Policy Studies Journal, Vol. 28, No. 3, 2000 (485-501)

The Politics of Air Bag Safety: A Competition Among Problem Definitions

David J. Houston and Lilliard E. Richardson, Jr.

In light of 121 deaths attributed to air bag deployments, mainly to children and adults of small stature, recent policy debate has focused on modifying current Federal automotive air bag regulations. A problem definition perspective is employed to understand the nature of this debate. Utilizing a content analysis of the official record of one U.S. House and two U. S. Senate hearings, it is argued that four problem definitions characterize the debate over air bag safety: behavioral, regulatory, technological, and corporate greed. Furthermore, it is argued that a problem definition perspective offers a better explanation of recent changes to Federal air bag regulations than do pluralist, elitist, and principal-agent models.

Political debates on policy issues are often portrayed as a conflict over competing definitions of a social condition (e.g., Coughlin, 1994; Portz, 1994, 1996; Sharp, 1994). A problem definition provides the frame through which current conditions are perceived to be in conflict with treasured social values. In this way, policy problems are socially constructed and communicated through the articulation of shared definitions.

Problem definitions are important to policy theory in two ways. First, they influence which issues rise to the public agenda. Definitions provide a frame through which social conditions are perceived to be problematic and in need of government action. Thus, the issues that are actively considered by government officials are in part explained by the success of a definition competing for attention on a crowded agenda (Cobb & Elder, 1983; Kingdon, 1995).

Beyond explaining which issues are on the public agenda, the problem definition perspective also can help explain the outcome of the policy process. "As political discourse, the function of problem definition is at once to explain, to describe, to recommend, and above all, to persuade" (Rochefort & Cobb, 1994, p. 15). Actors compete to have their definition of a social condition frame the nature of the policy debate (Stone, 1997). A problem definition articulates the existence of a public problem and the reasons that it exists. The utility of a particular solution logically flows from the espoused set of causes. In this way, policy entrepreneurs use problem definitions to narrow the range of alternatives under consideration and to espouse a particular solution. Therefore, problem definition "is often at the heart of the action itself," argues Weiss. "Much policymaking, in fact, is preoccupied with whose definition shall prevail" (1989, p. 98).

Scholars have identified a variety of characteristics that help to explain the utility of a definition for structuring policy debate. In the hands of a skilled policy entrepreneur, a problem definition that is complete, has feasible solutions, and is compatible with other definitions is a powerful tool for influencing policy formation. However, this role of problem definitions has yet to be fully explored (Rochefort & Cobb, 1993).

The issue of air bag safety provides an opportunity to examine the role of problem definitions in the policy process and to test propositions implicit in previous research. Deaths that have been attributed to air bag deployments have focused attention on the dangers associated with air bags and have resulted in a

challenge to the wisdom of Federal regulation requiring that they be installed in motor vehicles. Several problem definitions have emerged in this debate in an effort to influence Federal policy.

What are the components of a complete problem definition? What definitions are being used by policy entrepreneurs to influence the content of government regulations on air bags? Which definitions have been the most effective in shaping new policy? Which definitions are likely to shape policy in the future? To address these questions we perform a content analysis of the official record of three congressional hearings (two Senate, one House) held on the issue of air bag safety during 1996 and 1997. The formal statements and verbal comments of each participant in the hearings were examined for the manner that the individual described (framed) the problem of air bag safety. Additionally, recent rules promulgated by the National Highway Traffic Safety Administration (NHTSA) serve as the policy response to this issue. To test hypotheses about the influence of problem definitions on policy formulation, the content of these NHTSA rules will be compared with the dominant problem definitions articulated in the debate as carried out in the congressional hearings.

Components of Problem Definitions

Complete problem definitions have several key components. First, definitions identify a societal condition that needs to be remedied through government action. Second, key statistics and descriptions of relevant events are offered as evidence to empirically demonstrate the perceived condition. In offering specific empirical evidence a problem definition draws attention to certain aspects of the condition while strategically ignoring others. This evidence also has the effect of demonstrating that the condition being described is not an isolated event. The definition provides a frame through which the information is interpreted and may lead to a very different interpretation of the data gleaned from a different problem definition.

Third, the causes of this condition are identified to allocate blame or provide an explanation. It is this explicit causal theory that often distinguishes several definitions. Fourth, a complete definition articulates a set of solutions that would remedy the perceived condition. The solutions that are espoused logically follow from the articulated causal theory. Thus, the "preferred" solution may appear to be obvious, and it gets to the heart of the problem.

Fifth, implicit in the espoused solutions is an acceptance of key values or a desired end state. These values indicate what the condition should look like in society. They also provide normative justification for the articulated causal theory and solutions. Sixth, to bring to life these values, symbols are employed to dramatize the social condition that needs to be addressed. Symbols are objects that are endowed with meaning or significance that is not inherent in the object itself that people use to summarize, condense, and simplify complex phenomena (Elder & Cobb, 1983). Symbols not only help to communicate but also develop empathy for a particular perspective. Entrepreneurs use symbols to persuade others to accept the basic assumptions of a problem definition. As Stone suggests, "symbolic representation is the essence of problem definition in politics" (1997, p. 137).

Air Bag Safety Problem Definitions

In 1984, the U.S. Department of Transportation required that front seats in automobiles be equipped with automatic occupant protection devices (i.e., automatic seat belts or air bags) instead of, or in addition to, manual lap and shoulder belts. In 1991, Congress directed the NHTSA to amend this standard to require "an inflatable restraint" (i.e., air bag) when it enacted the Intermodal Surface Transportation Efficiency Act (ISTEA) (P.L. 102-240). The Act required that air bags be installed in 95% of cars by model year 1997 and in 100% by model year 1998. In addition, installation of air bags was required in 80% of light trucks in model year 1998 and in 100% by model year 1999.

