authorize those who hold control, the system of control, and the very means and ends of the organization itself.

Prevention and misfortune

Prevention in organizations refers to both the end, and the means, of stopping organizational misfortunes from recurring. Misfortunes here are specifically limited to manifestations of chaos that emerge between the limits and cracks in human control and knowledge. Misfortunes are inherently negative organizational contingencies that are outside of the intention, control, and precise prediction of the organization. They range from minor slips to full-fledged disasters (Vaughan, 1999), including natural disasters, failures of a product or service in the marketplace, surprise attacks by opponents, economic recessions, accidents, a loss on the battlefield, mistakes, untimely death of a leader, unanticipated consequences, lawsuits, imposition of new regulations, and scandal are just some of the examples of organizational misfortunes.

Although prevention is both an end and a set of means, it is only the means of prevention that provide political advantage. The apolitical nature of the end of prevention is most clearly visible in its universal popularity. Certainly there is a value to preventing misfortunes in general, because by definition it is the reduction of unwanted and negative

events in the future. Prevention also means that previous suffering has not been entirely meaningless or valueless. If the past can be used to prevent the future, it alchemically transforms a misfortune from the dross of an incomprehensible manifestation of chaos into an important bit of knowledge that helps improve the world.

The lack of opponents to prevention is indicative of the fact that the benefit of reducing future misfortunes is impossible to reliably distribute in unequal ways that confer political advantage and breed conflict. One reason is that the value of prevention is hard to establish because it is a non-event; it is the absence of something happening. As a consequence, it is difficult to convince anyone something was actually prevented, or how much was prevented. If the rate of plane crashes decreases in a particular year, was that prevention or random variation? The epistemological difficulties in establishing the existence of prevention makes it hard for the benefits to even be recognized, much less distributed for advantage.

Even if members of an organizational community believe that prevention exists, it is usually impossible to know who specifically received the benefit of prevention. Using the example of a plane crash again, if one less plane crashes in a year than expected, what passengers, what airline, what airport benefited from it? This is an example of a Rawlsian (Rawls, XXXX) “veil of ignorance” that prevents effective pursuit of political gain because one does not know where they stand in the eventual payoffs. There is little ability to gain political advantage, or generate political conflict, when such benefits are in effect shared equally by the entire community.

The apolitical value of actually achieving prevention has been one indirect reason research on prevention has not focused on political issues. Given the nearly universally lauded goal of actual prevention, it is not surprising researchers focused on how to achieve that goal. It also tends to give little interest in more mundane and potentially parochial issues of the politics of prevention.

Means of prevention

Peering behind the apolitical cover provided by the goal of prevention shows that there are also the means of prevention that may have a political impact independent of actually preventing anything. The most obvious potential political effect of doing prevention is that it could increase the power and control of groups with professional jurisdiction over prevention activities. Just as lawyers benefit from an emphasis on litigation, so to would prevention experts with any emphasis on doing prevention, and so in the pursuit of their own political interests these professionals might expand the use of prevention activities.

The limited ability of the actions of prevention experts to generate valued resources, however, suggests that they will always have limited ability to expand their operations to any significant extent. Given that the achieving of prevention produces little in the way of manifest, material resources because it is a non-event, there is little ability of prevention experts to build the political power to expand their activities on their own.

This leaves us with the potential political impact of the activities of prevention themselves, independent of the benefits they produce to those who do them, and to those who are spared future misfortunes. The complication of examining the means of prevention is that there is ostensibly an almost infinite set of prevention-oriented

activities, as these would tend to vary by context. There is, however, one core set of activities around learning about the cases of misfortune that are a common foundation to all prevention efforts, and that have significant potential political value.

All prevention activities are predicated first on an understanding of how misfortunes occur, in order to stop them in the future. As a consequence, prevention begins first with learning about the causes of misfortunes in the past -- how and why they happened -- as a guide to how the past can be stopped from repeating. This investigation into the causes of misfortunes can provide sufficient information about how to break the causal chains leading to such events in the future, or anticipate misfortunes sufficiently to reduce their impact.

For the purposes of prevention, very specific practices for determining the cause of past misfortunes are necessary to create the right understanding of the cause of the misfortune to enable preventing it in the future; not just any cause will do. Although in common speech we refer to “the cause” of an event as if it were singular, what we are referring to instead is one of many possible *causal explanations*: a construction of the world that makes sense of an event, and provides a basis for action in response (McGill, 1989). A causal explanation is one possible interpretation of why an event occurred that is based upon the facts of how the event occurred. The facts are the micro-level event conjunctions and timelines that describe the proximal causal ordering of how an event occurred, and there is usually convergence around a single set of facts because they can be judged in terms of their accuracy in depicting the processes leading up to the misfortune.

In contrast to the facts, there are always multiple causal explanations based upon the same set of facts, and they cannot be judged on their accuracy, only on their usefulness in achieving a particular end. The existence of multiple plausible causal explanations for an event, even given the same facts, is due to the complexity of the causal chains leading to organizational outcomes. Most social phenomena are caused by multiple, conjunctive forces (Ragin, XXXX), and organizational misfortunes are more likely than most. The modern organization is embedded on an array of dimensions (see Dacin, XXXX for a review) and as a consequence sits in the middle of an expanding web of social, economic, political, cultural, and historical interconnections that provides many plausible and necessary (if not sufficient) causes for any event. The decisions of months or years before, the interactions with the many various individuals and organizations, and their interactions with other organizations and individuals, create a nearly infinite array of plausible explanations for why things went wrong, as well as points of potentially changing those outcomes.

As an example of the interpretative, pragmatic nature of a causal explanation, considering the, consider the 1989 sinking of the Exxon Valdez oil tanker. The facts are undisputed: a supertanker ran into a sandbar and spilled its cargo of crude oil. The causal explanations given for the Exxon Valdez spill, however, are many and are often in dispute. Did a tanker captain with impaired judgment cause the accident by running into a sandbar? Or was it the riskier single-hulled design of the tanker that ensured the toxic cargo would spill out of any hull breach? Or instead, was it the inevitable outcome of using thousands of oil tankers to provide a domestic market with inexpensive foreign oil? Each is a plausible causal explanation, as each fit the facts, but there is no overarching standard of

accuracy by which they can be compared. At the same time, they have very different future implications for action, ranging from punishing a captain to changing national energy policy.

