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Department of Political and Social Sciences

Business Political Activity in Technical Controversy. A study of the socio-cultural embeddedness of economic organizations

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Marion Dreyer

Thesis submitted for assessment with
a view to obtaining the Degree of Doctor of the
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Florence, September 1997

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PREFACE

When I started work on this thesis some years ago the plan was to write a study on risk communication as a special type of protest communication in the context of technical controversy. This study has not been written, as I began to take a particular interest in the response of that societal institution that technology protest criticizes as the main risk-producing institution: big industry. When interest in this response grew - largely due to the fact that, by contrast to studying protest risk communication, studying economic actors as participants in technical controversy meant breaking fresh ground in research on the public space and public discourse - I started to deal with a field of research with which I was not familiar at that time: business political activity. The study of the existent literature in this area of research soon resulted in the conviction that there was urgent need of a more elaborate sociological approach to the topic. As a consequence, I decided to change the object of my thesis research. The present study integrates the ideas that I outlined for the original thesis project but it is a study on the response of industry as a technology utilizer to technology critics and opponents and not vice versa.

Here I would like to express my thanks for the co-operation of the groups and organizations that I asked for interviews concerning the case study on the basis of which the thesis theorizes about business political activity - the political activity of the chemical industry in the German genetic engineering controversy. In the course of my thesis studies all of my requests for interviews with representatives of the chemical industry, the new social movements, the genetic engineering research community and the politico-administrative system were granted. These interviews provided valuable data material without which the present study could not have been carried out.

Das Modell des aufs Private reduzierbaren Wirtschaftens hat sein Gegenstück in der Realität verloren, weil seine Hauptprämisse, die quasinatürliche Harmonie zwischen privaten und gesellschaftlichen Interessen, unhaltbar geworden ist. (Ulrich 1977: 231)

INTRODUCTION AND PRESENTATION OF THE RESEARCH DESIGN

This study is a contribution to *political sociology*. It deals with *political action* as a special form of social action. The social actor looked at in its role as a political actor is the *economic organization*. The political activity of economic organizations is discussed in relation to a specific situation of societal conflict, *modern technical controversy*, and as an activity that is influenced by and related to *society*. The theoretical-analytical perspective in which this discussion approaches the issue of *business political activity* is the *organization-environment perspective of »neo«-institutionalist organizational sociology*. The adoption of an approach that views the political activity of economic organizations as reflective of and responsive to the organizations' wider societal environment is connected with the following two research objectives. First, the study seeks to counter the continual neglect within the field of business political activity research of the influence of *social and cultural factors* on the political involvement of economic organizations. The bulk of existing research in the field comes from the political and management sciences and investigates business political activity in terms of a power-strategic relationship between business institutions and institutional politics. Little attention is devoted to the interface between the business institution and society as a whole system nor to the broader role played by cultural currents, motivations, and symbolic meanings in shaping business political activity. Second, the thesis seeks to contribute to the work that social scientists have carried out in the field of *new social movements research* on the way in which the protest actors under investigation challenge the boundaries of institutional politics. It does so by discussing business political activity in the sphere of noninstitutional politics as forming part of the main effect of the institutionalization of the new social movements. This effect is determined as the *»renaissance« of the public sphere*, as the *rise of public discourse* (Eder 1996a: 205).

"Sociologists who do research in the area of corporations and politics", Mizruchi in his sociological study on "The Structure of Corporate Political Action" states, "often find

themselves in a quandary" (Mizruchi 1992: 1). On the one hand, there are the questions from those inside the discipline and outside the special field about why a special topic was sociologically significant. On the other, there are the objections of political scientists who were convinced of the importance of the topics discussed but believe they should be dealt with in a different way. The present study finds itself exactly in this quandary. And, like Mizruchi, I hope that the introduction to the study which elucidates the above outlined research design will point out the centrality of the issue to sociologists and generally demonstrate that the work can contribute to the work of political scientists as well as management scientists - even if the latter two disciplines would have chosen a different approach to the topic.

Business Political Activity as a Reflexive Answer to Social Reality

The economic enterprise does not exist and operate in a social void. Like other organizations it depends upon a complex network of relationships that extend beyond those of the market for its existence and its survival. In times of a stable societal environment in terms of unchanging societal demands on business, this societal embeddedness is latent and unproblematic from the point of view of the economic organization. It becomes manifest and a critical business issue in times of changing societal demands. In these times the interrelations between business and society are livened up. They become an issue of societal reflection, discussion and negotiation. Business faces in these times a heightened need to explain and legitimize itself, to defend the basic institutional logic on which it is founded - namely, the logic of the market - and to adopt a position regarding new expectations. Changing societal demands make visible that business operates in a larger societal context in which support for economic operations and institutions cannot be taken for granted but depends on the responsiveness of business to this larger context. »Modern« technical controversy denotes such a situation of change. Institutional *and* noninstitutional politics in this context unveils the complex business-society-interrelationship.