Before air bags were fully installed in the automobile fleet as directed under the ISTEA, deaths to small children and women of small stature focused attention on the dangers associated with air bag use. The NHTSA has confirmed 121 deaths attributable to the deployment of air bags since 1990 (National Highway Traffic Safety Administration, 1998). In some instances, these crashes occurred at speeds so low that only minor injuries would have resulted had an air bag not deployed. In response, Congress held three hearings to address the dangers of air bags, and the NHTSA has considered four modifications to its regulations in an effort to reduce the likelihood of future air bag deaths. Thus, recent policy debate has focused on modifying current Federal air bag guidelines even before the ISTEA's directive was fully implemented.

The debate over air bag safety offers an opportunity to examine the richness of competing definitions that are being used to influence public policy. Relying on testimony in three congressional hearings, the discussion below identifies four competing definitions that are being used in current policy debates. In Table 1 we have labeled these definitions as behavioral, regulatory, technological, and corporate greed. These labels describe the key causal element of the definitions.

Behavioral Definition

Under the behavioral definition, air bags are touted as a successful motor vehicle safety device. Federal regulations requiring the installation of air bags in the motor vehicle fleet have helped make American motor vehicles safer for occupants. To illustrate this perception, proponents of the behavioral definition offer estimates of the number of lives that have been saved, and the number of injuries that have been averted, by air bags. For instance, Dr. Ricardo Martinez (NHTSA) testified that "[a]s of April 15, 1997, more than 1,900 drivers and passengers are alive because of air bags. About 600 were saved in 1996 alone" (U.S. House of Representatives, 1997, p. 8).

Deaths from air bag deployments are tragic cases, and steps must be taken to ensure that they do not occur in the future. But these deaths must be understood in the larger context of traffic safety. It is important to remember that over 40,000 people die in motor vehicle crashes each year. The deaths attributable to air bag deployments are small in number when compared with the number of lives that have been protected by air bags. Senator Gorton stated that air bag-related "deaths are few in comparison with the number of lives saved, or when compared to the 3,300 children killed...in car accidents every year" (U.S. Senate, 1997, p. 14). In this way the behavioral definition downplays the significance of the deaths caused by air bags.

Table 1
Components of Air Bag Safety Problem Definitions

	Competing Definitions			
	Behavioral	**Regulatory**	**Technological**	**Corporate Greed**
Components				
Condition	Air bags generally effective; some unintended consequences	Children and people of small stature are exposed to too much risk	Children and people of small stature are exposed to too much risk	Children are being killed by air bags
Empirical evidence	Fatalities/injuries averted; fatalities; costs of injuries; relatively low seat belt use rates; other nations' seat belt use rates	Fatalities; lives saved; deployment force; improved seat belt usage rates; deployment forces in other nations; number of deployments	No. of air bags in use (driver & passenger); lives saved; fatalities; time needed to develop new systems	Child fatalities; children saved; projected child fatalities; speed of crashes; early estimates of dangers
Causal theory	Improper use of air bags and seat/lap belts due to lack of knowledge	Outdated, inflexible design regulation	Crude technology; insufficient incentives for research and development	Corporate greed (cheap design; failure to warn of dangers; misleading marketing)
Solutions	Air bag/seat belt safety education; warning labels; primary enforcement belt laws; pedal extensions	Eliminating unbelted test; higher deployment threshold; depowered air bags	Regulation mandating "smart" air bags; on-off switches; deactivation on demand	On-off switches; "smart" air bags; public education
Values	Public safety; personal responsibility; societal economic cost	Protection of the most vulnerable; design flexibility; lawful behavior	Passive protection; technology	Individual choice; corporate accountability; protection of the the young
Symbols	Life saved; unrestrained child; crushed car interior	Avoidable fatalities; frail/ small occupants; lawbreakers; inflexible regulation	Outdated technology; dangerous technology companies	Dead child; ordinary children; greedy

Source: Authors' analysis of U.S. Senate and U.S. House hearings.

The causal theory for this definition suggests that the root of the problem is the behavior of the vehicle occupants themselves. Occupants are depicted as

placing themselves at risk by positioning themselves too close to the air bag at the time of deployment or by being improperly belted (Martinez, U.S. Senate, 1996, p. 8). In reference to the children who have died, Martinez stated: "Last year, about 72% of all the children who were killed in the front seat [of] an automobile were riding unrestrained" (Martinez, U.S. Senate, 1996, p. 11). In most cases air bag fatalities could easily be averted by the proper use of seat belts and placing young children in the back seat away from air bags altogether. "[T]he behavioral issues, where, how, someone sits, [are] always going to be one of the main determinants of life and death in the result of a crash" (Janet Dewey [Air Bag Safety Campaign], U.S. House of Representatives, 1997, p. 82).

To illustrate the behavioral component of this issue, the seat belt usage rate of American motor vehicle passengers is compared with that experienced in other nations. Seat belt usage rates in Canada and Australia are offered as benchmarks against which the U.S. experience is compared. For instance, Canada and Australia are credited with belt usage rates of 90% and 95%, respectively (Martinez, U.S. House of Representatives, 1997, pp. 20-22); whereas the United States experiences a rate of 68% (Martinez, U.S. House of Representatives, 1997, p. 8). The correlation between belt use rates and air bag deaths is noted as Canada has had only two or three fatalities attributed to air bag deployments (Martinez, U.S. House of Representatives, 1997, p. 21).

If the behavior of motor vehicle occupants is causing the negative consequences, then tools that alter this behavior are the appropriate solutions. "In the short term, behavioral changes are the most realistic [remedy] and would bring the most immediate benefit" (Martinez, U.S. Senate, 1996, p. 10). Three tools to accomplish a change in behavior are "increased public education, improved occupant protection laws, and high-visibility enforcement of these laws" (Martinez, U.S. House of Representatives, 1997, p. 12).

