On Cogency, Professional Bias, and Public Policy: An Assessment of Four Views of the Injury Problem

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INJURY CONTINUES TO ATTRACT THE ATTENTION OF the scientific and professional communities intent on exploring its scope and seriousness as a widespread public problem and fashioning explanations for its causes. There is good reason for such work—injury is currently the leading cause of death among individuals of ages 1 to 44 and accounts for a greater number of years of potential life lost than any other single cause, nearly twice that of heart disease and stroke, its closest competitors. As the National Academy of Sciences states in a recent report (1985): "Injury causes almost half the deaths of children aged 1–4, more than half the deaths of children aged 5–14, and nearly four-fifths of the deaths of persons aged 15–24." In short, injury is *the* major health problem facing young people today. The question that immediately comes to mind is why have we as a society allowed this situation to persist? Certainly, much has already been done, for example, in the area of motor vehicle injuries, but for many it has been both too little and too late. Even when the technical knowledge to prevent injury exists, there is a seeming reluctance on the part of our social and political institutions to act on this knowledge to reduce premature death and disability. Have all the easy or inexpensive fixes been made? If so, the prospects for future reform may be dim indeed.

The problem of preventing injuries from this viewpoint extends beyond the issue of enhancing data collection or of improving the

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effectiveness of various interventions. For injuries to be prevented, society must not only recognize the magnitude of the injury problem and have solutions available but be willing to act collectively through its policy-making institutions. Yet, even in the many instances where injuries could be prevented with proven, costworthy measures, there appears to be an absence of social resolve in the United States to move decisively toward greater safety. Consider both public and corporate resistance to passive restraint systems and speed-control devices in automobiles, to handgun restrictions, to controls over hazardous sports and recreational activities, to the redesign of aircraft and farm machinery, and the unwillingness of many to demand and employ the protective measures that are available. How can we account for this lack of resolve, often compounded by the inertia of our policy-making institutions, and what, if anything, can be done about it?

Several institutional explanations might be offered for why the pace of reform has been slow at best. To account for legislative inaction, for example, we might focus on the process of political agenda building (Kingdon 1984; Polsby 1985) and on the relative performance of organized interests in lobbying for and against various safety measures. The story here centers on the interplay of political and economic interests and charts the ebb and flow of corporate opposition and citizen advocacy, an approach widely used to account for the piecemeal pattern of reform in health policy generally (Alford 1975; Starr 1982; Marmor and Christianson 1982). Turning within government agencies, a similar explanation can be built around the political conflicts producing a "regulatory stalemate" experienced by federal agencies, such as the National Highway Traffic Safety Administration and the Consumer Product Safety Commission, at the hands of powerful interests (Noll and Owen 1983).

All of these accounts share the belief that the case for more aggressive injury prevention is simply not getting across to the public officials who might make a difference, owing either to the strength of the organized opposition or to weaknesses in the political standing of its advocates. By these lights, when reform does take place, it will typically either be championed by a political entrepreneur, as was the launching of the Consumer Product Safety Commission and the Occupational Safety and Health Administration (Wilson 1980), or it will ride a groundswell of public outrage, as has the social campaign against "drunk driving." Nevertheless, assuming that the case for a

particular prevention policy can overcome social and institutional barriers to political action, its program of reform may still encounter a more fundamental kind of resistance based in norms and values.

In these circumstances, getting the "facts" across may be less crucial than building them into a cogent argument that will motivate as well as justify reform. The professions taking a public stance on injury issues—including law, medicine, public health, and economics—have played a substantial role in the framing of such arguments and thus, in many instances, have influenced the course of reform. As Robertson (1984) points out, however, injury policy is an area beset by conflicting views over what should be done, by whom, and why. To the extent that these professions fail to speak in one voice, they may contribute more to the nurturing of resistance than to the cogency of arguments for action.

Although cogency, like beauty, may be in the eye of the beholder, positions taken along several dimensions of conflict, common to disputes over injury policy, will largely determine the measure of an argument's external appeal. Conflicts over emphases on the individual versus the environment, over paternalism versus harm to others as grounds for intervention, over autonomy, freedom of choice, and the reasonableness of certain risks, can all be represented in the form of dimensions, each admitting a wide range of positions. In this article, several of these dimensions will serve as reference points for assessing the respective positions of the professions in the formation of cogent arguments and for determining when these positions are likely to operate at cross purposes.

While cogency is largely a matter of arguing from positions that policy makers find persuasive, intramural disagreements among the professions act counter to the force of cogency and leave the fate of injury proposals to political factors and chance. Other things being equal, the compelling arguments that prompt action generally demand both cogency and a convergence of expert views. To be sure, an unpersuasive argument will have little force; but a persuasive one that remains inconclusive, that is, without the support of intramural consensus, is unlikely to motivate policy intervention. Thus, according to this view, cogency is a necessary condition, and professional consensus a sufficient one, for an argument to overcome resistance to action based in beliefs and social values.

This article traces the prospects for cogency and consensus, and

ultimately for policy action, to the premises underlying each profession's view. These premises effectively constrain the positions that a profession is likely to take along any dimension of conflict. Individuals are not necessarily bound to a given set of premises—the most notable migrations include physicians crossing into public health and lawyers into economics—but such premises do create a widely shared presumption in favor of certain positions.