Modern technical controversy shall be broadly defined as a type of societal conflict that has as its focal point *products and processes of science and technology* on the material level and

risks to man and nature on the level of content. The most important technical controversies that have arisen in the last two and a half decades in several countries of the Western world and that still constitute more or less critical political factors are the conflicts over the peaceful use of nuclear energy, modern chemistry, reproduction technologies and genetic engineering. In those countries with a strong technology-critical protest movement, technical controversy has become an important feature of the societies' political culture (Peters 1991: 12). This holds especially true for the Netherlands, Denmark, Switzerland, and Germany. Actually, in these countries technology induced risk is not only a permanent political issue but constitutes the prime source of existential uncertainty.

The decisive actors in the process of the development of modern technology into a contested and controversial issue are the *new social movements*. Major concerns of these collective actors converge on the idea that life itself and the minimal standards of a »good life« are threatened by the blind dynamics of economic and technological rationalization, and that there are no sufficient and sufficiently reliable barriers within the decisive institutions of the scientific-technical world that could prevent them from passing the threshold to disaster (Offe 1985: 853). According to this view, it is not only necessary, by citizen protest and the insertion of democratic »sensors«, to permanently urge science, economy and political institutions to sufficiently take into consideration safety, ethical and ecological aspects in institutional decision-making. According to this view, the belief that it is possible to control everything by calculation when one really wants to do so is a misconception and, therefore, self-limitation is indispensable.

Underlying this perspective is a special appreciation of the values of safety, health, a clean environment and participation. This "*selective radicalization of 'modern' values*" (Offe 1985: 853, emphasis in original) constitutes an answer to the question of how we want to live in the future, what we are willing to take and tolerate, and the basis on which new social movement actors in technical controversy seek to mobilize public opinion for their political goals. In this sense, technical controversies have a *cultural relevance*. To put it in Gerlach terms, they are events which "produce the public debates by which contemporary ways of life are criticized, defended, and changed" (Gerlach 1987: 103).

Notwithstanding their status as private companies, economic organizations are dragged into

these debates in which they have to strive for their social acceptance. While business has historically been viewed primarily as a provider of goods and services, at all times it has been expected to operate within the law and within prevailing norms. In modern technical controversy, however, it is confronted with new demands and the need to justify business technology policy in view of these new demands. Business faces a *lack of societal consent* as a legitimation basis for business technology policy. This societal consent is no longer given, granted, and predictable but has to be gained, negotiated, waited for.

What was dealt with in the 1960s and early 1970s in the management sciences under the title of »business social responsibility« in terms of a purely moral appeal to management recurs today with the new societal expectations as a political challenge. As it is not predominantly state politics from which this challenge emanates but noninstitutional political actors, and the solution sought is one for which there exists no adequate formal-political forum, business finds itself compelled to be innovative in its political response. This at least holds true for *big industrial enterprise*, which is the priority topic and target of technology protest, and its trade associations. Indeed, several of these economic organizations have shown creativity in their response to the special political challenge of technical controversy. This creativity constitutes the empirical starting point of the present study.

The Empirical Starting Point: Increased and »Publicity-Oriented« Business Political Activity

At the beginning of this study, the observation was made that, in the specific context of modern technical controversy, a significant part of big industry engages in increased and diversified political activity. Increase and diversification refers to *extended public communication activities* in terms of both *media-oriented styles of communication* and *face-to-face communication*. The bulk of face-to-face communication takes place in the context of bigger public events and, thus, is of a low level of »proceduralization«. In recent times, however, industry organizations have also instigated or participated in forums of discussion where information, arguments and opinions are exchanged with the aim to build agreement among carefully selected discussion participants comprising different industry »stakeholders«, including protest actors. These talks take place in a half public/half private sphere and are

referred to in the study as *»post-corporatist« negotiations*, drawing on the concept of a "post-corporatist order" developed by Eder (1996b: 192ff.).

Industrial public communication has not only changed in terms of structure since the 1970s, that is, in the period of time in which technical controversy developed into a characteristic of a number of highly advanced industrial societies. It has also changed in terms of argumentative design. »Informatory education« - banking above all on a scientific-technical rationality - has lost its dominance as an argumentative strategy, while »confidence-building« and »identity-building« - banking on cultural and/or moral reason - has gained this dominance. The latter two argumentative strategies basically consist of a normative commitment to the *idea of an environmentally and socially compatible steering of technical change*. In the last two and a half decades, industrial social responsibility, public accountability, and societal responsiveness have become the main messages of industrial public communication; the key concept of this communication is *public dialogue*.