The values implicit in these behavioral solutions are general public safety, personal responsibility, and societal economic efficiency. Because deaths occur in situations where the individual is improperly situated or restrained, the individual bears the responsibility for altering the behavior that places them in danger. As Martinez testified: "No safety device is a panacea; ultimately, drivers and passengers must take responsibility for their own safety" (Martinez, U.S. Senate, 1996, p. 16).

To gain emotional effect for these arguments, proponents offer various depictions of the safety benefits of air bags. A woman is brought before a congressional hearing to tell her story about how an air bag saved her life. We are reminded that the lives saved are parents and grandparents. Videos show how air bags protect crash test dummies in staged crashes. In each case these symbols help dramatize the technical and statistical arguments about the consequences of irresponsible behavior that cause the deaths attributable to air bag deployment.

Regulatory Definition

Proponents of the regulatory definition acknowledge the safety benefits of air bags, but the dangers of air bags are more prominent than in the behavioral definition. The condition that is described is one where air bags work well, but individuals are being injured and some die needlessly. To support this depiction of the condition, statistics are cited that identify the number of children and occupants who have died due to air bag deployments. But it is pointed out that minor injuries are the more common result.

To illustrate the general effectiveness of air bags, it is estimated that there have been over 1 million air bag deployments (Andrew Card (American Automobile Manufacturers Association (AAMA), U.S. Senate, 1997, p. 79). In light of this overall number, the industry is not putting out a defective product, but air bags certainly can be improved. Also, it is noted that these deaths are occurring at a time when Americans are buckling up more now than ever. Seat belt usage rates are used to describe the condition but are interpreted in a different context than under the behavioral definition.

The cause of the condition is outdated and inflexible government regulation. After describing the death of a 1-year-old girl in his state, Senator Dirk Kempthorne characterized Federal regulation as follows:

> Is Alexandra's death a tragedy? Yes. Is this tragedy the result of government regulation? Yes. Is this regulation killing children? Yes (U.S. Senate, 1997, p. 16).

It is argued that automotive manufacturers are required to meet inflexible regulations when designing air bags. In particular, Federal Motor Vehicle Safety Standard No. 208 is the main culprit. This standard requires air bags to protect the median adult male, who is unbelted, in a head-on crash at 30 miles per hour. In light of statistics indicating that most Americans now "buckle up," the unbelted test is outdated (Richard Klimisch (AAMA), U.S. Senate, 1996, p. 31). More importantly, to be in compliance with this regulation, "...air bags must deploy at a force equal to 200 miles per hour" (Kempthorne, U.S. Senate, 1997, p. 16). Such high deployment forces are in excess of what it would take to protect children and occupants wearing seat belts, and even unbelted occupants (George Parker (AAMA), U.S. Senate, 1996, p. 58).

Standard No. 208 is especially intolerable because by protecting individuals who in most cases are violating state seat belt laws (i.e., are unbelted), manufacturers know that they must place the elderly, small women, and especially children at greater risk. As Senator Kempthorne comments: "[Standard no. 208] says, in essence, lawbreakers who do not wear seat belts will be protected. But it may be at the cost of your children" (U.S. Senate, 1997, p. 17). Not only is there concern about the safety implications of Standard No. 208 but also the liability manufacturers may bear. "We believe that manufacturers should not be subjected to product liability risk when they are responding in good faith to a Federal mandate" (Parker, U.S. Senate, 1996, p. 62).

The solution that emanates from this causal theory is a modification in Federal regulation. In the short term it is recommended that Standard No. 208 be amended to permit manufacturers to depower air bags (i.e., reduce the explosive charge for deployment). Depowering would reduce the risk that occupants face when an air bag deploys. Ultimately, the more desirable solution is the elimination of the unbelted test altogether so manufacturers could develop a safer product.

The protection of the most vulnerable occupants in motor vehicles (i.e., children, women of small stature, and the elderly) is explicitly espoused by this definition. Another value obvious in the proposed solutions is manufacturer autonomy or design flexibility. More implicit in this definition are values placed on lawful behavior (i.e., wearing seat belts) and the avoidance of manufacturer product liability.

Common symbols employed to generate support for this definition are vulnerable infant passengers and outmoded, inflexible regulation. Proponents of

this definition avoid a direct critique of Federal regulators. Instead, their ire is focused on the regulation itself that is outmoded or misguided. Although this distinction in symbols between the regulation and the regulator may seem minor, it permits continued cooperation between the regulators and those espousing this regulatory definition.

Technological Definition

The technological problem definition views the condition from the perspective of the young children and people of small stature who are exposed to too much risk. Although air bags have safety benefits, the technological definition focuses on the negative consequences of air bags, which are a more serious problem than portrayed by either the behavioral or regulatory definitions.

To demonstrate the extent of this problem, the number of fatalities is a key statistic that is referenced. Additionally, the number of air bags in use, both driver and passenger side, are identified to illustrate the prevalence of air bags in today's automobile fleet. As Jim Hall (National Transportation Safety Board (NTSB)) testified, "[w]e add another 1 million vehicles each month with air bag technology that is not safe for everybody, and specifically not for children" (U.S. Senate, 1997, p. 44). This statistic helps to illustrate that the problem is one that potentially faces a large segment of the population.

Unlike the other definitions, it is the technology that is the main cause of the deaths. The technology is described as crude; similar to a one-size-fits-all piece of clothing. What makes one individual safe, however, will not necessarily offer the same amount of safety to the next occupant. Instead of sensing the size of an individual, whether or not the individual is belted, or whether a child safety seat is present, today's generation of air bags deploy with one uniform force. This is why individuals of small stature and young children are placed at risk during air bag deployment. Insufficient research and development have been conducted to develop the next generation of air bags that will reduce the risk to smaller occupants.

