

# The Impact of Issue Definition on Biotechnology Popularization

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## Abstract

Biotechnology's image has shifted in recent years from one of peril and uncertainty to one of possibility and comfort. This article investigates the problem definition process by evaluating the activities of commercial interests and public leaders. An examination of interview data, public records, and other sources indicate four techniques for defining issues: (1) creating the "biotechnology business" as a unified voice, (2) developing partnerships with existing public and commercial interests, (3) connecting biotechnology with popular policy problems, and (4) undermining biotechnology opponents and critics. These problem definition strategies demonstrate the significance of not just defining a specific issue but also affecting the context in which it is addressed.

**Keywords:** Biotechnology industry • Commercial interests • Policy problems

## Introduction

E. E. Schattschneider, a noted political scientist, once stated that: the definition of alternatives is the primary tool of power; the adversaries can seldom agree on what the problems are since power is implicated in the definition. Issue definition is by no means an a priori given; Roger Cobb and Charles Elder acknowledged it twelve years later. The opposing parties will not always agree on how to describe the problems. These policy-agenda-setting insights are easily applicable to the rise and evolution of biotechnology as a policy concern during the last two decades. Competing interests' activities have largely characterized the problem of biotechnology in the public and policymaking arenas. Currently, individuals devoted to the commercial development of biotechnology have been successful in garnering recognition for this science as an economic development instrument. This paper discusses the tactics used to depict biotechnology in a favourable light in public and policy circles.

Four methods of issue definition stand out in the research presented here: (1) the birth of the "biotechnology industry" as the collective voice of shared interests, (2) associating biotechnology with popular issues and causes, and (3) forging alliances with established public and private interests, and (4) using strategies aimed at discrediting critics and opponents of biotechnology. Overall, these diverse methodologies show that the interests of people participating in the agenda-setting process, rather than the essence of an issue, define it in the policy-making arena.

### The Birth of the Biotechnology Industry

In recent years, the public and policy arenas have increasingly depicted biotechnology in economic terms. This is in stark contrast to previous perceptions of biotechnology, which defined it in terms of environmental peril and ethical ambiguity.

The actual sequence of events and a changing environment of public opinion contributed to this change, but the efforts of a coalition of interests devoted to the research and implementation of biotechnology in agriculture, industry, and medicine were the key factors in the transformation. The first stage in changing biotechnology into a positive issue was the organization and coordination of biotechnology advocates' interests and efforts in the policy process.

Public opinion and scientific progress have aided in the transformation of biotechnology from a risky research endeavour to another technical weapon in America's competitive armoury. According to Nelkin, biotechnology in the media evolved from "a runaway science of genetic modification" to a new "technical frontier." Federal funding for public science research expanded, as did corporate and entrepreneurial interests in biotechnology. Patenting, research financing, international competitiveness, and regulatory review became dominant policy issues. Because the policy concerns were so well-structured, proponents of biotechnology were able to nurture governmental and popular support. The topic of whether biotechnology should or should not be pursued was largely irrelevant, yet a tiny number of organizations continued to oppose the new technology and receive media attention.

Today's biotechnology lobby comprises university-based scientists, small-scale commercial entrepreneurs, biotechnology-only enterprises, and huge corporations representing agriculture and pharmaceutical interests. To promote these interests, trade organizations such as the Industrial Biotechnology Association (IBA), the Association of Biotechnology Companies (ABC), and the Animal Health Institute (AHI) have developed. The history of the biotechnology business teaches us about problem significance and emphasizes the critical role that public opinion and bigger political events play in the issue-definition process.

The departure of concerned scientists and organizations representing environmental concerns highlights the significance of the kind of groups engaging in policy debates. That withdrawal undoubtedly helped to reduce the perceived danger of biotechnology. As these organizations retreated to the margins of the discussion, less well-funded and well-known organizations, such as the Foundation on Economic Trends and the Environmental Policy Institute, stepped forward as critics and opponents. The departure of environmental groups and the entry of the biotechnology business demonstrate that it is not only the substance of an issue but also those who strive to define it that give it character in the policy process.

### Associating Biotechnology with Popular Issues and Causes

Issue definition is a process of building linkages with other topics on the political agenda rather than a process of specification. As previously stated, the promise of economic prosperity drew partners and became the foundation of the biotechnology alliance. Distancing a problem from negative themes is also part of the issue description. Thus, although proponents of biotechnology worked hard to underline the relationship to economic progress, they simultaneously worked hard to separate biotechnology from negative problems like environmental danger and ethical uncertainty.