It is fundamental to realize that the extension of business political activity to the public arena in the context of modern technical controversy, on the level of the firm as well as on the level of the business association, is not a self-evident social phenomenon. And this holds true not only because this extension comports with neither the classical model of capitalism formulated by economic theorists nor, so to speak, business political »reservedness« in the early post-war decades. The classical model of capitalism considers exclusively *business as the business of business*. Business political involvement in this view generally interferes with the original economic functions of the company by misallocating corporate resources and detracting from profit making. Against all (classical economic) theory, it seems that business at all times to some degree is involved in political affairs. In the direct post-war period of economic recovery, however, it did so to a very limited degree and »behind closed doors«, that is to say, in camera with representatives of the politico-administrative system. Towards the general public, corporations and business associations at that time followed, as Epstein puts it, a *policy of "silence is golden"* (Epstein 1969: 47; emphasis added). Generally avoiding communication in the public arena (apart from product and service advertising), they either did not publicly acknowledge their political interests, goals, and activities or, at the very least, did not advertise the fact that they were concerning themselves with politics.

Leaving most recent history and classical economic theory aside, both the mere fact of an increase in business political activity as it has occurred over the last twenty-five years in the context of technical debate and the fact of a growing »publicity-orientation« of business political activity in this context still are far from being self-evident truths for at least three reasons. On the one hand, *costs* do play a considerable role in business organizational decisions on whether to act or not to act politically, particularly as far as the individual company is concerned. Unlike manufacturing, product development or marketing, political activity generally is not viewed as a core function of the firm since it requires surplus resources (Jacobs, Useem & Zald 1991: 145). The costs of business political involvement are especially carefully estimated and evaluated as the rewards from political activity are generally *collective* - no firm in an industry or business at large can be excluded from their enjoyment. Given perfect or nearly perfect information, the incentive for the individual company is to take a free ride, to enjoy the benefits of others' actions without incurring the costs. Consensus-building as regards associative political action in its turn often not only has to overcome internal competitive rivalries but also opposition against spending member-resources for an »inclusive« collective good (Weber 1987: 26), that is, a good that must be shared with non-members, economic actors not willing to collectively invest resources; on the level of the association the principle of »internal« and »external« competition might prevent (collective) business political activity.

Moreover, business political activity holds the risk that the »venturing out« of the sphere of the *private* business organization creates opposition or more opposition to business goals and interests now revealed in the public forum of political debate; entering this public forum, however narrowly constituted, makes opposition and a reinforced opposition more likely. The risk to intensify and expand political debate is run by the politically active association as well as by the politically involved firm; however it is higher in the case of independent action as the company as an organization with clearly defined goals and interests is more likely to become the target of social opposition.

Evidently, the risk of generating or intensifying opposition from groups or organizations with opposing interests is especially high with business political activity organized as public communication. It is above all by going public that business organizations risk an extent and quality of attention which escapes their control and turns against their own interests. The specific risk resulting from the *inherent dynamic of public discourse* and the

high sensitivity of the business sector as regards this risk resulting from the dominant »logic of consequentiality« of this social sector is vividly captured by the following quotation:

> Für viele Unternehmer ist die Kommunikation mit der Öffentlichkeit suspekt, weil sie es die längste Zeit nicht nötig hatten und ihre Legitimation ausschliesslich aus der Zustimmung der Eigentümer stammte. Öffentliche Kommunikation ist auch nicht berechenbar. Sie ist ein offener Prozess, bei dem man nie im voraus weiss, wo und wie sie enden wird. Dies widerspricht ihrer Gewohnheit, dass Entscheidungen so ausgeführt werden und verlaufen, wie sie das geplant und angeordnet haben. Offene Proteste sind ihnen im Grunde ein Greuel. (Dyllick 1989: 480-481)

Considering the costs and risks associated with business political activity one might intuitively suspect that political action in general, and political action in the public arena in particular, are not behaviors preferred by business organizations.

To summarize the empirical observation which in consideration of these costs and risks aroused analytical interest, we can note: Economic organizations in the context of technical controversy expand their political involvement by engaging in public communication activities in the noninstitutional political arena. It is no longer organized protest actors only - often originating and typically seeking public discourse on conflictual issues - who increasingly develop professionalized forms of public communication in order to reach their political aims. Besides traditional product marketing, economic actors also conceive communication strategies and campaigns targeted at a larger public and aimed at the achievement of political goals. My conviction was that it deserved closer investigation; that the »Umweg über die Öffentlichkeit«, that is, the political strategy which in movement and associational research is considered as constitutive of those social actors who do not have access to the official political process of opinion-formation and decision-making including networks of corporatist negotiation or have only very limited access, is of increasing importance to economic organizations. Why does big industry in technical controversy, despite its strong strategic position in the system of political intermediation (which it occupies as it commands resources that are indispensable to the conduct of society), no longer rely on negotiation »in camera« in the classic-formal political arena but increasingly invests resources for building a strategic position in the arena of noninstitutional politics - a strategy traditionally pursued by groups, initiatives, and organizations which occupy a weak strategic position in the system of political intermediation?