Consequently, causal explanations are evaluated not in terms of their accuracy, but rather on a more pragmatic basis of whether they are effective at enabling action to achieve a particular goal or end. For example, after an organizational misfortune, the goal of assessing criminal responsibility is best served by causal explanations that only examine an individual's intentions who is on trial, while the goal of reinforcing the piety of a religious community is likely to be better served by identifying how community-wide violations of sacred tenets are the cause of the misfortune. The value of causal explanations is always a relative, pragmatic judgment of its utility for a particular goal.

Prevention-oriented causal explanations

In the case of trying to achieve the goal of prevention, the types of causal explanations that are best suited for that job have already been clearly identified. Decades of prior research on prevention has produced an expert consensus on some of the features of prevention-oriented causal explanations, as well as the causal explanation practices that will routinely produce such causal explanations (Lederer, 1982; Kletz, 1993; Leape, 1994; Krizek, 2000; Lebow, et al., 2000; Kletz, 2001; Reason, 1994; Bates, and Gawande, 2000; Kohn, et al., 2000; Morris, and Moore, 2000; Perrow, XXXX; Tasca, XXXX; Vaughan, XXXX; Vaughan2, XXXX). This wealth of research over three decades is used here to defining the set of prevention-oriented causal explanations and causal explanation practices.

Prevention-oriented causal explanations focus on the underlying systemic or structural causes of events, rather than on human causes, because those causes are the most remediable. Identifying a person or persons as the cause of a misfortune provides no insight on how to prevent these same causes from creating the same problem in the future because of the difficulty in changing human causes directly. When a human is identified as a cause it is in two ways: either it was an unintentional error in some way of the human that caused the misfortune, or it was an intentional act of ill-will. In the case of human error or slips, there is little that can be done to remove it as a danger, which is why safety experts have long argued that a focus on human causes is unproductive (see for a detailed making of this argument Kletz, XXXX). Humans are inherently going to make errors, mistakes, and misjudgments, so there is little that can be done to solve that problem directly. Further, it is rare that humans can simply be removed from any position of influence within a system, and thus cut out their errors that way either.

In contrast, focusing on the structural factors that either make error more likely, or that make human error inevitably lead to disaster, is far more useful. Changing these structures can change the probability of error, or the magnitude of its effect. In addition, these structures are often human constructions, so can be altered more easily than human nature.

Similarly, identifying human enemies as the cause of misfortune leaves little direction for preventative action. Just as humans can rarely be removed from positions of influence, so too can enemies rarely be removed from positions of threat. Enemies are often too numerous and difficult to identify to be removed, particularly when they are potential

enemies before they take definitive action. Wholesale attempts to isolate any potential enemy in areas where they have no political, social, or physical ability to do harm are often impractical, immoral, and counterproductive as it creates even more ill-will in its implementation. It is also impossible to directly change the attitudes of a human being; one cannot reach into minds and change them.

There are, however, structural changes that can again be used to either reduce the potential impact of enemies, as well as reduce their propensity to act upon their attitudes. Changes in structures of organizations can make them less vulnerable to attack by those of ill-will, and thus negate their efforts. It is also possible to change structural conditions to moderate or mediate the effects of negative attitudes towards an organization. So the classic process of co-opting one's enemies by giving them material incentives to forbear attacking is a useful systemic way to reduce the chances an enemy will act on their intentions to harm the organization.

Routinely producing causal explanations that focus on systemic causes depends upon two specific practices: making public facts and causal explanations about misfortunes, and avoiding assessing of blame for the misfortune. Publicity about facts is critical for accumulating sufficient data about enough misfortunes to detect the underlying or systemic causes. Most misfortunes are relatively rare events for any single organization, and it is difficult to learn from a small pool of events about underlying causes (March, Tamuz, XXXX). The public sharing of facts with every organization facing a particular misfortune helps improve the learning about actionable causes. The sharing of causal

explanations is similarly important, as it provides an entire community of organizations the ability to learn from lessons drawn from the analysis.

Similarly important is avoiding the assessments of blame when constructing causal explanations, because it encourages public information sharing. If individuals or organizations involved in a misfortune are fearful of being blamed for the misfortune, then they are unlikely to provide all the facts that they know about that misfortune. They may be encouraged to keep secret any facts that would reflect upon them in a bad light. This is particularly true if there is possible legal sanctions that might be incurred if one were found to be at fault. In addition, there is also evidence that a processing goal of blame cognitively affects causal reasoning in ways that leads to a focus on single humans as the cause, and away from systemic causes (Lacey et al, XXXX).

Politics of causal explanation

While prevention depends upon causal explanations, so to does the political order of organizations because misfortunes are occasions in which the sufficiency of that order is open to question. When bad things happen to organizations, it can lead to questions about the competency of current elites, the effectiveness of the control structures, and even the appropriateness of the institutional logic of organizing in use. The answers to the question of what was the cause of a misfortune can either lead to wholesale changes in that political order, or to a strengthening and reinforcement of that order.

A vivid example of the close connection between the causal explanations and the political order is the investigations into the causes of the airliner crashes on September 11, 2001 in the United States. While the public reason for these investigation was to prevent future

attacks, it was clearly also a momentous political process for the involved organizations as well. The threat to the current political order was that some intrinsic insufficiency in the current political order would be determined to be a cause, and thus a wholesale change would be necessary. Certainly this was part of the reason that, at least initially, most of the involved organizations were secretive about what they knew and about their actions leading up to the attacks. They clearly had a reduced risk of change by such secrecy, as the change potential was great. Eventual changes included the wholesale changeover of the airport security from private to state control, and the construction of a new overarching department to integrate and connect disjointed security and intelligence agencies.

At the same time, this was also an opportunity to strengthen other elements of the political order. Identifying a group of sophisticated, well-trained, and well-funded foreign terrorists with a large supply of willing volunteers as the cause of the attacks created a threat that justified strengthening systems of control and authority of involved organizations. The sense of threat has led to increased budgets to existing security, intelligence, and defense organizations; a public reiteration of the importance of these organizations and their leaders to have greater power; and the passage of concrete legislation to expand those powers.

The political value of both secrecy and blame exhibited in the determination of the causes of the attacks on September 11th is supported by previous research on the politics of causal explanations. Secrecy is clearly a politically valuable way of preserving the status quo by elites who benefit from that political order. In the case of oil spills in the ocean,

for example, both Molotch and Beamish (XXXX) have examined how firms keep these matters as secret as possible as a way to minimize any political reaction to these events. As these spills happen often far away from any direct knowledge by anyone except those working in oil companies, such a strategy can be very effective at making the risk of causal explanations disappear. If no one knows that a misfortune has occurred, then there can be no political mobilization by anyone in response to that misfortune.