Clearly, the solution is to develop air bags that deploy with forces that are customized to the occupant and the circumstances of the crash. Advanced technology holds the answer to improving air bag safety. These "smart" air bags will provide greater safety benefits than current ones without the increased exposure to risk that young children and occupants of small stature currently face. While these technological developments are not immediately available, short-term solutions include depowering, installing on-off switches, and deactivation on demand. The latter two of these short-term solutions provide the occupant with the choice of using the existing technology.

Some proponents imply that government regulation needs to be enacted to motivate manufacturers to develop smart bags. In reference to setting government standards pertaining to smart technologies in the future, Mr. Hall stated:

> I think the economic considerations are the reality here, Senator, and the automobile manufacturers, until the Federal government sets the standard, are not going to initiate the changes that are required (U.S. Senate, 1997, p. 60).

Charles H. Pully (Automotive Restraints Council) went further and testified:

> So when will the sophisticated smart restraint system [be] available? If we have aggressive targets set, the 2000 model year is not

> unreasonable. That's the 1999 calendar year (U.S. Senate, 1997, p. 103).

These solutions implicitly value technology, as future advances will make the automobile an even safer means of transportation. Additionally, passive protection is valued, as the ultimate goal is to produce an air bag that provides safety benefits to all occupants without any responsibility placed on the occupant to ensure proper usage. Outmoded and dangerous technology is employed as an effective symbol to heighten awareness for developing new technology. The current generation is referred to as "dumb" air bags, while the new and improved generation is "smart" technology.

Corporate Greed Definition

Under the corporate greed definition we are faced with an emergency or crisis. It is not that occupants are inadvertently dying, it is that air bags are *killing* people. In particular, air bags are killing young children. Even though it is acknowledged that some small women and senior citizens have died as a result of air bag deployments, it is the death of the child that is the focus of this description.

As evidence to substantiate this depiction, the number of children whose deaths have been attributed to air bag deployments is offered. Their ages are identified as well as the circumstances surrounding their death. Frequently presented is a description of the way in which the air bag caused the death.

> The situation is horrifying, because the extent of the injuries are absolutely grisly, not only decapitation, but broken necks, severe brain injury... (Robert Sanders [Parents' Coalition for Air Bag Warnings], U.S. Senate, 1997, p. 137).

These are children who were "struck in the face by air bags, all in low speed collisions in which normally they would have survived" (Sanders, U.S. Senate, 1997, p. 137). Estimates of future child fatalities due to air bag deployments are also offered.

> Air bags are killing twice as many children as they are saving, and the most recent projection that I have seen from NHTSA is that air bags will kill 128 children a year, absent corrective measures (Sanders, U.S. Senate, 1997, p. 137).

The blame for these deaths is placed on the automobile manufacturers. Corporate greed has led manufacturers to install air bags that are cheaply designed.

> The source of the air bag crisis can be stated in a sentence: The automakers designed cheap air bags that they knew were dangerous to children and failed to warn of the dangers (Sanders, U.S. Senate, 1997, p. 145).

It is pointed out that industry officials were well aware of the dangers that air bags pose to some occupants, but the industry did nothing to warn people of these dangers when it was realized that air bags were a marketable product. The marketing of air bags was misleading, as advertisements typically portrayed air bags as a big fluffy pillow, not a safety device deployed at violent speeds (Sanders, U.S. Senate, 1997, p. 145). Thus, corporate greed has caused these predictable, senseless deaths.

To address this problem it is recommended that the public be informed about the danger that air bags pose, the on-off switches be installed to give people the choice to use an air bag, and smart air bags be developed. However, it is not specified how this last solution is to be accomplished. The values espoused by this definition are protection of children, individual choice, and corporate accountability.

Perhaps the most dramatic symbol used in the debate over air bag safety is the innocent child whose life was needlessly shortened by an air bag. The family who is suffering from such a tragic loss also dramatizes the problem. The symbolic representation of the greedy corporation further generates sympathy.

Problem Definitions and Policy Formation

Beyond influencing agenda setting, problem definitions also influence the outcome of the policy process (Portz, 1996). Once an issue reaches the political agenda, the ensuing debate over what to do may be characterized as a competition among alternative definitions of the problem. Several factors may influence the success enjoyed by a problem definition in framing the debate and determining policy outcome.[1]

The influence of a problem definition on policymaking is determined by the presence of an effective entrepreneur and the amount of consensus exhibited by proponents of a definition. First, the presence of an effective entrepreneur has been identified as an important factor in agenda setting and policymaking (Kingdon, 1995; Weiss, 1989). An effective entrepreneur is articulate, visible, willing to commit energy to the issue, and perceived as knowledgeable and credible in terms of the information offered. The effectiveness of an entrepreneur is also influenced by one's political clout or the position that one occupies in the policy process. Second, a problem definition enjoys an advantage over others to the degree that the proponents of a definition are consistent in the information, messages, and solutions that they each offer in the policy debate. A definition is thereby reinforced when it is articulated in the same way by several individuals.

The characteristics of the definition itself are also important in determining a definition's influence on policymaking. First, scholars have identified the importance of politically and technically feasible solutions that are affordable (Portz, 1996; Rochefort & Cobb, 1993, 1994). For instance, Kingdon (1995) argues that a feasible alternative must be associated with a problem description to open a policy window.

Second, for a definition to successfully frame or dominate the policy debate, it must be comprehensive in its description of the issue in need of redress. The effectiveness of a problem definition to frame the issue perceived by policymakers is in part determined by the interweaving of all the components of a definition into a persuasive and complete story (i.e., evidence, causal theory, solutions, and symbols). Those definitions that do not develop each component are likely to be less influential.