Guiding Question and Hypotheses

The way in which this study systematizes the empirical observations leading to this question is a typology that distinguishes five major types of business political activity in technical controversy. These are *corporatist negotiation*, *post-corporatist negotiation*, *informatory education*, *confidence-building*, and *identity-building*. The five types of business political activity are assigned to two different arenas in which business pursues its political goals and strategies (cp. Offe 1985): the *institutional political arena* (corporatist negotiations) and the *noninstitutional political arena* (post-corporatist negotiations, informatory education, confidence-building, identity-building). The way in which the study attempts to explain the resort to diversified and two-level business political activity is by relating this activity to what is denoted as the special *business political environment of technical controversy* understood as including institutional and noninstitutional politics.

The study's *guiding research question* reformulated according to this analytical approach reads as follows: How can diversified and two-level business political activity and the different importance attributed over time to the different types of political action and political action arenas be explained against the specific cultural, social, and political characteristics of the societal context of technical controversy? As technical controversy is understood as a longlived and recurrent societal conflict, this specific societal context referred to as the business political environment of technical controversy is not understood as constituting an »instantaneous« political challenge but a challenge that has been in existence for two and a half decades. In relating to this stable but still developing business political environment, the guiding research question calls for the investigation of elements of structure as well as elements of process.

The question is approached in the form of *two main hypotheses* that will guide us through the study. The *first hypothesis* holds that diversified and two-level business political involvement as it is observable in the context of modern technical controversy is reflective of and a response to a process of *cultural change* initiated and promoted by the new social movements. This process of change consists of the diffusion and stabilization of the *idea of an*

environmentally and socially compatible steering of technical change. In technical controversy this process shows effect. One major effect is a *high degree of public exposure* of economic organizations (Dyllick 1989) which belong to the industrial sectors which concern goods and services that are closely related to life, food, and health (as is the case with the chemical industry). The major indicators of the public exposure of industry are state intervention, parliamentary scrutiny, mass media attention and technology protest. The public exposure of industry means that the affected economic organizations are plunged into a *»crisis of legitimation«* and need to (re)produce legitimacy by responding to *both* institutional *and* noninstitutional politics.

The *second hypothesis* holds that the growing importance of confidence- and identity-building communication and post-corporatist negotiation along with the decreasing importance of informatory education as the major change in business political activity in the noninstitutional political arena in the context of two and a half decades of technical debate, is basically due to a *learning process* on the side of industry. According to this hypothesis, industry has increasingly realized that social acceptance requires more than public education, that it requires above all public commitment to the idea of environmentally and socially compatible technical change. The claim is that this commitment increasingly is experienced as constituting a *social constraint*, a basic requirement for regaining social legitimacy which in its turn is a basic requirement for maintaining a high degree of organizational autonomy and discretion.

According to this analytical model, business political activity presents a response, variable according to place and time, to a political environment that in its turn underlies historical and contextual changes. The analytical model further holds that the business political environment of today is more complex in terms of content and structure than that of the past.

The Concept of Social Legitimacy

The theoretical perspective that this analytical model draws on is the *neo-institutionalist approach in organizational sociology* as it has developed in the United States since the mid-

1980s. The most basic idea of this approach is that the organization is an open, society-related entity that has only limited autonomy in its goal-determination and activities.

The dependence upon the wider societal environment - culture, society, political system - is determined as constituting basically the dependence upon a societally conferred status, namely the *social legitimacy of organizational structures and behaviors.* The work of the »neo-institutionalists« has been pathbreaking as it points out aspects of legitimacy that are equally essential to the successful continued existence of organizations as criteria of efficiency. In the bureaucracy model of Max Weber, both dimensions - efficiency and legitimacy - are taken into consideration (Weber 1972). Until very recently, however, the discussion of Weber in organizational sociology has focused on aspects of the efficient coordination and control of organizational activities. The associated neglect of aspects of collective recognition has become a subject of discussion only in the context of the »revival« of institutionalist ideas in this field of sociological research in the mid 1980s. In this context, the persistently successful business organization has been described as an organization that does »well«, that means, efficiently transforms goods into products and services, and does »good«, that means, maintains or (re)produces its social legitimacy.

Social legitimacy is a central concept of the present study as business political activity in technical controversy is examined as a response to a lack of social legitimacy. Unlike the bulk of the neo-institutionalist literature, this study does not discuss social legitimacy in relation to »taken-for-granted-behavior« but in relation to *strategic action.* It does not examine economic organizations as passive entities entrapped by coercive or cultural forces in their environments. Instead, it investigates them as *purposive, goal directed social actors responding to socio-cultural constraint.* Business political activity is determined as an activity that is affected by both a logic of appropriateness and a logic of anticipated consequences. The basis on which both logics are applied is defined as the interpretation of the wider societal environment which is, in principal, subject to ambiguities and uncertainties.