Selective secrecy about causes is also effective for avoiding legal responsibility that could lead to changes in who has elite roles in organizations and the systems of control and autonomy in organizations. Tasca (XXXX) shows how shipping companies control access to accident information to limit legal liability of the firm.

When secrecy is not an option, then blaming can also help reproduce the political order, at least if directed in an appropriate way. Placing blame completely outside the organization is an obvious way of avoiding any risk from causal explanations, but internal blaming can serve the political order as well. Jackall (1988) has shown that one way a dominant coalition of managers can maintain its power is to shift blame for organizational problems or failures onto those managers who are potential challengers to power within the organization. This reduces challengers by leading to the removal of challengers from positions of power within the organization.

On a more fundamental level, the routine use of blame can actually strengthen institutionalized authority in organizations. Douglas (1992) has theorized blame can create a sense of threat which in turn justifies the use of power and control to meet that threat. Blaming villains, i.e. those with a specific intention of harming the community, is

a powerful support for extending greater control and power to those who lead the community. This may even be such a positive force for building authority that elites may even actively seek out misfortunes in order to blame villains when their authority is under attack (Douglas, 1992: 60). The classic example of the usefulness of blame is a political leader blaming misfortunes on foreign enemies as a justification for greater internal power and control.

Douglas suggests that where the villains will be found will vary by the authority structure of the organization, and many authority structures are strengthened by blaming internal villains. Within the hierarchical structure found most commonly in modern organizations, blaming lower-level employees down the hierarchy reinforces the authority of the hierarchy overall. Blaming misfortunes on inattentive, incompetent or opportunistic lower-level employees justifies increased surveillance, monitoring, and restrictions upon employees to prevent future dangerous behavior.

TOWARDS A POLITICS OF PREVENTION

When taken together, the research on both prevention and politics leads to the conclusion that there is likely to be a politics of prevention around causal explanation practices.

There are two reasons for the conclusion. The first, and most obvious, is that both politics and prevention have as an important practice the causal explanation for misfortune. This suggests that both goals can be pursued simultaneously.

The second reason is that there is a political value to the opposite practices of secrecy and blame in causal explanations. The previous research clearly establishes that secrecy and blame can be politically advantageous ways of reproducing the status quo political order.

The implication from this finding is that if prevention-oriented practices are to persist, then they must be at least as politically valuable as the alternatives. Politics will always trump prevention in the end as a more fundamental motive in organizations, so the goal of prevention is not enough to sustain the activities of prevention at a high political cost. Certainly elites within an organization are unlikely to implement and sustain prevention activities if they represent a direct threat to their power and authority, or there are alternatives that are better suited to reproducing their power. Even if there were self-sacrificing elites or disinterested parties with sufficient power to force the implementation of prevention-oriented practices, the weakening of the political order by ignoring its reproduction would either lead to organizational dissolution or the ascendance of elites willing to take on that additional power. Political order cannot be sacrificed for prevention except in only the shortest of terms because it is a necessary element for maintaining the organization itself.

The focus of this paper, then, is to discover how, and under what conditions, prevention-oriented causal explanation practices reproduce, and strengthen, the political order of organizations. The specific aim is to theorize the connection to all elements of the political order – the power of elites, systems of control, authority structures, and the legitimacy of organizing logics embodied by the organization. Specifically the aim is to understand how, and under what conditions, authority and control are served by a focus on systemic causes of events (rather than focusing on persons as causes), go public with their facts and causal explanations (rather than keep them secret), and assiduously avoid blame (rather than seek out a villain or scapegoat).

METHOD

Given that this is the first attempt to examine the politics of prevention empirically, the use of a case study to inductively generate theory is appropriate (Eisenhardt, 1989). Such a theory building effort would provide important conceptual foundation for later, more general analysis of the politics of prevention. The use of qualitative data is suggested as the focus of analysis here is on process, particularly political processes of change around prevention efforts. Qualitative data provides the details about the temporal ordering of events and interests that is necessary for developing a theory of political processes.

The use of archival data is necessary in studying field-level processes. Much of the archival social research is of field-level processes that cannot be captured by any single observer (Mohr and Ventresca, XXXX). This allows a perspective for analysis that crosses a community of organizations.

The focus on political processes around prevention also argues for a historical case study, rather than a case study based on direct observations in current time, for two reasons. The first reason is that distance created by time increases accuracy in defining the political interests and processes in organizations because of how it aids the archaeology of politics. Politics is an obscured and implicit process of organizing rather than an explicit one, and some dimensions of political power are best served by being hidden. The power of authority is derived largely from appearing as the natural or objectively superior order that is tacit and unquestioned (Lukes, XXXX). The power of any institution, including institutionalized authority, comes from its taken-for-grantedness through a historical process of accumulation and sedimentation of meaning (Berger and Luckman, XXXX; Meyer and Rowan, XXXX).

Consequently, any study of organizational politics must take up the archaeological task of uncovering these hidden interests and goals, and the passage of time helps with this task in two ways. First, it reduces the interest or the ability to manage impressions of outsiders. In the current time period there is often much to be gained by actors claiming motivations that they do not have, or hiding their real agendas. As struggles pass into history, however, the advantage of such impression management dwindles, and franker discussions of interests can occur. The historical record of subsequent actions taken by parties can also reveal interests and motivations obscured in the present, as the actions taken afterwards are often quite revealing of the interests in a particular moment.

Second, a historical perspective allows temporal choice in study to examine the formative moments where politics are most vivid and prior to the political order becoming naturalized or taken-for-granted. Theorists have long used historical case studies of formative moments precisely to uncover the structural foundations of institutionalized practices that have become taken-for-granted (e.g., Leblebici, XXXX; McGuire and Granovetter, XXXX; Hargadon, XXXX; Dobbin, XXXX).

DATA

The use of a historical case study requires, however, the selection of a case with sufficient archival data to ensure accuracy and completeness. The archives are the final limit on understandings of the past, as there is no way to collect more data and information from that time period. The case must both be one where prevention-oriented causal explanations emerged and where there was significant contemporary attention to political processes to document them from multiple sources.