Third, problem definitions also vary in regards to their compatibility with other definitions of the condition. There are two aspects to this notion of compatibility. The first pertains to a definition's logical incompatibility with the causal theory of other definitions. The policy debate is often portrayed as a competition between mutually exclusive definitions (e.g., Weiss, 1989; Coughlin, 1994). However, the causal theories of competing definitions are not always logically incompatible, recognizing the relevance of multiple causality in

explaining social conditions. The second aspect of compatibility pertains to the acceptance of a definition by individuals espousing competing problem definitions. To the extent that the causal theory of a particular definition is accepted as valid by other participants in the debate, the definition will be more influential.

In sum, the following "success characteristics" determine which problem definition is most likely to shape policy formation on a particular issue: the presence of an effective entrepreneur, a consensus among its proponents, the feasibility of its solutions, the comprehensiveness of the definition, and its compatibility with other definitions employed in the debate. In the next section we apply the above hypotheses to the debate over air bag safety.

Problem Definitions and NHTSA Rulemaking

In the case of air bag safety, recent regulations promulgated by the NHTSA represent the outcome of the policy process. Based on the "success characteristics" identified above, some definitions may be more fully represented in recent NHTSA regulations than others. The question addressed in this section is: which problem definitions are likely to have the most influence over the formulation of recent NHTSA rules? Table 2 presents a comparison of each problem definition in terms of the five success characteristics identified above.

When we compare each definition with the success characteristics, the behavioral definition emerges as the most likely candidate to shape policy. This definition enjoys the support of an effective spokesperson in Dr. Ricardo Martinez. He is articulate, well respected by congressional members, recognized as knowledgeable, and, as the administrator of the NHTSA, is in a prime position to get attention for his views. In each of the three congressional hearings examined, Dr. Martinez was the first witness to testify and offered the longest testimony. Consensus among supporters also characterizes this definition, as all proponents were consistent in their portrayal of the cause and solutions, even using similar phrases.

In terms of the problem definition itself, the behavioral definition offers feasible solutions such as public education and encouraging states to adopt primary enforcement belt laws and increase their enforcement efforts. Furthermore, it offers a comprehensive and logical portrayal of the condition, and its underlying causal theory and solutions do not logically conflict with the other definitions. This last characteristic is obvious, as nearly every individual testifying before these congressional hearings, even those primarily espousing other definitions of the condition, indicated that the behavior of occupants needs to be modified.

The regulatory definition seems to be the next most influential definition according to the success characteristics. It offers a comprehensive description of the condition and alternatives that flow logically from its causal theory. While the solutions that it proposes are technically feasible, some questions were raised about the effectiveness of these solutions. For instance, Dr. Martinez and Joan Claybrook (Public Citizen) question the effect of eliminating the unbelted test (U.S. Senate, 1997, pp. 73-75). What limits this definition's utility, however, are its lack of a single, identifiable entrepreneur and its incompatibility with other definitions. Although there may not be one clearly recognizable entrepreneur espousing this definition, it relies upon entrepreneurialism by committee. The most visible spokesman is Senator Dirk Kempthorne, who has been outspoken against NHTSA regulations and even petitioned the NHTSA to eliminate the

unbelted test. Besides Kempthorne, several automotive industry officials also testified at the congressional hearings (e.g., Lou Camp (Ford Motor Company), Philip Hutchinson (Association of International Automobile Manufacturers (AIAM), and Andrew Card (AAMA)). But none of these individuals has the time to devote to the issue, as does Dr. Ricardo Martinez, nor his status in the area of traffic safety.

Table 2
Success Characteristics and Air Bag Safety Problem Definitions

	Competing Definitions			
Success Characteristics	**Behavioral**	**Regulatory**	**Technological**	**Corporate Greed**
Effective entrepreneur	High (Dr. Ricardo Martinez is the most visible entrepreneur)	Medium (Committee of entrepreneurs)	Low (Several individuals but no one strongly)	Low (Articulate but few political and economic resources)
Consensus among proponents	High	High	Medium (Confusion over the solutions)	Not applicable
Feasibility of solutions	High (Economically and politically feasible)	Medium (Low cost, but effectiveness questioned by some witnesses)	Low (Disagreement on approach and time frame)	Medium (Smart air bags not yet feasible, on-off switches are feasible)
Comprehen-siveness	High (Well developed and integrated)	High (Well developed and integrated)	Medium (Lacks feasible solutions in the short term)	Low (Solutions do not logically flow from casual theory)
Compatibility with other definitions	High (Slight conflict with the values of the regulatory definition)	Medium (Incompatible with the corporate greed definition)	High	Medium (Incompatible with the regulatory definition)

Source: Authors' content analysis of U.S. Senate and U.S. House hearings.

Perhaps more importantly, the regulatory definition is incompatible with two other definitions. Dr. Martinez and others from the NHTSA who have testified at these hearings do not support the contention that existing regulations are inflexible. Further, the regulatory definition seeks to shift some of the risk to the unbelted automobile occupant, a shift in exposure to risk that is incompatible with the values of the behavioral definition. Robert Sanders also contradicts the causal theory of the regulatory definition by indicating that existing regulations are not to blame for the problem. In this way the regulatory definition is logically

incompatible with the corporate greed definition, which places blame squarely on the shoulders of the industry.

The technological definition is considerably weaker in terms of its success characteristics than either the behavioral or regulatory definitions. The biggest problem undermining the influence of the technological definition is the lack of cohesiveness among its proponents about a viable solution. Although no individual testified against the need for smart air bags, there is little agreement as to how feasible this new technology is in the short term. Furthermore, the definition does not have a clearly identifiable entrepreneur. Although several individuals articulate the need to develop smart technology (e.g., Ricardo Martinez (NHTSA); Brian O'Neill (Insurance Institute for Highway Safety); Jim Hall (National Transportation Safety Board); Robert Hammeman (American Academy of Pediatrics)), they indicate that smart technology is a long-term solution. For these reasons, we would expect policy to be less influenced by this definition. It has the potential, however, to be more influential once there is agreement about the approach and time needed to develop the next generation of air bags.