A concern with the link between premises and differences in professional points of view represents a departure from the axiom that most conflict boils down to a question of priorities. It is not the priorities but the premises that represent the real sources of disagreement; the core issue is not whether equity considerations should outweigh efficiency ones, for example, but why equity or efficiency is important in the first place. Once arguments are understood at the level of premises, strategies for building cogency and consensus into arguments for action can then be fashioned. The analysis begins with a discussion of the premises underlying the views of four selected professions and then goes on to trace the implications these premises have for cogency and consensus.

Injury Views and Their Premises

On Premises

Each construction of the injury problem is distinguished by certain premises, delimiting the significant features of the injury event and defining the role of the individual in its occurrence and possible remedy. Because of their tie to basic beliefs about the individual, society, and modes of inquiry, premises generate valuative claims as well as empirical ones. These claims, in turn, shape the way proposed actions are justified and influence the cogency of arguments made in favor of prevention. Differences in the recommendations of any two constructions, then, go beyond prima facie distinctions among variables and models, to conflicts which cannot be reconciled without compromising the premises of the constructions themselves. The public health professional, for example, can incorporate economic variables into his or her arguments, but not the economic profession's point

of view without fundamentally altering his or her own professional view, and vice versa.

Each construction is bound to its premises in a way that leaves little room for maneuvering if its arguments happen to be rejected. One can either change premises and sacrifice the logical integrity of one's construction, perhaps grafting-on a few elements here and there, or meet the challenge head-on with as strong a justification as possible. In the case of a mismatch with the audience's premises, however, the justification offered by a given view, disadvantaged in this way, will frequently be directed at undermining the arguments of its perceived competitors. Over time, this strategy of "beggar thy neighbor" erodes the base of consensus underlying any social commitment to action. Advocacy then is turned on its head, ultimately resulting in less action for prevention rather than more. This is the real tragedy of intramural conflict among the professions concerned with health. We will return to this point in a later section.

Three types of premises are common to most coherent constructions of social problems. There are premises about: (1) the principal causal agents and mechanisms, including a problem etiology and a framework for understanding and manipulating causal factors; (2) the appropriate level of analysis, identifying important units of analysis and specifying the locus and targets of treatment; and (3) the preferred form of problem intervention, countermeasure, or therapeutic regimen. Further, these three are invariably nested, with the latter two dependent upon the first. The causal premises tend to constrain choice among levels of analysis, and once these two are set, the range of appropriate interventions is practically determined. As a result, resistance to certain kinds of interventions or certain levels of analysis can invariably be traced to an incompatible causal framework. The hierarchical arrangement of premises also makes it difficult to alter a premise about causes, even though it may appear remote to the policy argument at hand, without affecting premises on the two higher levels. Thus, compromise tends to be costly.

In the area of injury, as will be explained below, most causal premises are linked in some way to assumptions about choice and its consequences. Because of their prominence in the hierarchy of premises, these assumptions will provide a convenient reference point for comparing different constructions and speculating on the relative cogency of their arguments. The next section assesses the premises of four selected

constructions of the injury problem, each corresponding to the view of a profession with an interest in setting the course of public policy on injury in the United States. Attention will then turn to the comparison of these constructions and to how their differences and the intramural conflict that results might account for the lack of a broad-scale policy commitment to prevention.

The Four Injury Views

Although there are many ways of viewing injury, at least four perspectives emerge as basic rather than derivative. There are undoubtedly other basic views just as worthy of inclusion, but the four selected should illustrate the importance of premises for understanding why some arguments seem to prompt action. As is often the case with government interventions, many injury prevention measures are precipitated by episodic crises, or by events the public perceives as crises. Nevertheless, in order to highlight the role of reasoned justification, these and other contributing factors deserving of separate treatment will be taken as constant.

The four views can best be labelled by the profession espousing them. They are: the *medical, public health, legal,* and *economic* views. Other views of injury, such as the political and the behavioral, tend to cut across the premises and arguments of these basic four. Each view interprets the injury event in terms which emphasize its similarities to a class of problems the profession regards as central. The legal profession assigns a certain portion of injuries to the class of wrongful acts known as torts, economics to the class of market failures, and public health and medicine to the class of preventable diseases. In each instance, the explanatory constructs and remedial interventions applied to the class as a whole are extended to cover injury. Since our focus is on injury control, we need only include the subgroup of injury problems considered amenable to prevention.

To be sure, no one depiction of a profession can capture all of the diversity within it. There are internal conflicts over values, methods, and emphases, splintering any given profession into fields and schools of thought. Nonetheless, for the purposes of this discussion, we will concentrate on the intramural or between-profession variation in the presumptions or prima facie positions typically assumed by a given profession and concede that most within-group departures introduce

error into this representation. The emphasis here is upon capturing the basic elements of a profession's point of view. Whether these elements represent the modal views of its members, the rudiments of a professional ideology, or simply the biases implicit in its theories, they provide a set of reference points for understanding how easily conflicts over problem definitions and recommended remedies can arise.

Unfortunately, this approach overlooks a corps of safety professionals who are veterans of many injury-control battles. Their pragmatism and technical acumen facilitates movement across jurisdictional boundaries to capture complex variations in the contributions of behavior, hazard concentrations, and the environment to different phases of injury. For the most part, they defy classification but can be distinguished by their confidence in an applied-science orientation that emphasizes testing and empirical demonstration.