The case of the commercial aviation in the United States meets all the requirements for building a theory of the politics of prevention. The aviation field has some of the most prevention-oriented causal explanation practices of any field, and is often used as an example of best practices for prevention (Barach, and Small, 2000; Kohn, et al., 2000: 95; 2001: 4). As Eisenhardt (1989) has pointed out, extreme cases of the phenomenon under consideration are useful for theory building because of how visible the subject under study is to the investigator, and aviation is currently the epitome of a prevention-oriented industry. The National Transportation Safety Board (NTSB) has the federal mandate and subpoena power to investigate and make public the probable cause of all aviation crashes or other incidents¹. The NTSB gathers information on the systemic and underlying causes of accidents and by statute does not assign blame for accidents. Its official findings are prohibited from being used in any legal proceedings that may assess blame. Part of what makes the NTSB able to avoid assessing blame is that it is a fully-independent and disinterested agency. It only investigates and makes recommendations for purposes of preventing future accidents, and has no other stake in the field of aviation. It is completely separate from the Federal Aviation Administration (FAA) which regulates the industry and operates the air traffic control system.

The current aviation field also has an exceptional system for publicly reporting data on near misses as well, called the Aviation Safety Reporting System (ASRS). The ASRS allows anyone within aviation (including pilots, air traffic controllers, flight crew, ground

¹ The NTSB technically has the right to investigate all accidents both general aviation (such as private planes) and commercial aircraft, although designates that the FAA as investigators given the number and routine nature of general aviation accidents.

crew, etc.) to report dangerous situations anonymously and with immunity from regulatory sanction by the FAA for their part in the incident (FAA, 1975; 1976)¹. The system has provided invaluable information over the years for improving the safety of operations before an actual accident occurs.

The case of commercial aviation is not only an extreme case because of its prevention-oriented practices today, but also because of its rather deplorable lack of concern or interest in prevention at its beginnings. The early years of commercial aviation saw completely opposite in its causal explanation practices and horrific number of crashes and fatalities by today's standards. The safe, efficient, and widely used aviation system of today would not arrive until several decades later. At the beginning, risking life and limb while flying were considered just a part of the job, where and there were so few passengers that the wider public had little interest in the safety of the system.

Commercial aviation began in the United States with the establishment by the Postal Service of air mail routes from 1919-1925 using surplus planes and from World War I. The nascent aviation industry had been hit hard by a lack of military contracts, and had lobbied for the creation of air mail routes that could be a source of subsidy necessary to start private airlines (Komons, 1978, p. 23). The early planes were too small to make money carrying passengers alone; it would not be until the introduction of the DC-3 airplane in 1938 that the aviation industry would not be wholly dependent upon airmail services (Lewis, 2000; p. 3-11). The federal government spent millions establishing the routes, including much of the infrastructure of air fields and navigational aids, before putting them out to contract to subsidize the first commercial airlines.

During the Postal Service's creation of air mail system, accidents went essentially unexplained because they were so frequent and expected-- one out of every six of the original air mail pilots died (Perrow, 1984: 125). The planes of the day were fragile and lacked any navigational aids beyond the eyes of the pilot for flying at night and bad weather. Many pilots had military experience where risk-taking was common, and the professional culture of the time encouraged an unrealistic unrealistically positive assessment of their own abilities (an attitude that continues to the modern day; see Helmreich, and Merritt, 1998: 35). The general public similarly had little concern about investigating accidents because they romanticized all aviators as daredevils.

A final reason for selecting the case of commercial aviation is its superior archival record from multiple perspectives because it has attracted interest from the beginning by historians, federal regulators, and the wider public. Aviation was, and still is, a high status and exciting activity to the general public. Coverage of the field has been strong by the general news media from its inception, and now includes more specialized media dedicated solely to the topics of aviation.

The field of aviation also has extensive archives available because of the deep involvement of the federal government in the field. The aviation industry was regulated in all aspects until the 1980s (Lebow, 2000) and has one of the largest day-to-day involvements by the federal government in industry running airports, air traffic control, and setting safety and certification standards. The FAA alone has over 48,000 permanent employees working in the aviation system (FAA Administrator's Factbook, XXXX).

ANALYSIS

An analysis of the politics around the emergence of prevention-oriented causal explanation routines in aviation was performed, and a summary of the results of that investigation and theoretical propositions derived from those results. The analysis of the records was bounded by examining the emergence of the four most important prevention-oriented causal explanation practices: focus on systemic causes, public investigation of accidents, avoidance of blame, and collection of near miss data. The analysis was done on the multiple historical accounts of the development of the field of aviation in general and in its causal explanation practices in specific. The case study has drawn upon histories specifically about how the aviation industries evolved over time (e.g., Hopkins, 1982; Kane, and Vose, 1990; Lewis, 2000; Shostak, and Skocik, 1986), as well as specialized histories about the evolution of safety and prevention practices specifically (e.g., Komons, 1978; Komons, 1984; Lebow, et al., 2000; Lederer, 1982; Perrow, 1984; Tamuz, 2001). There are few industries in which prevention activities have been more widely investigated and analyzed in such great detail and from so many multiple perspectives. Particularly useful for the analysis was that so many groups in this industry had the means and interest in commissioning historical accounts from their own perspective: pilots, air traffic controllers, airlines, and federal regulators. This analysis is reflective of these multiple, detailed perspectives that uncovered the political processes at work. These multiple perspectives provided a basis for establishing the reliability of the accounts for past events.

The results of this analysis are reported as a series of accounts about key moments of emergence of prevention-oriented causal explanation practices. Each account is then

followed by an inductive development of a specific theoretical proposition supported by that event. The analysis begins in 1926 with the founding of the commercial airline industry, and ends with the introduction of the near miss reporting system in 1976.

Bureau of Air Commerce and public investigation of probable cause (1926-1932)

In 1926 the first commercial airlines were emerged when the Postal Service turned over its air mail service to private firms. At the same time the Bureau of Air Commerce (BAC) was created as a part of the Commerce Department. The BAC had conflicting mandates: to promote and regulate the industry. Part of its regulatory duties was making reports on the “probable cause” of all accidents, but this ran counter to promoting the fledgling industry. Airlines sought to suppress BAC accident reports to prevent damage to the public image of aviation and to deny that information to any attorney’s representing victims of crashes in suits against the airlines (Komons, 1978: 179). The federal aviation agencies accommodated the airlines by to keep accidents as quiet as possible (Komons, 1978). The Secretary of Commerce kept the detailed reports a secret, only releasing to the public a brief, annual statistical summary of general causes of accidents causes without identifying information about specific crashes.