Finally, the corporate greed definition possesses few success characteristics that are likely to make it an influential problem definition. First, Robert Sanders, the spokesperson for this definition, lacks the political and economic resources, as well as access to key decisionmakers, to shape the nature of the debate. Second, it is not comprehensive, as the solutions it offers do not follow directly from the causal theory. It is corporate greed that is the culprit, but no strategies are offered to make industry act more responsibly. Third, this definition is incompatible with the regulatory definition. For these reasons, we expect it to be ineffective in shaping policy.

To test the conjectures about the influence of these definitions in the policy process, we examine recent NHTSA rulemaking activities. Since 1996, the NHTSA has promulgated four rules pertaining to air bag safety. The first rule requires improved labeling on new vehicles to warn occupants of the dangers of not wearing a seat belt, sitting too close to the air bag, and placing a rear-facing child safety seat in the front seat (effective February 25, 1997) (National Highway Traffic Safety Administration, 1996). The rule also requires enhanced warning labels to be placed on new rear-facing child safety seats (beginning May 27, 1997). The influence of the behavioral definition can be seen in this rule. Educating the public of the dangers that air bags pose through warning labels fits well with the solutions offered under the behavioral definition. Given the general acceptance of this definition, it is not surprising that there was general agreement among those commenting on this rule.

Another NHTSA-sponsored activity consistent with this definition is the Air Bag and Seat Belt Safety Campaign. This campaign, also sponsored by the National Safety Council, has brought automakers, insurance companies, occupant restraint manufacturers, and others together to "maximize the benefits of air bags while minimizing the risks" (National Safety Council, 1998). The Campaign seeks to accomplish this goal through education and encouraging states to upgrade seat belt laws and enhance enforcement.

Two additional rules address manual on-off switches and air bag deactivation. The second rule the NHTSA promulgates permits manufacturers to install passenger-side manual on-off switches until September 1, 2000, in vehicles that do not have a back seat that can accommodate a rear-facing child safety seat (National Highway Traffic Safety Administration, 1997b). This is merely an extension of a previous regulation that was scheduled to expire on September 1,

1997, for passenger vehicles and a year later for trucks. This rule portrays on-off switches as a short-term solution until smart air bags can be installed in the motor vehicle fleet.

The third rule permits the installation of a retrofit manual on-off switch in vehicles used by a person who is at risk in an air bag deployment (National Highway Traffic Safety Administration, 1997a). With these latter two rules the NHTSA significantly restricted the use of manual on-off switches and virtually eliminated the option of air bag deactivation. Based on the manner in which the NHTSA has severely curtailed the use of these options, it is hard to argue that the technological and corporate greed definitions have significantly influenced recent policy.

A fourth rule promulgated by the NHTSA offers a more significant change in regulations pertaining to the air bag mandate. Adopted March 19, 1997, this rule permits automobile manufacturers to depower air bags by 20 to 35% (National Highway Traffic Safety Administration, 1997c). Depowering is accomplished under this rule by temporarily modifying Safety Standard No. 208. The rule permits manufacturers to use a sled test, a less demanding approach, as opposed to a crash test for evaluating air bag effectiveness. Modifying Standard No. 208 to permit depowering is one of the regulatory changes espoused by the regulatory definition. It represents the most significant change in NHTSA regulations and indicates some success of the regulatory definition in this debate.

To ensure that manufacturers have an incentive to develop smart technology, however, the rule modifying Standard No. 208 is scheduled to terminate on September 1, 2001. The NHTSA argues that the rule will reduce the risk in the short term but promotes the development of smart air bag systems with its sunset provision. The logic of this argument indicates the general acceptance of the technological definition in the long term, but that its short-term viability is problematic.

These regulations likely were influenced by the institutional venue in which the debate over air bag safety played out. While the debate occurred within specialized congressional subcommittees, it is possible that Congress could have opened the debate to a fuller committee or floor participation, or refused to be involved at all, leaving the debate solely in the regulatory agency arena (i.e., NHTSA). In this case, the original authorizing legislation delegated authority to the NHTSA to promulgate rules on passive restraint systems. Because the debate has been over modifying existing NHTSA regulations, the institutional venues where the debate could be heard were constrained.

The institutional venue where a debate is held can influence: (a) the effectiveness of an entrepreneur by constraining who can gain access to the debate and their relative importance, (b) the criteria used to judge the feasibility of solutions, and (c) the nature of consensus that can be achieved by proponents of a particular definition. Because the debate was held in congressional subcommittees, the number of actors was limited. Also, given the frequent interaction between these particular subcommittees and the NHTSA because of their role in transportation policy issues, Dr. Ricardo Martinez was a familiar and well-respected participant. These factors helped to increase the ability of Martinez to influence the debate and to achieve general support for the behavioral definition.

Alternative Explanations of Policy Formation

The problem definition perspective is offered here as a useful approach for

explaining the policy process in the case of air bag safety. The question that remains is whether this perspective offers a better explanation of policymaking than other explanations of policy formation. In particular, we examine the utility of interest group/pluralist, elite, and principal-agent theories. In the following paragraphs we compare predictions that emanate from these competing explanations of the policy process to recent policy formation on air bag safety.