The Concept of Political Action

The theoretical-analytical perspective of this study views economic organizations as entities which possess non-economic dimensions that give them specific organizational/sectoral

political interests and goals and necessitate political involvement. The principal concern of existing research on business political activity is to promote this view and the present study shares this concern. The study may be considered innovative in the following respects: It points out *communication* as the essence of business political activity (cp. Elder & Cobb 1983), sheds light on the activity's *expressive dimension* and its importance in the sphere of *noninstitutional politics*, and relates the way in which it is organized to a *transformation in society's ideological structure*. The transformation at the cultural level is claimed to render technology a permanent political issue, to urge industry and other decisive institutions of the scientific-technical world to speak out in public and thus generate an intensification of public communication, and to turn commitment to the idea of an environmentally and socially compatible technical change into an important resource of legitimation in political and public discourse.

The basic analytical tool of this communication and culture-oriented approach to business political activity is a *multidimensional and multilevel concept of political action*. This concept decouples political action from the official arena of politics and determines it as a generally operating type of social action that has two aims, the exercise of power and the transformation of this power into a legitimized social order (Hitzler 1994). It is the consideration of the second aim that allows us to grasp and discuss political action in its cultural and communicative-expressive dimension. The transformation of business power into a »Macht der Verhältnisse« requires the production of approval and this, in turn, necessitates "signifying work" (Snow & Benford 1988). The conceptualization of political action as a power *and* approval oriented activity allows one to gain insight into the way in which business actors assign meaning to and interpret technology issues in ways that are intended to mobilize political and public support and to demobilize business antagonists.

Highlighting the Socio-Cultural Embeddedness of Economic Organizations

The way in which this study seeks to contribute to the work of scholars investigating institutional effects on organizations and to the work of those examining the political activity of economic organizations, can be summed up as follows: The way is to shed light on the

socio-cultural embeddedness of economic organizations. By approaching business political activity in a neo-institutionalist perspective that draws on cultural theory, the study seeks to counter, first, the societal and cultural blindness of the bulk of the literature on business political activity and, second, to support a recent development in the field of neo-institutionalist organizational sociology in which for-profit organizations increasingly are made the subject of research on the subjection and responsiveness of organizations to normative constraints. Even though all companies are deeply embedded in a system of laws and regulation enacted by the political system and some of them in a sphere of high public scrutiny where pressure is exerted by social movement actors and the mass media, neo-institutionalist research for a long time almost exclusively dealt with nonprofit, nonmarket organizational forms, in particular public agencies. In short, the study seeks to promote a perspective in the two research fields that views economic organizations as a reflection of and a response to the total societal environment and not merely to markets and state politics or exclusively to markets.

The Case Study

The *case* which is investigated in this perspective is the *political activity of the chemical industry in the German genetic engineering controversy.* Genetic engineering is a technology the use of which concerns basic spheres of life and is characterized by considerable cognitive and normative uncertainty concerning what the effects of its different applications might be as well as their evaluation. Not surprisingly, in many countries of the Western world, the technology's introduction has provoked political and public debate varying in scope and intensity. In Germany, the debate about the risks and benefits of genetic engineering is especially extensive, intensive and long-lived. The chemical industry, the study's unit of analysis, is the key participant in this debate in the private industry sector. It is one main characteristic of the process of commercial innovation and exploitation of genetic engineering in Germany that the private-sector activities in this area have been dominated from the outset by the big multinational companies of this industrial sector. Partly due to its technological leadership and partly due to its general image problems, the chemical industry is the industrial sector which has faced the highest public exposure in the controversy. As a consequence, it is also the industrial sector which has made the most concentrated effort to influence political

and public debate in its interests.

The industrial sector as such, first of all, is a field of competition, an economic category for classifying enterprises with the same or similar range of products competing with each other. At the same time, however, it is an inter-organizational system that is capable of developing collective behavioral patterns. This does not only relate to cartel-like co-operations pursuing joint economic strategies but also to trade association co-ordinated collective action pursuing joint political strategies. As the case study demonstrates, the national chemical industry association, the Verband der Chemischen Industrie (VCI), has been in a relatively strong position to mobilize its members in a concerted response to growing regulatory pressures and technology protest due to a *high level of sectoral organizational development* and a *strongly developed sectoral culture.*

The case study investigates the chemical industry's political involvement in the time period from the mid-1970s - when the chemical industry started to take an interest in the new technology - to the mid-1990s - when the technology had developed into an integral tool of the sector. It shows in a phase-based exposition of this involvement how an increasingly turbulent political environment comprising institutional and noninstitutional politics has induced the chemical industry to *expand, diversify and professionalize its political activity.* More specifically, it expounds how an unfavorably changing political context has caused the industrial actor to move forward into the public arena and to engage in a communicative effort aimed at demonstrating commitment to the idea of a socially and environmentally compatible use of modern biotechnologies. This communicative effort, the case study demonstrates further, has increasingly taken the form of direct contacts and active discussions.

I consider the genetic engineering controversy as exemplary of the *politicization and moralization of economic activity* in »risk society« (Beck 1986) and of the *commitment to public communication* with which economic organizations respond to the new political environment.