A closer examination of the economic development subject shows two characteristics stressed by the biotechnology coalition. Local and state economic growth is one dimension. This has served as the foundation for lobbying and winning support from local citizens' groups, as well as members of Congress and federal officials participating in state-federal joint initiatives. Following this path has been difficult. Although many states have fostered economic development, others have proposed regulations restricting biotechnology research and product development. In an interview, Larry Werries, USDA's Director of Intergovernmental Affairs, stated that states must embrace biotechnology development. "Any endeavour to ban innovative technology is backward thinking," he noted. In an interview, ABC Director of Legislative Affairs Joseph Lessen warned that "states that do not capitalize on biotechnology are missing the boat." Although significant attempts have been made to link biotechnology with good concerns such as economic development, significant efforts have also b-

-een made to disassociate biotechnology from issues such as environmental danger, rapid economic change, and ethical uncertainty. To do this, advocates have emphasized that biotechnology is a benign, gradual technology rather than a novel and foreign science. Biotechnology has been repeatedly attacked as a policy concern for representing a radically new type of knowledge loaded with risks. One prevalent argument is that biotechnology is a neutral science-based on beliefs and practices passed down through the years. And, because biotechnology is just another stage in human history, advocates claim that the implications of using biotechnologies will be gradual and linked to bigger social trends. This viewpoint is well shown by statements made by officials of the American Farm Bureau Federation in legislative testimony and published publications. The Farm Bureau maintains that such issues have been "going on ever since the country was created," and that biotechnology would not eliminate small farmers, but will instead offer obstacles to those who are hesitant to accept new technologies.

Proponents of biotechnology have attempted to diminish the issue's attention by equating it with gradual rather than fundamental change. Linking it to common problems also helps to cultivate support and provides a shield against challenges. The extensive emphasis on economic growth in the 1980s provided a policy window of opportunity for the pro-biotechnology coalition to forge links with a popular subject.

### Forging Alliances with Established Public and Private Interests

In a political system where authority is decentralized among numerous legislative and administrative actors within the federal government as well as between various levels of government, successful issue definition is heavily reliant on alliances formed by interests with established public and private actors. The nature of issue debate and policy consideration can be better impacted by fostering the support and collaboration of these groups. Biotechnology supporters found partners among public actors in both the administrative and legislative departments of government, as well as established scientific, economic, and agricultural interest organizations. The coalition's capacity to successfully link the fortunes of the sector with those of the established players underpins support for the biotechnology industry. There are several examples of biotechnology's collaboration with government leaders.

Among federal administrative players, the U.S. Department of Agriculture (USDA), the Food and Drug Administration (FDA), and the National Institutes of Health (NIH) have openly expressed support for biotechnology commercialization. For example, the USDA aided the biotechnology business with public relations efforts touting the merits of the new technology and pushing farmers and consumers to accept and use it. The FDA has expressed its support through regular comments by its most recent commissioner, Frank Young. The NIH has provided research funds to assist budding biotechnology businesses and has, for the most part, preserved laboratory research autonomy within the scientific community.

The biotechnology sector has sought the assistance of established business interests in addition to governmental players. The American Farm Bureau, the American Chemical Society, and the National Association of State Universities and Land Grant Colleges are among those who support it. This partnership was founded on business prospects, the pursuit of government research funds, and the pursuit of favourable regulatory policies. However, this building exercise presented a problem to the biotechnology business. In an interview, an IBA spokesperson claimed that allies were first hesitant to come forward and express their support for biotechnology. She did observe, however, that in recent years, these allies have increasingly stated their public support for biotechnology. She ascribed this shift to the public' and legislators' increased embrace of biotechnology. After receiving approval from the institutional ethics committee, this was a six-month prospective study. The study comprised 62 patients of either gender with a well-established diagnosis of glaucoma. Patient demographics, past medical and drug history, socioeconomic status, and systemic comorbidities were all collected using a specifically prepared proforma. Each patient's medical history, including previous ocular surgery and current medications, was recorded.

All prescriptions were analyzed in patients with known and newly diagnosed glaucoma for the names, doses, frequency, duration, and a class of drug prescribed, as well as the percentage of monotherapy versus fixed drug combinations and cross over between classes for those who did not achieve the target intraocular pressure.

### Using Strategies Aimed at Discrediting Critics and Opponents of Biotechnology

The pro-biotechnology coalition's efforts to define biotechnology in positive terms relied not only on presenting a united front, forging alliances with established actors, and associating biotechnology with other popular issues on the policy agenda but also on undermining the positions of those who criticize biotechnology and its potential applications. Proponents of biotechnology have attempted to depict people who oppose it as fanatics out of sync with the times, or, in more generous moments, as well-meaning but wrong. Attempts to establish biotechnology supporters as an identifiable set of interests devoted to economic growth and the solving of pressing social problems were critical to portraying biotechnology in a good light. Efforts to identify individuals who criticize biotechnology as out of sync with the times were also vital in avoiding challenges that would redefine the nature of biotechnology in harsher tones.