Interest group/pluralist theory states that public policy results from the open competition between interest groups that rise up in contention over an issue (Dahl, 1967, 1982; Truman, 1971). The policy outcomes that result are determined by a struggle that takes place among competing groups, and the bureaucratic agency serves as the moderator of these competing interests. Thus, the interest groups that dominate the policy debate would have the greatest influence over policy outcomes. In addition to representatives of government agencies (e.g., the NHTSA, NTSB), 24 people representing specific interests appeared before the three legislative committees examined for this project. Of these individuals, 75% represented the automobile manufacturing industry and largely espoused the regulatory definition calling for an elimination of unbelted testing and more flexible government regulatory standards. The remaining six individuals (25%) represented public interest organizations and largely espoused the need to educate the general public about the proper use of seat belts and proper positioning in relation to air bags. One of these six individuals representing a public interest organization also strongly espoused the corporate greed definition.

A pluralist explanation of policymaking would predict in this case that policy decisions would fit closest with the industry's call for more flexible government regulation, as this is the dominant position represented by interest groups in this policy debate. As explained earlier, however, industry representatives have not successfully influenced the content of recent government regulations, especially pertaining to Standard No. 208, the unbelted test. Their only success pertains to the depowering of air bags. For this reason, we suggest that recent policymaking in relation to air bag safety is not consistent with the hypothesis that emerges from an interest group/pluralist explanation of the policy process.

Another common explanation states that policy is created by a small group of elite comprised primarily of industry and government officials (Lindblom, 1977; Mills, 1956; Putnam, 1976). In the case of air bag safety, while there is agreement among industry representatives and representatives of the NTSB as to what should be done, NHTSA officials do not share the opinion that government regulatory standards need to be loosened. For this reason, there does not appear to be a coherent opinion among this elite group. Focusing solely on the economic resources of the industry as defining the elite for this policy issue, we again would expect that industry representatives would be successful in abolishing the unbelted test and loosening government regulations. However, as mentioned above, the automotive industry has achieved only limited success in influencing recent policy formation.

Finally, a principal-agent explanation of policymaking suggests that policies implemented by bureaucratic agencies are determined by direct orders from their authorizing principal or signals that express what the principal desires (Calvert, McCubbins, & Weingast, 1989; Wood & Waterman, 1991, 1994). In this case, the agent is the NHTSA and the principal is Congress, particularly the committees relevant to this policy issue (e.g., Senate Committee on Commerce, Science, and Transportation; House of Representatives Committee on Commerce).

Clearly, NHTSA leadership is well aware of this principal-agent relationship. For instance, in response to Senator Kempthorne's request for public comment on eliminating the unbelted test, Dr. Martinez responds: "We believe that our authority does not allow us to disregard congressional statute which specifically references the passive restraint system on it....Our belief is that we cannot do that unilaterally, but it takes congressional action" (U. S. Senate, 1997, p. 70). Dr. Martinez seems to be saying that the NHTSA will abolish the unbelted test only if Congress mandates that it be done, a case of the agent sending a message to the principal.

However, the principal-agent model assumes that there is a clear message or signal from the principal as to what should be done by the agent. In this case, no clear message emanates from the congressional hearings. During the January 1, 1997 meeting, Senators Abraham, Frist, Kempthorne, and Snowe all expressed concerns about inflexible regulations that hamper air bag design (the regulatory definition). Senator Hutchinson leaned towards a rule that permits a constituent to disconnect her air bag. Still other Senators espoused the importance of education (the behavioral definition). Given the lack of a clear message as to what Congress wants the NHTSA to do, a principal-agent explanation of the policy process is not helpful on this issue.

In sum, interest group/pluralist and elite theories would predict that the industry would be successful in influencing recent policymaking, but for different reasons. However, the automotive manufacturing industry has achieved only limited success in influencing recent NHTSA regulations. Sunset provisions were added to these changes in NHTSA rules, a further indication that policymaking on this issue is not explained by a pluralist nor an elitist model. A principal-agent explanation of the policy process would predict that the NHTSA would enact policies that are desired by Congress. However, Congress has not sent a coherent message to the NHTSA about what actions it desires. Therefore, interest group/pluralist, elite, and principal-agent theories of the policy process are not as helpful in explaining policy formation on air bag safety as is the problem definition perspective discussed above.

Conclusion

The problem definition perspective is a useful approach for understanding the debate surrounding the issue of air bag safety. This debate can be understood as a competition among four definitions: behavioral, regulatory, technological, and corporate greed. Each definition espouses a unique causal theory. Although we have described these definitions as clearly distinct, the actual debate played out in the three congressional hearings that we examined is rather muddy. We expected to find that a given individual would strongly espouse a particular definition. Instead, we found that individuals often referenced the causal theory of more than one definition and, hence, would offer several solutions. The actors in the debate over air bag safety generally see the problem as a complex one involving multiple causes.

This is contrary to the typical image of problem definitions as mutually exclusive depictions of a social condition. The same solution can even be offered by different definitions in response to different causal theories, likely increasing the chance of its adoption. Also, policy formation is a continual process where different definitions may have influence at different times. This, in part, is a

function of the changing cast of actors, as congressional committee members differ between the chambers and across years.

A problem definition perspective is useful for explaining why certain policies were adopted and predicting the shape of future policy. The "success characteristics" of a problem definition determine how likely a definition is to influence policy. We identified several characteristics of successful problem definitions: an effective entrepreneur, a consensus among supporters, the feasibility of its solutions, its comprehensiveness, and its compatibility with other definitions.

With these success characteristics in mind, we are not surprised to find that the behavioral definition influenced the first iteration of policy on air bag safety and continues to frame much of the debate. The regulatory definition has enjoyed limited success in recent regulatory changes. However, the technological definition will likely influence future policy considerations once smart air bags are demonstrated to be feasible. Finally, the solutions offered exclusively by the corporate greed definition are not likely to be adopted.

***

David J. Houston is associate professor of political science at the University of Tennessee, Knoxville. His current research interests include public policy theory, transportation policy, citizen attitudes toward democratic institutions, and the ethic of public service. His research has appeared in the *Public Administrative Review*, *Social Science Quarterly*, *Evaluation Review*, the *Policy Studies Review*, and other journals.