Although the airlines had high rates of accidents (from 1927 to 1934 there were 101 deaths from accidents in commercial airliners (Komons, 1978)), there was no public outcry initially over this practice.

It would not be until 1932 that the probably cause reports would be released publicly, and it was the Senate which would demand it (Komons, 1978, p. 178-183). The Senate became involved in crashes occasionally when they involved prominent or famous

people. Senators naturally wished to show that they were involved and informed about these accidents to constituents and increase their public profile by being part of the press coverage of the accidents. Some Senators began requesting these reports so they could release details to the media.

Initially the Senate's requests were resisted, but the power of oversight led to them prevailing. The reports were related publicly in 1932, and at the same time legislation was passed to give subpoena power of the Secretary of Commerce for investigating accidents. As a purely symbolic nod to the aviation industry, the legislation also prohibited the contents of probable cause reports from being directly used as evidence in any legal proceeding (Komons, 1978, p. 178-183), although the investigation reports are invaluable even today as a roadmap for suing the airlines after a crash (Komons, 1978, p. 174-182; Lebow, et al., 2000; p. 29-30).

Politics of publicity

The action by the Senate illustrates how publicizing causal explanations and facts can be of political advantage when there is mass media interest in the misfortunes being described. Celebrity is created by association with the famous (Boorstin, 1961), and publication of causal explanations allowed the Senators to be associated with the famous who were involved in the crashes and in turn increase their fame. That publicity may serve to prevent accidents in the longer term was a happy, but unintended, benefit.

Proposition 1: The prevention-oriented practice of publicizing causal explanations about negative events can be political advantageous by increasing the fame and power of those who publicly present the causal explanations.

Civil Aviation Board (CAB) and the Cutting investigation (1932-1940)

The next major change in causal explanation practices came in 1940 with the introduction of the Civil Aviation Board (CAB), the first semi-independent agency for investigating crashes. The CAB was created because of a partisan political conflict six years earlier over aviation policy.

The basis of the conflict that led to the CAB was in the changing role of federal aviation agencies that was creating a conflict of interest for those agencies. The original mandate of the BAC was to create “highways in the air” (Komons, XXXX) to facilitate interstate commerce. Initially this task was envisioned as analogous to the role the federal government played in maritime travel of providing simple, passive navigational aids such as lighted beacons (Komons, 1978: 134-146). As aviation technology advanced, however, the task of providing navigational infrastructure quickly went from a passive to an active, day-to-day operation of providing radio information and beacons, weather reports, and eventually air traffic control. Unintentionally, the BAC became one of the critical parts of operating aviation.

The BAC now had a direct conflict of interest: when investigating the causes of accidents, it should be investigating itself as well because it was such an important part of the system. The initial results also looked bad for the BAC: of the 101 fatal accidents investigated by the Secretary’s office from 1927 to 1934, not a single one was attributed to the agency or its operation of navigational aids (Komons, 1978: 286). This conclusion provoked no reaction at the time, largely because the aviation system as a whole was getting much safer. Aviation fatalities had dropped from 22 for every 100 million passenger miles in 1930-1932 to 6 in 1933-1935 (Komons, 1984: 11).

This apparent conflict of interest would become noteworthy as an opening for an attack by the Senatorial enemies of the Roosevelt administration over budget priorities. The downturn in tax revenue due to the Great Depression had forced the Roosevelt administration to initially cut federal budgets – including spending on aviation. Senators representing affected industries were eager for an opportunity to roll back those cuts.

The opportunity arrived in 1934, when the Senate launched an investigation into the fatal crash of a plane carrying Bronson Cutting, an obscure Republican Senator from New Mexico. The Cutting investigation was ostensibly into possible deficiencies in the air navigational aids that may have led to the crash, but the real motivation was to embarrass the Roosevelt administration into restoring spending on aviation (for the definitive account, see Komons, 1984, p. 1). The motivation for the hearings was entirely political. Air safety had been of no previous concern in the Senate, accidents were decreasing, and there was little public interest in the crash of an obscure Senator when compared to earlier, more highly publicized crashes that had not generated separate investigations².

The investigators were able, however, to publicly claim that federal budget cuts in aviation had made air travel unsafe, and thus the aviation budgets should be restored. The BAC was powerless to contest the charges, despite the complete lack of any evidence that there was any deficiency in the system. The Senate investigators were able to make the federal aviation officials seem suspicious simply by pointing out that they had never blamed themselves for a single accident (Komons, 1978: 286). The head of the BAC was forced to admit to the appearance of impropriety and call for more independence in investigations:

I do feel that a precedent is now being established...which would result in it being inadvisable for the future for Bureau of Air Commerce personnel to investigate probable causes of accidents. I personally hope that your committee will suggest for the future an accident board consisting of other than Bureau personnel (cited from Komons, 1984: 68)

Although the Senate investigation was damaging, the Senate's objections to the budget cutting soon became moot as the Roosevelt administration expanded spending in general soon after. The Senate dropped the matter as quickly as it had taken it up when budgets were restored, and took no further action on its own initiative.

The administrators of the BAC, however, did not drop the matter. The Cutting investigation showed that they were permanently vulnerable to attack and embarrassment over any disagreement with the Congressional branch because of this apparent conflict of interest. It would be these same administrators who would then work for the next six years to push through Congress the legislation creating a new, semi-independent agency within the Commerce Department for investigating crashes called the Civil Aeronautics Board (CAB) (Komons, 1984). Although it would take six years because the administrators were the only ones really interested, in 1940 they would be rewarded with the CAB. The CAB represented an exceptional change to causal explanation practices in aviation because it was the first semi-independent agency with the singular mandate to investigate the cause of accidents in order to improve future safety. It was the direct predecessor of the fully-independent National Transportation Safety Board (NTSB) that currently determines the cause of aviation accidents and recommends systemic changes for improving safety.

Federal authority and independent investigations

The creation of the CAB was motivated by a desire to reproduce the authority of federal aviation authorities to manage and operate the aviation navigational system, and not any direct concern with safety by regulators, the public or congressional overseers. The need for an independent agency was the direct result of the unintentional expansion of the federal role in aviation from an arm's-length regulator to a direct participant running the day-to-day operations of aviation.