The first two views under consideration, the medical and public health views, are closely tied to notions of disease and its physical manifestations. Yet, the premises of these views are quite different and lead to justifications for action which often conflict. In each case, premises are drawn from a particular framework for organizing causal factors, a locus of treatment for altering these factors, and a particular set of countermeasures or therapeutic regimens. Although analyzed, in part, from the viewpoint of the "medical model," injury does not fit the standard definition of "medicalized" problems (Conrad and Schneider 1980), with its connotations of deviance and compulsion. Rather than exempting the individual or society from responsibility for injury as with other "medicalized' conditions, the public health and medical views are explicit about where responsibility lies.

The Medical View

For medicine, injury has much in common with the "preventable" diseases, those acute and chronic conditions whose incidence can be lowered with specific measures, such as screening for risk factors and patient education. The locus of treatment is the physician-patient relationship, which permits the physician to advocate precautions and a certain standard of care calculated to reduce the patient's likelihood of injury. Following the principles of preventive medicine, injury is not accidental or random but has behavioral and environmental an-

tecedents (Murphy 1976). Prevention, then, depends on altering one or the other of these conditions. Given the locus of treatment, however, attention tends to focus on the behavioral factors under the patient's control and thus most accessible to the physician's influence.

The orientation to behavioral factors is reinforced by the etiological framework of general medicine which arranges the potential causes of disease in a hierarchical fashion, assigning priority first to factors internal to the individual and moving outward to the behavioral, environmental, and finally social and cultural factors (Gray and Fowler 1983). In dealing with self-imposed risks, such as motorcycling, behavioral factors appear more salient than any organic ones, especially in the pre-injury phases of the injury event. Environmental and social factors are given relatively less attention, consistent with their position in the causal hierarchy.

Moreover, behavioral factors have been widely implicated in premature deaths from a variety of diseases other than injury. The medical establishment has assigned many of these factors to a single category known as "unhealthy lifestyles," adopting a popular term that has served both as a rationale for social deviance and a label for consumption patterns (Knowles 1977; U.S. Department of Health, Education and Welfare 1979). Preventing injury then, is simply a matter of cultivating "healthy lifestyles" and avoiding those faulty behaviors that increase the chances or severity of injury. The appropriate therapy for promoting a healthy lifestyle is patient education and, in cases where education fails, emergency medical treatment. To the extent that medicine focuses on primary prevention in addition to acute care and rehabilitation, it will tend to employ the same reductionist methods that have worked so well in its approach to diseases (Caplan, Englehardt, and McCartney 1981).

By attributing injury to unhealthy lifestyles and faulty behavior, the individual is made responsible for any untoward consequences; however, according to this view, it is not human error so much as bad judgment that leads to injuries. Accordingly, the burden of safety falls largely on the individual risk taker or user of potentially hazardous products. Mandatory, automatic protection becomes appropriate only for those risks which cannot be controlled through the exercise of reasonable care or the adoption of available safety measures. The view of the behavioral sciences applied to injury control is consistent with these premises. Much of this work is devoted to increasing the adoption

of safety measures through the use of reward and penalty schemes (Brigham and Brown 1980). In either case, changing the individual's behavior in some way is seen as the key to prevention.

The Public Health View

The public health view also finds that injury has much in common with disease but emphasizes its parallels with communicable disease; this changes not only the locus of treatment, but also the etiological framework and therapeutic regimen. The locus of treatment for communicable disease is the community rather than the individual. All susceptible individuals must be treated, preferably before the initial outbreak of the disease; otherwise the community as a whole remains vulnerable. Accordingly, the burden of prevention falls on the community to ensure that its members are properly protected.

The concept of causality shifts from the hierarchy of organic factors to the mechanisms of contagion. Emphasis is placed on the interaction of factors rather than on the sufficiency of any one. In simple terms, pathogens—in the case of injury, kinetic or chemical energy—are transmitted from the environment to the human host by means of some agent or vehicle. Prevention involves the interruption of this transmission process by either protecting the host from the interaction, by disarming the agent, or by altering the environment (Susser 1973). Since the environment affects the susceptibility of the host and the virulence of the agent, as well as the nature of their interaction, it is often seen as the preferred point of intervention (Baker, O'Neill, and Karpf 1984).

Environmental changes involving design modification or safety devices are generally beyond the capacity of any one individual; hence, the community, once again, becomes the proper focus for "treatment." Although individuals vary in susceptibility to injury and exposure to environmental hazards, their actions alone are not the cause of most injuries (Haddon 1980). Aside from criminal acts and cases of diminished competence, injuries are unintentional; after all, no one wants to be injured. Consequently, determinations of individual responsibility and fault are not only irrelevant, the argument goes, but distract attention from the more pressing problem of protecting the community from harm.

While this characterization is somewhat at odds with the depiction

of public health in the surgeon general's report *Healthy People* (U.S. Department of Health, Education and Welfare 1979), featuring lifestyle reforms as a "second revolution in public health," and in the earlier Lalonde report (1974), I follow their critics (Crawford 1977; Neubauer and Pratt 1981; Forster 1982; Weale 1983; Beauchamp 1985) in ascribing to public health a more exclusive focus on primary prevention for the community rather than for the individual. From a community standpoint, it does not matter whether the injury is the result of a fully voluntary assumption of risk, or whether the consequences of this risk result in harm only to oneself. The fact of injury suggests a harmful human-environmental interaction best remedied by community-wide countermeasures directed at hazards in the environment. Measures directed at changing individual behavior either through persuasion, inducements, or threats of punishment, on the other hand, often misconstrue the individual's role in injury.