There were two strategies used to discredit opponents and critics. The first attempt was to depict the more radical opponents of biotechnology unfavourably, using stereotypes of them as naive, fanatic, anticapitalist, and technopathic. The second strategy was to portray these radical opponents, particularly Jeremy Rifkin, as leaders and spokespeople for everyone who has worries about biotechnology. Given that resistance to biotechnology is so broad that a centralized leadership of opposition is unable to form, the purpose of biotechnology proponents was to eclipse major detractors, such as environmental and farm groups, by emphasizing the actions of fringe groups. By doing so, the pro-biotechnology alliance hoped to gain additional support while throwing all detractors' legitimacy into doubt.

Members of the biotechnology coalition's remarks show efforts to undermine opponents and critics. Statements frequently focus on the most vociferous opponents of biotechnology, such as Rifkin. Rifkin has been one of the more colourful and conspicuous figures linked with the biotechnology debate as a result of media exposure, litigation, and the publication of multiple books on the perils of technological transformation. His media exposure appears to be mostly the result of the pro-biotechnology coalition's interest in him. By focusing on Rifkin as a representation of the opposition, attention is deflected away from mainstream groups such as agricultural organizations and environmentalists, who may have a greater chance of obtaining public support and credibility in the policy process.

Schattschneider noted that efforts by interests to "control conflict before it begins" were prevalent in the policymaking process. The biotechnology coalition's efforts to discredit opponents demonstrate this technique in action. By inflating Jeremy Rifkin's importance among biotechnology opponents, suspicion is thrown on all opponents, even those who may be more relevant to the reality of late-twentieth-century America. These more pressing problems include the allocation of research funding, intellectual property rights, and potential agricultural sectoral shifts.

## Conclusion

Many of the findings made regarding agenda setting in the policy process by researchers such as Schattschneider, Bachrach and Baratz, Cobb and Elder, and Kingdon are supported by the establishment of the pro-biotechnology lobby and the issue-defining activities in which it has participated. Furthermore, the experience of biotechnology reveals that problem definition is the total of several aspects, which include but are not limited to the process of articulation of an issue by policy interests. Setting the stage for argument entails lining up supporters and casting aspersions on opponents. Issue definition also necessitates predicting and reacting to broader, uncontrollable occurrences. The defining of issues is an ongoing process of modification and maintenance.

Changes in the policy-making arena, driven by the volatile nature of public opinion and the unpredictability of social and political events, need that certain topics take on new meanings and connections to remain relevant in

the policy process. Successful policy interests are those that can best connect the issue to key policy issues.

The most obvious lesson regarding issue definition to be gleaned from the biotechnology experience is that controlling the context and structure of discussion is critical for success. While presenting biotechnology as an incremental technology and linking it with economic progress is critical to transforming this problem from one linked with it. We cannot ignore efforts to change the environment of discourse from one associated with danger to one associated with opportunity. Indeed, these are useful for students of issue definition. Efforts add an important component that merits further investigation.

Only one of the four strategies described in this study, issue association, interacts directly with the articulation of the issue in the policy process. The other three approaches, interest-group formation, alliance building, and discrediting the opposition, are concerned with shaping the parameters of public and policy-making discourse. These strategies highlight that it is not so much what is said as it is who says it that determines how an issue is characterized. The biotechnology industry's unified voice served as an effective source of communication during the policymaking process.

This, in turn, laid the framework for forging alliances with established public and commercial players, resulting in an institutional bias in favour of the biotechnology industry. In summary, the industry was able to face adversaries on its home turf. To retain this advantage and prevent opponents from garnering public support, the biotechnology business and its supporters worked to discredit people who could object to the many uses of biotechnology. Rather than confronting the content of its detractors' arguments, the biotechnology industry pursued a strategy focused on discrediting the credibility of individuals who were sceptical of the new technology.

The constant growth of biotechnology teaches us one more lesson: problem definition is never complete. The biotechnology experience demonstrates that the pattern of bigger social events leads to new relationships and that the success of conflicting interests is heavily influenced by how they foresee and adapt to new realities. Recent events indicate that future characterizations of biotechnology will continue to focus on connected economic problems, but that these economic matters will divide rather than unite biotechnology proponents.