The independent agency was beneficial for reproducing the authority of new state agencies to directly control aviation operations. The authority of the executive branch in all its operations is monitored and often questioned by the legislative branch. The senatorial investigation after the Cutting crash essentially questioned the legitimacy of the aviation agency. Establishing a new, more independent agency to investigate crashes helped maintain that authority of the aviation agencies from questioning, particularly as part of partisan political conflicts over policy.

Proposition 2: Independent, prevention-oriented organizations that construct public causal explanations for negative events have a political value of legitimating state authority over day-to-day operations in industry.

Creating the NTSB (1940-1966)

While the CAB was a separate department within the aviation agencies, it was not fully separated in either its oversight or its jurisdiction from the rest of the aviation agencies. It still had common oversight with the FAA and its predecessor agencies that actually regulated aviation and ran the navigation system. There was also jurisdictional ambiguity as it was unclear who would be in charge of investigating an accident that involved a

navigational system provided by the federal aviation authorities – the agency that ran that system, or the CAB? This common oversight, and blurred jurisdictions, was the basis of interagency conflict that would not be fully resolved for another quarter century.

The jurisdictional conflict would grow along with the importance of the federal aviation agencies in providing active air traffic control (ATC) systems for jet airliners. When the air traffic control function was federalized in 1938, it was a tiny operation with a few controllers and radios (Komons, 1978, p. 308-309). Pilots did most of the ATC function directly by using visual identification of each other to avoid collisions. Military flights were not involved as well, as the armed services were against any restriction of its own airspace (Miller, 1981, p. 242-243). As planes became more numerous and faster, an ATC system that was more coordinated and sophisticated than looking out the window was needed. Jets particularly required radar control, as they flew too fast to react once they were visible to other pilots. Despite the clear need, at the beginning of the jet age 99% of the ATC system did not have radar (Shostak, and Skocik, 1986, p. 31).

The insufficiencies of the system became publicly apparent in 1956 with three midair collisions in three weeks, including a midair crash over the Grand Canyon that killed 128 people (Schlager, 1994, p. 33-38). The resulting Congressional investigation led to the creation of the FAA in 1958 with the specific goal and expanded powers for upgrading ATC systems (Miller, 1981, p. 242-247).

The rapid expansion of the FAA left the CAB with overlapping duties, staff, funding and oversight with the much larger FAA (Miller, 1981, p. 242-247). The CAB was also forced to make recommendations that were directly critical of the FAA as more midair

collisions in the early 1960s exposed shortcomings in the new ATC system (Schlager, 1994, p. 49-50). A publicized midair collision in 1963 brought the interagency conflict into the open. The head of the FAA claimed sole authority to investigate the crash, in direct conflict with the CAB's claim of jurisdiction over the matter (Schlager, 1994: 48-50). While fighting over the jurisdiction, however, the CAB and the FAA both showed signs of partiality from their common oversight within the Department of Commerce. Both the FAA and the CAB would agree in their investigations that the pilots were solely responsible for the midair collision, despite the fact that later a federal judge would find the ATC system at least twenty five percent responsible and the FAA would make significant changes afterwards (Shostak, and Skocik, 1986, p. 31; Schlager, 1994, p. 46-51).

The embarrassment of public bickering and partiality of investigations led Congress to create the National Transportation Safety Board (NTSB) in 1966. The NTSB was created as an independent agency from the FAA, and was given sole jurisdiction for investigating aviation mishaps. The NTSB, however, only had the power to establish the probable cause of the accidents, and make recommendations to the FAA for any changes to the aviation system it thought would be useful for preventing future accidents. The NTSB had no power to punish, the right to assign legal or moral responsibility, or to force the FAA to implement any of its recommendations. This arrangement clarified the question of who had jurisdiction over accident investigations, and also separated oversight of the two agencies.

Inter-agency jurisdiction and state authority

The creation of the NTSB as an independent, technical agency focused on systemic causes of accidents (rather than an apportioning blame) was a solution to the open political conflicts in the industry. It clarified jurisdictions in a way that was amenable to both agencies. The FAA lost control over accident investigations, but was compensated in turn with a reduced threat from outsiders determining the causes of crashes. The new NTSB was completely separate, so it was no longer competing within the same organization as the FAA. The NTSB also had a specific prohibition from establishing responsibility or legal blame for crashes, and it could only recommend changes to the FAA. The NTSB was also given a secure jurisdiction with no interference from the much larger FAA.

Proposition 3: A prevention-oriented focus on systemic causes can reduce jurisdictional conflict between state agencies over casual explanations.

Fully-independent NTSB (1974)

While the NTSB and the FAA no longer had overlapping jurisdictions, they did share ultimate oversight at the point of the Secretary of Transportation. The final step to complete independence for the NTSB would occur a decade later, in 1974, in response to political scandals in the Nixon administration. After influence-peddling scandals in the Nixon administration there was a general wave of populist and consumerist legislation to make certain technical government functions more independent from political pressures. Aviation safety fell under the general category of technical agencies, but there were also specific concerns that the Republican presidential appointees during the Nixon administration were too friendly with the aviation industry during accident investigations

(Miller, 1981). The NTSB was made a fully independent agency as part of post-Watergate reforms. The Independent Safety Board Act in 1974 completely separated it from the Department of Transportation and the FAA.

Populism and prevention

The changes to the NTSB in the mid-1970s show how prevention-oriented activities have political value as embodiments of democratic and progressive values. The public, open, and independent sharing of information that aids preventative learning is also an integral part of populist politics. Prevention-oriented practices are consistent with a progressive program focusing on technical expertise rather than on political concerns when making administrative decisions and taking action. The creation of a fully independent NTSB was a reflective of how prevention-oriented causal explanation practices can be achievements of populist social movements.

Proposition 4: Prevention-oriented causal explanation routines have a political value as an expression of populist, progressive, and democratic values.

Creating a Near Miss Database (1974-present)

Soon after the NTSB became a fully independent agency, it proposed the creation of the ASRS for collecting reports about the causes of “near misses” or other dangerous conditions. The prevention value of such information was clear, as it allowed the dissemination of solutions to problems before they became actual accidents. The system required the close cooperation of the FAA because it could only work if individuals could make reports to the ASRS without incurring FAA sanction. The FAA licensed pilots, flight crew, maintenance personnel, and employed air traffic controllers directly. Without immunity from sanction, no one would be motivated to make public a situation that could

bring FAA investigation and sanction. The FAA needed to give immunity and anonymity to make exchange of information about near misses possible.