Episodic vigilance and risk avoidance, according to this view, will not prevent injuries any more than they will prevent infectious disease. Implicating lifestyle choices and faulty judgment in injury inappropriately assigns the obligation for prevention to the individual and thereby "blames the victim." As a result, the argument goes, injury comes to be perceived invidiously as individual failure, not only exempting the community from responsibility but creating a need for social excuses based on "bad luck" and victims' undesirable traits.

The Legal View

The legal view focuses on the role of common law in deterring injury to individuals through complex rules for defining liability and ultimately assigning the risk of any losses that might occur. In contrast to a state's exercise of its police powers, the intent of the common law is not primarily to prevent injury but to impose a remedy, typically involving compensation to the injured, based on a particular system of liability. Liability rules generally specify who will bear the financial burdens connected with any harms that result from product defects, system failures, hazardous activity, or unreasonable interference (Prosser 1971).

Instead of protecting the community by directly controlling hazards, the common law offers an indirect inducement for manufacturers, or for others engaging in potentially dangerous or offensive activity, to

exercise reasonable care. The prospect of having to compensate for any wrongful loss serves as an incentive to provide adequate protection. The intent then is not to curtail risk taking but to require a balancing of the costs of increasing the margin of safety against the costs of having to provide compensation to those injured inadvertently. To justify the private law equivalent of a countermeasure, the injured parties must be able to attribute their harm to the action or choices of a particular party. In situations where the losses from injury arise from voluntary or self-imposed risks, however, no legal remedy is typically provided. Although the outcome may be tragic, it is not considered wrongful and no compensation is in order. To a large extent, the wrongfulness of one's injury hinges upon the voluntariness of the risk; that is to say, whether the choice of, or consent to, the risk was both adequately informed and reasonable.

Thus, the causal framework of the legal view of injury rests squarely on an interaction between identifiable parties. While environmental factors may play a role, they are relevant only to the extent that they serve as a mediating element in this interaction. Injury from this view is ultimately a product of choices made by some party. Unlike the medical view, however, the injuries subject to remedy are only those wrongfully imposed by the choices of others. For this reason, the ability to link potential harm to a responsible individual is more important than identifying hazards. Outside the context of individual choice and wrongful loss, simple exposure to hazards is not an issue in private law. Public law statutes and administrative rules, on the other hand, redefine the scope of concern to include permissible exposure levels and concentrations for a wide variety of hazards.

To control injury, liability rules must rely, not on the community, but on autonomous parties, capable of balancing costs, taking precautions, and being held financially accountable for the imposition of wrongful losses. In situations where any of these conditions are absent, liability rules lose their capacity to promote safety. If a party is incompetent, uninformed, or under duress, the issue of reasonable care becomes clouded, and prospective liability can no longer be counted on as an inducement to prevent injury. Further, if the amount of care exercised makes no difference, then the assignment of risk becomes arbitrary and ineffective as an inducement to safety. In both of these cases, the court might welcome claims of a compelling state interest to justify coercive measures for limiting exposure to risk.

The Economic View

The fourth perspective views injury as the outcome of an implicit tradeoff between the costs and benefits of prevention. For society as a whole, the optimal level of injury is one that minimizes the combined costs of prevention and injury. When the costs connected with a potentially injury-producing activity, however, are smaller for the individual engaging in the activity than they are for the rest of society, risk taking is effectively subsidized and injury rates will rise above the socially optimal level. Similarly, inadequate information may lead to underinvestment in injury prevention. From a social perspective, resources will not be allocated to their highest-valued use, since there is likely to be too much risky activity and too little protection.

The source of failure, however, is not one of inadequate limits on individual behavior, or of faulty judgment, but of poor coordination. In other words, much of the injury problem results from people doing the wrong thing at the wrong time in relation to what others are doing. The causal framework for the economic view of injury shares the legal focus on the interaction of individuals. The economic view, however, tends to be more prospective than the legal, dealing with problems of coordination rather than with retrospective remedies of wrongful loss.

In a properly functioning market, risky behaviors would be fully coordinated. Individuals would not only face the appropriate incentives for generating a socially desired level of safety, they would also have adequate information and insurance for accommodating risks according to their tastes (Arrow 1983). In effect, the issues of liability and compensation would be worked out ahead of time on a voluntary basis. Appropriate standards of care would be established in the aggregate by individuals trading-off the costs of greater protection against its benefits. When these things are not happening, it is not enough to note that the market has failed, one must find the obstacles to coordination and remove them. Countermeasures, then, are intended to mimic the coordinating signals of a working market by correcting incentives and furnishing information. These measures, however, are themselves costly and must be weighed against alternative measures in determining the optimum level of intervention.

Although the economic view shares the individual as the locus of treatment with the legal and medical views, it attributes injury that

departs from the socially optimal level to the market's failings rather than to those of individuals. Distorted incentives and faulty information are singled out, rather than human error and bad judgment. More generally, if individuals face the same budget set and their behavior differs, either they have different tastes or different information. The possibility of mistakes has no place in this causal framework (Russell and Thayler 1985).