Organization of the Study

The study is organized in *three parts.* In *part A* the theoretical-analytical framework is

developed. *Part B* applies this framework to the case study. Part C is the concluding chapter. It summarizes the empirical results and sets forth the significance that the study's theoretical perspective attributes to them. The content of the individual chapters of part A and B is outlined in the introduction to these two parts.

PART A: TOWARDS A THEORY OF BUSINESS POLITICAL ACTIVITY IN TECHNICAL CONTROVERSY

This first part presents the study's *theoretical-analytical framework* which it employs to provide an *explanation of the nature of business political activity in modern technical controversy.*

First, Part A points out the organization-environment perspective of »neo«-institutionalist organizational sociology as the theoretical perspective in which the object of research is discussed and introduces the key concepts and classifications applied for analysis in this perspective. The theoretical-analytical model is developed by critical revision of the dominant approaches to business political activity in the predominantly U.S.-American literature. Then, this model is applied to explain the involvement of economic organizations in political activity in the institutional *and* noninstitutional political arena in the context of technical controversy. This is identified as the major change of business political activity in the noninstitutional political arena in the context of two and a half decades of long-lived and recurrent technical controversy: The growing importance of »normative« and interactive communication along with the decreasing importance of unidirectional educational communication.

The prime concern of this first part is to point out that, in contrast to previous research on the topic, the present study, by analyzing business political activity in the context of a specific type of *societal conflict* determining political and public debate with increasing intensity since the 1970s, takes a more macrostructural, or so to speak, a more sociological perspective. It examines business political involvement in consideration of the *general relationship between business and society.* It inter-relates this type of business behavior and society by viewing business political activity as basically aimed at exerting influence on the general social order of living together[1] and in turn being basically shaped by this social order imposing constraints on and creating opportunities for general business activity. With the analytical

[1] In the pursuit of this goal business basically relies on two logics of influence: shaping state decisions and shaping public opinion and the opinion of selected publics with the latter strategy understood as both an avenue to the goal of the former and, in the light of increasing problems of regulatory implementation, as a strategy in its own right geared towards the production of general social acceptance of business policy.

focus on the latter aspect the study takes into account cultural-institutional elements (in terms of the diffusion and stabilization of new value patterns and sense structures) and elements on the level of public policy and sociopolitics (in terms of the »public exposure of business« in form of technology protest, public scrutiny, mass media attention, and business social regulation) as influencing factors of techniques, rationales, and dynamics of business political involvement.

It is this research perspective on the *wider societal embeddedness* of business political involvement and the analytical focus on the impact of this wider societal embeddedness on instigation, scope, types of action and relational structure of business political activity in which the study departs from the dominant approaches of existing sociological, political science, and management science research on the topic. The greatest part of this research restricts analysis to the dyadic relationship between the economic and the political system and/or specific firm and industry characteristics as determinants of business political activity (these studies generally are grouped under the rubric of »Business and Politics«). The minor part that takes a broader research perspective of business political activity as a society-related behavior in a normative and/or practical rather than analytical orientation largely restricts research to the demonstration of the need for and/or ways to transform business demands and interests into socially legitimate demands and interests in order to be politically successful (this research generally is grouped under the rubric of »Business and Society«).

The following four chapters shall point out that, in order to explain business political involvement, the present study focuses instead on the system-bridging relationship between business and society (of which the relationship between the political system and the economic system is only a part) and investigates *social legitimacy*, understood as societal approval of general business policy and business power, as both an inherent objective and a major influencing factor of business political involvement.

Structure and Contents of the Chapters

More concretely, the contents of the four chapters of this part of the study are the following: The point of entry of my inquiry into the role of business as a political actor in technical

controversy is to show in more detail how the research topic of business political activity has been dealt with so far in the social sciences. The *first chapter* traces the emergence of business political activity as a scholarly concept and a specific line of research of such diverse disciplines as sociology, political science and management science. It identifies two broader research fields within which the topic specifically has been addressed. These are typically referred to as *Business and Politics* - first and foremost, a research field of political science, sociology, and management science - and *Business and Society* - above all a research domain of management science and sociology.

The presentation of this twofold anchorage of research on business political activity in the social sciences shall help to demonstrate the particularity and the innovative potential of the present study's research perspective by pointing out how this specific perspective departs from both of the major approaches to business political activity in the social sciences and at the same time integrates particular facets of these approaches. On the one hand, this study rejects the restriction of business political activity to the dyadic relationship between the economic and the (formal) political system as is typical of the research field of »Business and Politics«; however, it adopts the central importance that this research field ascribes to *power* (and *function*) as one dimension of business political activity and the political system as one major influencing factor and addressee of business political activity. On the other hand, it rejects the normative and/or practice-orientated narrow perspective on and understanding of business social legitimacy in terms of the societal acceptance of business political action and underlying motives as a necessary prerequisite for effective business political activity - which, the corresponding argumentation goes, could be met by cognitive and communicative efforts of developing a cogent view of the public interest and, then, political positions and strategies that embody this notion - as is typical of the research field of »Business and Society«. Nevertheless, the study adopts the major role that this latter research field attributes to *communication* (and *expression*) as one dimension of business political activity and to the wider societal environment in terms of the public at large, civil protest actors[2] (and prevailing and changing societal values and expectations) as key reference points of political strategy development.