There was no conflict over the NTSB's recommendation and the FAA adopted the recommendation within a year. The FAA not only created provisions for immunity and anonymity, but also funded a part of NASA to act as an independent third party to collect the data, remove identifying information, and make it public.

Agency power and authority

The creation of the ASRS shows how the establishment of prevention-oriented organizations such as the NTSB makes politically possible increasing publicity about misfortunes, and increasing safeguards against focusing on blaming people rather than systemic causes. The ASRS was easily and routinely implemented by the FAA because of the presence of the NTSB; without such an agency to propose it and support it, the FAA would find it politically impossible.

One problem with the FAA implementing the ASRS on its own is that no internal manager at the FAA would find it beneficial to create a whole new class of problems for the organization to solve. Previous to the creation of the ASRS, these near misses were non-events, known only informally by those directly involved. The ASRS makes each near miss a formal case to be solved (Heimer, XXXX) that demands explanation and action. In a typical hierarchical organization, managers are certainly not rewarded, and are often punished, for the emergence of new problems or failures (Jackall, XXXX). There is little political benefit in proposing or supporting such a system within the FAA.

At the NTSB, however, proposing the creation of the ASRS is both a routine and politically valued activity because the goal of the entire organization is to find problems in the aviation system outside of the NTSB. The identification of new problems for study and resolution would be part of the expected work of managers at the NTSB.

Even if the FAA could have supported such a program internally, it would be difficult to gather external support for the immunity provisions if they were an internal FAA recommendation. If the FAA unilaterally decided to stop assessing responsibility for near misses on its own, particularly for the air traffic controllers that are the FAA's own employees, the appearance would be one of potentially suppressing or avoiding dealing with problems inside the organization. If it begins as a recommendation from the NTSB, however, there is an immediate legitimacy to the proposal because the NTSB has no stake in trying to cover up incidents. It is presumed to be directed solely for the purposes of preventing future accidents that benefit the entire aviation community.

Proposition 5: Initial establishment of prevention-oriented causal explanation practices in a field around one type of negative event creates political actors with interests in routinely expanding prevention-oriented causal explanations to other negative events such as near misses.

Consistent political forces in aviation (1919-2004)

If one examines the whole of the eight decades of commercial aviation, there are some larger and temporarily persistent connections between politics and prevention that occur. One of these is that the internal political struggles within the industry was the most importance force in creating and maintaining prevention-oriented practices. Most of the

elements of the prevention system were in place by the end of the first three decades of the industry. At that time, there was no external social movements concerned with industry risk, economic incentives to reduce losses, or technological innovations that enabled prevention. Certainly since the mid 1960s there is widespread public and governmental interest in aviation safety, but this was only after most of the fundamental pieces of the aviation prevention system were in place. The only time an external interest group affected the prevention-oriented practices in aviation was not because of a concern with aviation safety directly, but rather it was part of wider progressive and consumerist reforms of the 1970s.

Economic incentives and pressures also played a relatively small role in leading to prevention-oriented activities because in the early decades there was so little that could be done to reduce losses. Unlike fire losses that were reduced when underwriters began reducing coverage rates for those that adopted certain safety measures (Schnaiberg, XXXX), the aviation industry had no such central actors creating economic incentives for safety in the early decades. This was at least partially due to the fact that it took several decades before aviation technology advanced to where much could be done to reduce the risk of flying other than not flying at all. Aircraft were too fragile and navigational aids too crude, for many recommendations to be made to improve safety at all.

Information technology advances also didn't play a role in the publicizing of aviation misfortunes either, unlike in other settings. The advances in networking technology have enabled an explosion of "technopopulism" Graham, 2002 of the last few decades publicizing enormous amount of data about risks, hazards, and negative events in

industry collected and publicly disseminated by the federal government. In the case of aviation, however, the publicizing of even near misses by the ASRS preceded widespread networking of computers by almost two decades.

From the historical perspective of eight decades in aviation, the main force responsible for the emergence, and persistence of prevention-oriented causal explanation practices has been how the solve the problems of establishing political order for a mixed authority structure of private and state control of operations in aviation. The aviation industry was not the more simple, and common, model of private control over day-to-day operations with state regulators only affecting operations indirectly through regulation. Instead, aviation evolved mostly unintentionally as an industry where the state had an active, day-to-day role in managing critical parts of the system.

This mixed authority structure in the aviation industry created several political conflicts for which prevention-oriented practices helped settle and manage. The first and potentially most important was that prevention-oriented movements initially helped diminish or organize conflicts between the executive and legislative branch over the authority of the executive branch to manage operations. The oversight of the legislative branch of the executive branch brought partisan political struggles into the early field of aviation over the management and policy of the industry. The adoption of prevention-oriented practices, such as an independent agency for accident investigation, was an important way of buffering the authority of federal aviation agencies from constant assault from opponents in the legislature.

This is quite different, of course, from the more typical industry authority structure where state regulators do not have control over day-to-day operations, and consequently, their authority is better served by blaming firms within the industry for any misfortune. As Douglas (1992, Chapter 4) has already shown, a typical hierarchical authority structure is reproduced by pushing blame down the hierarchy. State regulators traditionally have a hierarchical relationship with the firms they oversee, and blame works well in that context as well. By blaming the subordinate firms for being inattentive, incompetent, or opportunistic it justifies increased power, budgets, and legitimacy of regulators to prevent future dangers.

The involvement of the FAA in the day-to-day operations of the industry, however, changed the authority structure by turning the hierarchy back on itself and introduced horizontal oversight by Congress. This change meant that pushing blame down the hierarchy was no longer effective. Blaming downwards led to the federal aviation agencies in effect blaming themselves and making themselves the problem. It did little to build aviation agency authority to imply that they were at fault.

Instead, the authority of the federal aviation authorities is better served by prevention-oriented causal explanations that emphasize systemic causes rather than blaming humans. For one, it avoids the risk of continually blaming those at federal agencies for any misfortunes in the industry. More importantly, however, the use of prevention-oriented practices is a means of symbolically reinforcing the commitment of federal aviation agencies to serving the good of the wider community. State agencies ultimately derive much of their authority from the understanding that they are doing work of value to the

entire community, rather than just for their own self-interest or that of a few powerful interest groups. The goal of prevention is one that clearly transcends those partisan political interests, and so the use of prevention-oriented activities is a way of demonstrating a commitment to the wider community.