From this perspective, it makes little sense to restrain the informed individual from taking risks, once incentives are properly aligned so that no involuntary or uncompensated costs are imposed on others. Thus, the real difficulty in preventing injury lies, not in devising a standard of care or controlling exposure, but in determining and adjusting for the proper alignment of incentives and mix of information. Justifying these measures goes beyond the question of how to assign liability for certain costs to what the optimal level of safety should be for the society.

The search for this optimal level begins with estimating the tradeoffs that would occur in a well-functioning market. Consistent with a market benchmark, the relative worth of safety measures should ultimately be based on the value that individuals place on any resulting reductions in risk. Public resources, then, are best allocated in a fashion consistent with this value. As a general rule, exceptions aside, public policy should permit no less safety than the amount people would be likely to purchase—if they had the opportunity—nor should it require more, however.

Linking Premises to Interventions

With each view, the causal framework imposes certain constraints on both the level of analysis and the choice of interventions. While there are potentially as many kinds of interventions as there are injury situations, the principal classes of intervention can be arranged in a hierarchy based, in part, on the level of intrusiveness for the individual and the amount of governmental bureaucracy required. At one end falls the intervention based in education and training, intended primarily to inform and to impart certain skills; examples range from hazard labeling to driver education. Next comes the use of inducements, encompassing rewards and penalties, intended to encourage certain desirable forms of behavior. Statutory and administrative rules mandating

certain behaviors come next; and finally, at the other end come rules mandating design changes in the individual's environment.

It makes little sense to consider inducements to the individual as the principal form of intervention when an injury is viewed as a consequence of certain environmental interactions. Offering rewards for individuals to wear their seatbelts has little appeal from the public health view as compared to passive restraints that require no individual compliance. Likewise, proposals for design changes in the environment are difficult to accept when the injury problem is viewed as one of imperfect information. Why impose regulations on the work place, the economist might argue, when informing the workers will control injuries? Unfortunately, the policy debate seldom extends beyond the interventions themselves and is thus restricted to the surface of the more fundamental and enduring differences among the views represented here. Stipulating the fruitfulness and legitimacy of contrasting premises might go a long way toward defusing conflict over recommendations reached from very different starting points.

Analytically, attention to the premises of a given view can explain a particular set of policy recommendations and help identify the sources of predictable conflict with other views. Arguments for education as a strategy for encouraging changes in "lifestyle," for example, are logically tied to a belief in individual control over, and responsibility for, health and safety. Since their premises are not very far apart, arguments for enhanced liability as an inducement to changing behavior will seldom be at odds with those advocating lifestyle changes. Although representing a different intervention, each focuses on elements of individual responsibility and their role in prevention. On the other hand, the views of public health professionals are less likely to be supportive of this kind of intervention, as compared to, say, automatic protection, since their premises are quite different. Differences in kind among interventions advocated by distinct views are an imperfect indicator of incompatibility and conflict. The only reliable warning of intractable conflict appears at the level of the premise.

Comparing the relative inclusiveness of premises can lead to predictions about the areas where the recommendations of different views are most likely to overlap. Because of the selectivity required of its causal framework, each view must leave some phenomena unexplained and thus unaccommodated. These lacunae can often be filled by views with contrasting premises. In these instances, interventions can be

agreed upon and conflict avoided. Intramural compromise, however, need not be responsible. Agreement can come from the simple absence of a competing premise on which to build a recommendation. Measures to control manmade hazards that were unforeseen and yet remain unavoidable (radioactive wastes), measures that are both inexpensive and lifesaving (life preservers, fire exits), measures that protect the incompetent (child-proof safety caps), and so on, can all be justified from one view (public health in this case) without raising serious objections from the others. Nonetheless, most of the "easy" cases—where agreement across the views is possible—have probably already been acted upon.

Having presented the premises of the four views, compared them, and reflected on their importance, attention now turns to the issues of cogency and intramural consensus and their bearing on arguments for reform.

Cogency, Consensus, and the Dimensions of Conflict

Much of the above discussion has focused on comparisons across views to emphasize the contrasts among their premises. To understand how these premises affect the cogency of arguments, the comparison must now be extended to the presumptions that these premises create. The presumptions of particular interest are those that constitute a prima facie position along several of the principal dimensions of conflict underlying injury policy. Commitment to a set of presumptions effectively restricts the "degrees of freedom" the professions have for positioning themselves along these dimensions. As a result, a view can be relatively locked-in to a set of positions which may have little meaning or appeal to a given cast of policy makers. The outcome, in the short term at least, will be inaction on their arguments.

Three dimensions—voluntariness, infliction, and avoidability—will be treated, each in a subsequent section. The first dimension, voluntariness, focuses on the conditions of choice and addresses the more general conflict over how much freedom of choice is involved in the assumption of any given risk. The second dimension, infliction, shifts attention from risk to the incidence of any subsequent harms. The general issue here is whether government intervention should mitigate harm that affects only the risk taker or be limited to instances where

the harm affects others as well; this is the, by now, familiar clash between principles of paternalism and liberalism. The third dimension, avoidability, also focuses on harm, but has more direct implications for the form of intervention favored. The wider conflict represented here is over the individual versus the environmental as the primary focus of intervention.

Voluntariness of the Risk

For choice or consent to be voluntary, at least two conditions must be satisfied. The individual must be adequately informed and under no restraint or coercive pressure. In assuming a risk, voluntariness implies that the individual understands the nature of the hazard and the significance of his or her exposure to it and has freely chosen to do so. As the reasonableness of the risk changes, however, our perception of the adequacy of these conditions can change as well (Feinberg 1986). A self-endangering action that appears to have little more than thrills to gain may seem unreasonable to us. In fact, it may seem so unreasonable that one can begin to doubt the competency or rationality of the individual in having made such a choice. Under these circumstances the assumption of risk becomes viewed as nonvoluntary.