The respective major shortcoming of the two ways in which business political activity

[2] The concept of civil (*zivilgesellschaftliche*) protest actors is expounded under point III.1.1.

has been dealt with so far in the social sciences may be summarized as follows: As regards research on business political activity in »Business and Politics«, the chapter points to an incapacity to recognize the increasingly political nature of business performance in the public and half public/half private arena and, resulting from this, to a neglect of the growing importance of mass media-oriented and »post-corporatist« styles of communication and repertoires of action. Concerning research on business political activity in »Business and Society«, it underlines the neglect of the constitutive character that social legitimacy, in terms of societal acceptance of general business behavior, has for business political activity. This study, instead, views scope and design of business political involvement as determined to a great extent by the degree of social legitimacy of general business policy and power.

As a general shortcoming of the bulk of previous research, I point to the relatively scanty attention directed to the aspect of business political activity as a *(macro)structurally influenced activity* in favor of an extensive investigation of business political activity as a functionally oriented activity. The benefit of drawing on both research fields, however, is demonstrated to exist in the valuable insights that the two lines of research respectively provide in the power and communicative dimension as the functional and expressive dimensions of business political activity and in the specific importance of the official political arena and the public arena as arenas of business political activity.

It is then against the background of the specific insights and shortcomings of the established approaches to business political activity that the approach of this study is defined. This approach is based on the »embeddedness« perspective of institutionalist organizational sociology. In this perspective economic and other organizations are embedded into wider societal environments - culture, society, the political system - which shape organizational life both by imposing constraints and creating opportunities. The study adopts the »embeddedness« view by conceptualizing and discussing business political activity in technical controversy as a *response to a specific business political environment.*

After having positioned the present study in the available social scientific literature, the first chapter shall tackle the striking U.S. dominance in this literature. The research lag of Western Europe in comparison with the United States concerning research on the political involvement of business actors is explained by differences in empirical developments, namely differences in the nature and time of change in business political activity in the two highly advanced

industrialist systems in the post-war period.

The *second chapter* then proposes a *conceptual definition* of business political activity. The definition is developed by critical discussion of the prevalent definitions in the relevant American literature. It is described as being characterized by two main features: The first is the characterization of business political activity as business behavior that occurs in the *institutional* and *noninstitutional political arena* and that is not necessarily directed at the political system as a specific societal subsystem. Its second main feature is characterized by viewing business political activity as going beyond mere strategic and power behavior (that is, behavior directed at acquiring, developing and using options to act (even) against the resistance of second actors): The proposed concept defines business political activity as strategic, power, *and dramaturgic* behavior.

Underlying this definition of business political activity is a broad concept of *political action* that understands this type of action as being de-coupled from (which does *not* mean unrelated to) the specific societal subsystem of politics. This concept conceives of political action as a general social phenomenon that takes place on all levels and in all constellations of the social order. It defines political action by its inherent action goals. These are determined as the objective of preserving one's interests against the resistance of second actors and as the objective of gaining the approval of third parties to do so in order to create an obligation for that which is to be put through. Political action is viewed as being ultimately directed at the exertion of influence on the general legitimate social order (which in modern society is largely, however not exclusively, determined by the formal political system; one only has to think of the power of traditions, rituals, and prevailing societal expectational structures) in a way that provides the political actor with a strong position of power. Proceeding from this goal determination, political action in an action-typological perspective is described as strategic behavior that is power- *and* approval-oriented implying self-staging activities. The approval of third parties of a social actor's power is identified as a necessary precondition for the transformation of this power into a legitimized social order. In the very abstract, political action is conceptualized as a typically triadic situation and relationship: Political involvement is determined as action designed to achieve approval of third parties to preserving one's will against the resistance of second actors.

On the basis of this understanding of political action, business political activity is

described three-dimensionally as power, strategic and dramaturgic behavior with dramaturgy as that dimension that is claimed to be continually neglected in the relevant literature. Dramaturgy is described as referring to the ultimate goal of business political activity which is, so to speak, to transform business power into a *Macht der Verhältnisse.*

In sum, it will be argued that the proposed conceptualization of business political activity with its understanding of the formal political system as a central but not exclusive arena and addressee of business political involvement presents an analytical tool that provides especially fruitful insight into the increasing importance that the public and half public/half private arena has gained as an arena of this type of business activity. Moreover, it will be contended that by identifying the approval of third parties as the inherent objective of business political action, this thesis sheds light on the inherent cognitive, cultural and communicative-expressive dimension of business political activity.