Lilliard E. Richardson, Jr. is associate professor of public affairs at the University of Missouri, Columbia His current research interests include public policy theory, citizen attitudes toward democratic institutions, tools for enhancing citizen participation in democracy, and state legislatures. His research has appeared in *Social Science Quarterly*, *Evaluation Review*, *Political Research Quarterly*, *Legislative Studies Quarterly*, and other outlets.

Note

[1] While other characteristics of problem definitions have been identified (e.g., proximity, visibility, novelty, severity, political acceptability, and media attention), these may be more important to getting an issue on the agenda than in determining a policy outcome once an issue rises to the agenda. This suggests that the problem definition that is the most important in getting an issue onto the political agenda may not be the same definition that influences the resulting policy once the issue has the attention of political officials. While the importance of problem definition characteristics to agenda setting versus policy formation is important, this issue is beyond the scope of the present paper.

References

Calvert, R., McCubbins, M. D., & Weingast, B. (1989). A theory of political control and agency discretion. *American Journal of Political Science, 33*(3), 588-611.

Cobb, R. W., & Elder, C. D. (1983). *Participation in American politics: The dynamics of agenda-building*. Baltimore, MD: The Johns Hopkins University Press.

Coughlin, J. F. (1994). The tragedy of the concrete commons: Defining traffic congestion as a public problem. In D. A. Rochefort & R. W. Cobb (Eds.), *The politics of problem definition: Shaping the policy agenda* (pp. 138-158). Lawrence, KS: University Press of Kansas.

Dahl, R. A. (1967). *Pluralist democracy in the United States*. Chicago, IL: Rand McNally.

Dahl, R. A. (1982). *Dilemmas of pluralist democracy*. New Haven, CT: Yale University Press.

Elder, C. D., & Cobb, R. W. (1983). *The political uses of symbols*. New York, NY: Longman.

Kingdon, J. W. (1995). *Agendas, alternatives, and public policies.* New York, NY: Harper Collins College.

Lindblom, C. (1977). *Politics and markets.* New York, NY: Basic Books.

Mills, C. W. (1956). *The power elite.* Oxford: Oxford University Press.

National Highway Traffic Safety Administration. (1996). Federal motor vehicle safety standards; Occupant crash protection; Final rule. 61 *Federal Register* 230 (27 November 1996), pp. 60206-60221.

National Highway Traffic Safety Administration. (1997a). Air bag on-off switches; Final rule. 62 *Federal Register* 225 (21 November 1997), pp. 62405-62455.

National Highway Traffic Safety Administration. (1997b). Federal motor vehicle safety standards; Occupant crash protection; Final rule. 62 *Federal Register* 3 (6 January 1997), pp. 797-806.

National Highway Traffic Safety Administration. (1997c). Federal motor vehicle safety standards; Occupant crash protection; Final rule. 62 *Federal Register* 53 (19 March 1997), pp. 12960-12975.

National Highway Traffic Safety Administration. (1998, December 4). *Air bag fatalities and serious injuries, summary report 11/1/98* [On-line]. Available: http://www.nhtsa.dot.gov/people/ncsa/pdf/Summary.pdf.

National Safety Council. (1998, December 4). *About the air bag & seat belt safety campaign* [On-line]. Available: http://www.nsc.org/partners/airabout.htm.

Portz, J. (1994). Plant closings, community definitions, and the local response. In D. A. Rochefort & R. W. Cobb (Eds.), *The politics of problem definition: Shaping the policy agenda* (pp. 32-49). Lawrence, KS: University Press of Kansas.

Portz, J. (1996). Problem definitions and policy agendas: Shaping the educational agenda in Boston. *Policy Studies Journal, 24*(3), 371-385.

Putnam, R. (1976). *The comparative study of political elites.* Englewood Cliffs, NJ: Prentice-Hall.

Rochefort, D. A., & Cobb, R. W. (1993). Problem definition, agenda access, and policy choice. *Policy Studies Journal, 21*(1), 56-71.

Rochefort, D. A., & Cobb, R. W. (1994). Problem definition: An emerging perspective. In D. A. Rochefort & R. W. Cobb (Eds.), *The politics of problem definition: Shaping the policy agenda* (pp. 1-31). Lawrence, KS: University Press of Kansas.

Sharp, E. B. (1994). Paradoxes of national antidrug policymaking. In D. A. Rochefort & R. W. Cobb (Eds.), *The politics of problem definition: Shaping the policy agenda* (pp. 98-116). Lawrence, KS: University Press of Kansas.

Stone, D. (1997). *Policy paradox: The art of political decision making.* New York, NY: W. W. Norton.

Truman, D. B. (1971). *The governmental process.* New York, NY: Knopf.

U.S. House of Representatives. Committee on Commerce. (1997). *Air bags, car seats, and child safety* (H. Hrg. 105-16). 28 April 1997. Washington, DC: U.S. Government Printing Office.

U.S. Senate. Committee on Commerce, Science, and Transportation. (1996). *Air bag safety* (S. Hrg. 104-571). 7 March 1997. Washington, DC: U.S. Government Printing Office.

U.S. Senate. Committee on Commerce, Science, and Transportation. (1997). *Air bag safety* (S. Hrg. 105-49). 9 January 1997. Washington, DC: U.S. Government Printing Office.

Weiss, J. (1989). The powers of problem definition: The case of government paperwork. *Policy Sciences, 22*(2), 97-121.

Wood, B. D., & Waterman, R. W. (1991). The dynamics of political control of the bureaucracy. *American Political Science Review, 85*(3), 801-828.

Wood, B. D., & Waterman, R. W. (1994). *Bureaucratic dynamics: The role of bureaucracy in a democracy.* Boulder, CO: Westview Press.