The issue separating the professions on their standards of voluntariness is their respective views on the reasonableness of a given risk. Reasonableness depends first on the risk involved; how large is it, and how serious? More important, it depends on why the risk is undertaken, that is, on how important the desired goal is to the individual. The more important the goal, the higher the risk one can face and still be considered a reasonable person. To the extent that one is willing to question the individual's judgment of worth, however, most risks can be made to appear unreasonable and thus nonvoluntary. This is the core of the consumer sovereignty or "freedom of choice" debate. Who shall decide whether a given activity is worth the risk?

At one extreme, economists admit a wide range of different personal preferences regarding the assumption of risks. Individuals not only perceive risks differently, regardless of the "objective" estimates of probability; they can best judge the worthwhileness of a given risk for themselves. The threshold of voluntariness in this instance is quite low. Law, on the other hand, is typically willing to accept the community's judgments about worthwhileness. A certain standard of care

might be used to infer that an individual's unreasonable choice could not have been adequately informed. The threshold of voluntariness is a bit higher here, depending on how risk acceptant the community is. Medicine uses a similar tactic but the standards of reasonableness are more likely to be its own. Finally, public health largely bases its judgment of reasonableness on the objective probability of death.

While economics can admit that an unreasonable choice can be perfectly voluntary, public health links the two in a simple formula: the higher the risk of death, the less voluntary is the assumption of that risk. Classifying a risk as nonvoluntary provides a strong justification for protecting the individual from choices that were not his or her own. There is no impingement on individual autonomy when the intervention alters activities that were nonvoluntary in the first place. The ultimate effect of the intervention then may be to restore autonomy that was lost. Voluntariness is closely linked with arguments regarding paternalism and the dimension of conflict referred to here as infliction.

The Infliction of Harm

Voluntariness focuses on whether or not the individual has freely chosen to face a given risk; if so, he or she assumes the role of "risk taker." Infliction introduces the notion of risk bearer into the picture. The risk taker chooses to be exposed to risk, while risk bearers shoulder the consequences of these choices. To the extent that the risk taker assumes all of the risks, he or she also becomes the risk bearer, any subsequent injury then becomes both self-inflicted and self-regarding. On the other hand, when the risk taker shifts even a portion of the risks to others, they become risk bearers without their consent; injury to them is inflicted by the risk taker whose actions were other-regarding. The self- and other-regarding distinction can be traced to John Stuart Mill's efforts to develop a criterion for government intervention compatible with liberal ideas about liberty.

More attention in the literature has been given to the infliction issue than to the other two, since "harm to others" has historically played a prominent role in justifications for government intervention (Barry 1965). Justifications for preventing such harm typically take root in either obligations of nonmaleficence or the other-regardingness of social cost calculations. For "harms to self," on the other hand, claims of self-regardingness and personal autonomy originally intended

to fend off any public interference have been met with counterclaims for paternalistic interventions (Regan 1974; Wikler 1978). The presumptions of all four views—medical, public health, legal, and economic—on the infliction issue can be linked to one or the other kinds of arguments. Owing in part to the deference our political culture pays to values such as privacy and individual liberty, liberal justifications based on the harm-to-others principle tend to be favored over paternalistic ones. Accordingly, other-regardingness is typically distinguished from and elevated over self-regardingness as a cause for governmental action (Weale 1983).

For the legal, economic, and medical views, self-regarding injuries are unfortunate but, in most instances, should not be addressed by a governmental remedy. So as not to discourage productive sorts of risk-taking, the risk of untoward consequences for any one individual might be spread among risk takers through an insurance mechanism. The public health view, consistent with its premises of causal interdependence, generally holds that any self-regardingness pertaining to injury is a fiction; injuries have a social impact which appears in both material and nonmaterial forms. The difficulty for these latter views arises when the policy-maker's presumption is to classify certain types of injury as self-regarding. Arguments for intervention then must either take on the burden of constructing a compelling, paternalistic justification or rebut the "self-regardingness" designation.

Avoidability of the Harm

While voluntariness encompasses consideration of whether certain risks are freely chosen or consented to, avoidability focuses on the capacity of the individual to avoid any subsequent harms or to reduce their severity. The general issue is where the weight of responsibility and burdens of prevention should be located. At one extreme, the individual exposed to a potential hazard is viewed as solely responsible for any injury, while at the other, the hazard itself is seen as the key factor. Positions along this dimension will vary not only with the type of hazard at issue but also with the biases of the professions regarding the role of the individual. Further, as we move from one extreme to the other, the preventive measures found appropriate to a given position change as well. Measures such as doing nothing, supplying information, providing incentives, regulating behaviors, and imposing design changes

follow the ordering of positions from the individual to environmental extremes, from the fully avoidable to the unavoidable.

If the individual is the presumed locus of treatment, avoidance becomes a strategy worth pursuing. Equipping the individual with proper tactics, and information on when to employ them, may facilitate avoidance. On the other hand, with the community as the presumed locus, avoidability becomes implausible at the individual level. Regulatory standards to protect people from potentially defective products, child-proof containers, ordinances requiring life preservers, smoke alarms, and skid-resistant walkways are all consistent with this position. If the presumption is one of capable avoidance by the individual at risk, information may be all that is required. The warning label and caution sign then become the prototypes of intervention. Finally, a presumption of full avoidability makes it difficult to argue the necessity of governmental involvement in prevention.