Proposition 6: The prevention-oriented focus on systemic causes reproduces the authority of state control over industry operations.

Another conclusion that can be drawn from a more holistic view of the entire history of the aviation community is that there appears to be a ratchet effect with prevention-oriented explanation practices only expanding, never diminishing over time. The story of aviation suggests that prevention activities, once in place, are difficult to remove or reduce over time, and further, that they tend to lead to expansion in the scope of these activities as well. There is no part of this record in which prevention-oriented practices waned in their use once established. Quite to the contrary, they seemed to only expand over time as their initial introduction led to incentives or problems that only expanded their use and jurisdiction.

The ratcheting effect of prevention-oriented practices is likely due to the combination of publicity and community-wide benefits associated with them that creates almost instant community interest in preserving these practices. The difficulty of removing prevention-oriented practices once in place is that it would be instantly known, and further, it would symbolically appear to be removing a potential benefit valued almost universally.

The ratchet-effect may also be due to the creation of independent, professional organizations dedicated to prevention like the NTSB that can facilitate the diffusion of

these practices. The introduction of the near miss system like the ASRS was directly the result of the creation of the NTSB with a singular mandate focused on preventative-learning from negative events. For the NTSB the creation of a near miss database was something politically routine rather than politically exceptional.

Proposition 7: The prevention-oriented causal explanation practices, once established in a field, intrinsically generate political benefits that make them persist and even expand in scope of use.

IMPLICATIONS FOR FUTURE STUDY

The theory of the politics of prevention generated here has implications both for the study of organizational politics and the practical matter of preventing misfortunes. The most general of these implications is that there is a necessary connection between causal explanations for misfortunes and authority.

Already Douglas (XXXX) has theorized that direction of blaming reflects and reproduces the authority structure in organizations, and the theory developed here suggests the same for prevention-oriented causal explanations that focus on systemic causes as well. The systemic causes, instead of building authority through creating a sense of threat, instead build authority by providing opportunities to demonstrate both commitment to community welfare and to avoid blaming in a way that might challenge the political order (such as managers at the top of a hierarchy). Although these may appear to be different theories – one of blame, the other of prevention – there is a commonality to them in that they are both about causal explanations and authority. This raises the question of whether all causal explanations are part of reproducing or changing authority structures.

There other reason to suggest a general connection between causal explanations and authority in modern organizations is that both are about control. Authority in a modern, rationalized, task organization presumes the ability to control that organization and its outcomes, but misfortunes are incontrovertible evidence of a lack of control over the organization and its outcomes. Consequently, misfortunes always raise the question of the efficacy of the existing political order in organizations, and in this way the causal explanations for misfortunes are always tied to authority.

The issue of whether the explanation of misfortunes is necessarily connected to reproducing authority has yet to be systematically explored. The examination of the politics of prevention-oriented causal explanations is only a first step in what is a potentially important addition to political theory of organizations. Misfortunes are relatively routine occurrences in organizations, and so the explanation of the cause of negative events can be an ongoing and routine way of reproducing political order that is central to organization. If there is a general connection between misfortune and authority, it would suggest that uncontrolled and unwanted events are a stream of opportunities for strengthening the political order.

The theory of the politics of prevention raises the question of whether aviation-style prevention practices can be exported and maintained in industries without the mixed authority structure of state and private control over operations found in aviation. The management by federal agencies of day-to-day operations is relatively rare in the United States. Generally federal industrial policy is for state agencies to play a direct role only

when an industry is emerging, and then yielding control over assets to private firms (Dobbin, 1994).

So if a mixed authority structure is a requirement for introduction of prevention-oriented causal explanation practices, this is a major obstacle to diffusion of these practices to most other industries where the state acts as regulator only. The fact that few industries have achieved the level of prevention-oriented causal explanation practices as aviation suggests, at least anecdotally, that there may be relatively general political barriers to prevention that require study beyond the single case of aviation. A study of the politics of prevention in other settings would be necessary, however, to draw any conclusions about the necessity of a mixed authority structure.

An additional venue of research suggested by the study of aviation is how the politics of prevention may work in reverse, and prevention-oriented causal explanation practices are used to change the existing political order, rather than to accommodate it. It is equally possible that prevention-oriented practices might be used to create political conflict and change as much as to settle it. It is theoretically possible that prevention-oriented practices in other settings may have an unintended consequence of opening up the field for changes in the authority structure later on. This use of prevention as tool for political change, rather than political stability, remains an important question for further study.

The final implication from this study is that potentially the role of liability laws as barriers to preventative learning may be more complicated than is often considered. One common argument across industries as to why there is no sharing of information publicly about accidents is politically impossible because of the liability laws in the United States

that make any such disclosures likely to be very expensive for the firms and individuals involved as they open them up to lawsuits. For example, physicians have often complained of legal liability laws in the U.S. as a barrier to any public sharing of information about those errors for preventative learning (Senate Hearing, 2001: 36,73,167-170).

This research suggests that more research needs to be done on how politics moderates and mediates the effect of liability laws. Liability concerns do not trump the necessity of maintaining political order, as shown in the case of aviation. A descriptive theory of causal explanation practices should offer an explanation of how political context creates variation in the effects of institutions such as liability law, rather than using liability law as independent, exogenous, explanatory variables.

In conclusion, this study opens at least as many questions as it has answered. It has clearly demonstrated that there is a political value to prevention, but alerts us to the potential that there may be a more general relationship between causal explanations for negative events and political order in organizations. The conceptual framework developed here should be useful for exploring these issues further.

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¹ Some restrictions do apply. Individuals must report the incident within 10 days for immunity, and the FAA can still prosecute them for any violations of rules or regulations if it is discovered by other means. In addition, there is no protection for gross negligence, misconduct, or criminal behavior.

² For example, in 1931 the national celebrity Knute Rockne died in a highly publicized aircraft accident. Knute Rockne was nationally famous, and beloved, coach of the championship Notre Dame football team. Although the investigation into the crash led to prohibitions against using certain wooden-frame aircraft it produced no general reform in aviation or any Congressional investigation (Komons, Nick A.

1978 Bonfires to beacons: Federal civil aviation policy under the Air Commerce Act 1926-1938. Washington, D.C.: Federal Aviation Administration.: 183-189).