Consider the contrast between the legal and public health views on avoidability. From a causal premise that defines a substantial role for the voluntary risk taker, the legal view infers that the vast majority of personal injuries appear to be connected with reasonably avoidable misjudgments and error. According to a former chairman of the Consumer Product Safety Commission, most experts place the product-caused or standards-preventable portion at somewhere between 15 percent and 25 percent of the total product-associated injury figure; the balance goes to user error (Adler and Pittle 1984). Conversely, the causal premises of the public health view work to minimize the individual's complicity in injury, in many instances leading to the claim that avoidance by the individual is simply out of the question.

If exposure cannot be minimized by the individual, due to cost or complexity, no amount of information or inducement will have any effect; controls must then be automatic or passive. On the other hand, if exposure can be reduced by an appropriate level of care, incentives and education will have an important role to play. Much is at stake in establishing which is the proper view, since the costs of compliance and enforcement will differ widely between these two modes of intervention.

The Interplay of Cogency and Intramural Disagreement

Having carefully depicted the sources and prevalence of intramural disagreement, attention can now turn to assessing its significance.

Does intramural conflict affect the outcome of policy proposals, and is it responsible in some way for the policy inertia afflicting many areas of injury? The answer rests on the connection between levels of cogency and disagreement. Before proceeding, a few refinements are in order.

Up to this point, cogency has been viewed as a function of an argument's extramural appeal. In terms of the dimensions of conflict introduced above, this appeal might be measured by the distance between the positions of the policy maker and those of the profession. Similarly, the level of intramural disagreement might be captured by the variance in the positions of the four professions along each dimension. Thus, a given argument could be considered cogent, depending on the policy-maker's position, and at the same time be in profound disagreement with its peers. According to this simple description, the prospects of an argument's adoption might be significantly improved by accommodating a policy-maker's presumptions, regardless of the level of intramural conflict.

The key point, however, is that in a pluralistic political system, there is no one policy maker or set of presumptions that can guarantee success. Accordingly, a high level of cogency rests on convincing a large enough number of policy makers to precipitate action. A low level suggests that too few have been convinced. When intramural disagreement is high, as we have seen, there is wide variation in the nature of the proposed interventions; conversely, when disagreement is low, similar interventions are likely to be represented. Now consider how these conditions interact. When both cogency and intramural disagreement are high, many policy makers may be convinced, but on a wide range of proposals. The optimal situation is for many to be convinced on a similar set of proposals. The convergence in arguments connected with low levels of intramural disagreement facilitates the policy accommodation necessary to build stable majorities behind government action. Thus, the recipe for overcoming policy inertia involves both low levels of intramural disagreement and high levels of cogency.

Among the clearest examples of this recipe are policies regarding child safety restraints in automobiles and safety packaging and labeling. The involvement of children in each instance permitted convergence along dimensions such as voluntariness which otherwise would have proven troublesome. Nevertheless, there are other instances of intramural agreement where a low level of cogency has stymied proposals for

intervention. For example, there is moderate convergence in the proposals of all four professions for controlling handguns, and to a lesser extent, for controlling alcohol. Nevertheless, these proposals have simply not been cogent enough to prompt action. Conversely, when both cogency and intramural disagreement are high, there may be some action but it is likely to be uncoordinated and transient. The control of workplace hazards is being pulled in several directions at once, causing it to move in cycles of over- and under-regulation.

When cogency changes in the face of high intramural disagreements we can expect rather abrupt shifts in policy and commitment to injury control. Motorcycle helmets and 55 m.p.h. speed limits have always separated the professions along the infliction and voluntariness dimensions. With sufficient cogency these proposals became favored over others. Consistent with the pattern of instability described earlier, however, this favor appears to have been shortlived; a majority of the states originally adopting helmet laws have repealed them, and Congress is currently on the way to rejecting its earlier speed-limit sanctions on states.

While the positions taken by the professions change rather slowly and in relatively small increments, policy-makers' presumptions are subject to abrupt change and discontinuity over time. As a result, the same argument can go in and out of fashion, depending upon the dimensions of conflict and positions favored in any given period. In injury policy, as in other areas, there are periodic movements of expansion and contraction between the proper scope of governmental intervention and the appropriate spheres of individual autonomy. As the definition of government's role contracts and the sphere of autonomy expands, we are likely to see a diminished readiness to intervene in areas of injury presumed to be self-regarding and voluntary. In effect, the ends of these dimensions become stretched relative to their counterparts at the opposite ends and are extended to cover a broader range of injury situations.

At low levels of intramural disagreement, the positions of the professions may overlap on one or more dimensions. Two patterns are typical. First, the arguments of different views may disagree on whether certain risks are voluntary, but agree on the issue of infliction. If the question at hand is "should government be involved?" then agreement on the "other regardingness" of a particular risk can be mutually

reinforcing. The magnitude of the social costs of many kinds of injuries has become a common refrain. Once the question becomes, however, "how then should the costs of consequent harms be redistributed?" disagreement over voluntariness will prove troublesome. Voluntary risks are open to measures, such as liability rules, for converting the risk taker into a risk bearer. In contrast, nonvoluntariness implies that the risk taker should be protected from his or her ignorance or irrationality.

Alternatively, a low level of disagreement may be the consequence of an unintentional division of labor, where one view defers to another because the risk falls in relatively unsettled territory. The involvement of alcohol and drugs in injury clouds the issues of voluntariness and avoidability. Thus, the advantage falls to the views with the soundest resolution in the area. A prima facie commitment to nonvoluntariness and unavoidability gives the public health view an advantage over the legal view which obsesses over them. Similarly, the economic view has some advantage in sorting out issues of infliction because of its well-developed capacity to account for social costs.

For the most part, the arguments offered by a given view, drawing on its positions across all three dimensions, remain relatively stable: economics emphasizes voluntary, other-regarding, potentially avoidable risk, and public health, nonvoluntary, other-regarding, and unavoidable risk, and so on. On issues that separate them along these lines, each will make an effort to narrow or expand the scope of the risk to accommodate the features of its own resolution. This leads to an exercise in striving for comparative advantage. For example, economic claims that the material consequences of a particular risk are clearly self-regarding are likely to be challenged by public health claims that nonmaterial consequences make it other-regarding. The resulting pattern of adversarial claims effectively displaces the more consensual and conclusive processes of normal science, making any resolution both hard won and unstable.

In the short term, cogency is determined by factors outside the control of the professions. In the long term, however, the stability of the professions' arguments permit them to have a subtle influence on the presumptions of their extramural audience. By contrast, intramural disagreement is meliorative. A convergence of views can be fostered to the extent that efforts are made to accommodate the differences

that emerge at the level of premises. In effect, any reduction in intramural disagreement becomes an investment in the future prospects of injury policy.

On the Significance of Intramural Conflict

The framework presented here should not be understood as an effort to offer yet another single-cause explanation for a complex web of public policy making. Rather, the intent has been to examine a relatively neglected piece of this web, which, while seldom wielding decisive influence across policy contests, can have a subtle, long-term impact on the way policy makers think about problems and evaluate evidence. There is a tendency for the short-term influences of temporary political alignment, media coverage, opinion shifts, and crisis proportions to crowd out consideration of the more enduring, yet less dramatic, factors emerging from the interplay of various arguments. The more cogent arguments will not only operate at the margin, when all other things are equal, they will eventually shape the policy agenda and the criteria that order it. Ideas matter, but they often matter more in the long run than in the short one. One need only consider the metamorphosis of social regulation once economic arguments became more cogent than the traditional legal ones to appreciate the policy force of logical argument.

The method featured in this article has been to uncover the conflict among premises and trace its impact on arguments in an area that has been dependent on four professions for many of its definitions and proposed interventions. The absence of a comprehensive injury policy can be attributed to the interaction of intramural conflict and shifting definitions of cogency. In all likelihood, large-scale action must await the coincidence of perceived conclusiveness and extramural appeal. Nonetheless, as long as arguments continue to drift in and out of favor, at least some limited action will be forthcoming. A variety of mandatory protection laws will be passed and repealed, as we have seen with 55 m.p.h. speed limits, and the mandatory wearing of seat belts and motorcycle helmets. Proposals for restricting access to alcohol, handguns, and recreational vehicles, on the other hand, are likely to remain controversial, with low levels of cogency compounded by intramural conflict.

A focus on the policy significance of professional conflict arising from incompatible premises calls to mind other dimensions of intramural disagreement among the professions. Consider, for example, the debates between forensic psychiatry and law over matters of competency and criminal intent, of civil engineering and ecology over environmental impacts, and of biochemistry and toxicology over dose-response relations. These are not political or value questions better settled in the public domain (Weinberg 1972; Mazur 1973), but matters of fundamental disagreement that continually reshape public images of expertise while, at the same time, eroding any one profession's claim to authoritativeness.

To be sure, there are few public issues on which experts can speak with unanimity (the health hazards of smoking may be an exception). Some have argued (Nelkin 1984) that there are political benefits to encouraging intramural conflict rather than accommodation, thereby preventing the biases of any one profession from dominating and perhaps preempting public debate. The area of medical injury provides an illustration of intramural conflict at its best and worst. The professions of law and medicine, together with the insurance industry, are struggling to control the definition of the medical injury problem and propose remedies whose costs fall principally on the other two parties. Is it a malpractice problem, a liability crisis, or an investment problem within the insurance industry? The states have generally weighed these points of view and have sided with one party or the other. Typically, however, confrontations of this sort generate more heat than light and end up being resolved in a purely partisan, political fashion. As the political climate changes, so will the balance of resolutions.

The real issue in assessing intramural conflict, however, is not whether political resolutions can be imposed, but whether accommodations are possible at the level of the premises and presumptions that shape all professional judgment. Accommodations of this type, rather than resolution by political fiat, foster a conclusiveness that not only builds society's confidence in its professions but can eventually reshape public thinking. Any pair of professions may hold the same value in equal esteem, say, minimizing traffic fatalities, but be unable to agree on either causes and consequences or assignments of individual and corporate responsibility. These are not political matters, they are paradigmatic ones which are too seldom broached. Ironically, what is good for the arguments of any particular profession may be bad for professional arguments as a whole. While strong premises provide

a firm foundation for inference, they also function as barriers to integration and consensus formation—the forces that promote convergence and thus conclusiveness in expert opinion.

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