The *third chapter* applies the quintessence of the proposed concept of business political activity to the specific case of technical controversy. It will, first, provide an outline of the *relational field* in which business political activity in technical controversy takes place; business political activity is concretized as a specific *Freund/Feind*-relationship in this specific type of societal conflict. Then, a classification of business political activity as regards political involvement in technical controversy will be proposed. Business political activity in technical controversy may be classified, it is suggested, in terms of different types of business political action. The typology distinguishes between *five activities designed to produce approval of business power policy* (with business power policy understood as referring to a policy that is to preserve business interests against the resistance of second actors) which comprise two different modes of political communication: *negotiation* and *presentation* (presentation of »facts« and the »self«). Individually, they are referred to as *corporatist negotiation, post-corporatist negotiation, informatory education, confidence-building*, and *identity-building*. The five types of business political activity will be described and delimited by identifying the arenas in which each of them typically is brought to bear (two major arenas of business political activity will be distinguished: the institutional and the noninstitutional political

arena); their direct addressees[3] (a typology of five different types of sought-after business allies will be proposed); the extent of interactive immediacy; the extent of dialogic drift; the most pronounced basic function (four basic functions of business political communication - and communicative action in general - will be identified: a relational, a representative, a self-representative, and an appellative function); the terms of content (four major contents of business political communication will be differentiated: a factual, a normative, a policy-oriented, and a moralistic content); and finally, the main logic applied for approval production (four major logics will be distinguished: a collective rationality, a scientific-technical rationality, a cultural logic and a moral logic). The five types are identified as making up the political action repertoire of business in modern technical controversy. While corporatist negotiation and informatory education, however, are determined as making up the »early« action repertoire, confidence-building, identity-building and post-corporatist negotiation are expounded as political courses of action that have been used only in more recent times.

The *fourth chapter*, finally, is an attempt to relate intensive and diversified business political involvement in technical controversy and the different importance attached to the five action types distinguished over the last two and a half decades in this societal conflict situation to a number of contextual factors. The *business political environment of technical controversy*, as these contextual factors are conceptualized, is defined as exceeding the formal political system. It includes social protest and public criticism which *politicize business technology use* by subjecting it to the »public interest« operationalized as a *socially and environmentally compatible use of technology*. This, so to speak, »subpolitical« challenge constitutes at the same time, it is argued, a *new form of moralization* of business technology use. It is a challenge to justify this use beyond market, contractual, administrative, or legal obligations. Since the 1970s, the idea generated and promoted by social movements, of how to deal with technology, it is further argued, is in a *process of diffusion and stabilization*. This means, the argumentation goes, that business actors involved in technical innovation more easily get exposed to local or national technology protest and that technology protest more easily finds argumentative and active - for example, regulatory - support in society at large. In brief, the

[3] *Direct addressees* are the social actors whose support business seeks for preserving its interests; the social actors against whom business seeks to preserve these interests are referred to as the *indirect addressees* of business political activity.

business political environment of technical controversy is determined as a context of *cultural change* in terms of changes in the ideological structure of society. Thus the *public exposure of business* and the *»crisis of legitimation«* which it faces in technical controversy are identified as long-lived political conditions.

The way in which business has responded to these conditions - the increasing resort to public commitment to the idea of a socially and environmentally compatible use of technology in the form of confidence- and identity-building communication and post-corporatist negotiation - is described as the result of a *learning process* in conditions of socio-cultural change. It is not a mechanistic reaction to a changing environment, the argument goes; instead, it is the reaction to the experience that adherence to this newly developed societal idea constitutes a *social constraint.*

... while yesterday's senior manager could be concerned almost exclusively with positioning the company in the marketplace, today this manager must know how to position the company in society at large. Managers need the kind of information and training that will provide a better understanding of the elements in society most likely to affect them - government, the media, public interest groups, and community organizations. (Colodzin 1987: 211)

Sociology reflexively structures its subject matter which itself has learned to think sociologically. (Giddens 1984: 43)

I. BUSINESS POLITICAL ACTIVITY: DEBATES AND AGENDAS

Business political activity has been a subject of interest to scholars from such diverse disciplines as political science, management, and sociology. As far as sociology is concerned, interest in the topic has been rather scanty. The greatest part of the studies that explicitly deal with business political activity as a concept and empirical object of research is to be found in the field of management science. Since the 1970s, business political challenges have become a key concern both of management theorists and practitioners and their attention to the topic appears to be still growing. Management studies on business political activity, evidently practice-oriented, typically advise business political involvement and strategy development in the light of an increasing external politicization of large parts of the economic world.

The bulk of relevant sociological and political science studies deals with business political activity implicitly rather than explicitly in the context of general research on public policy agenda-building, interest group behavior, and risk communication. While in the agenda-building and interest group literature, business political activity is dealt with mostly as part of the general process of interest group competition and »pressure-politics« in institutionalized politics, studies on risk communication shed light on the goal-oriented and strategic dimension of business risk communication but do not identify and discuss the specific political nature of such communication. Generally speaking, up to now, research on the specific topic of business political activity presents practice-focused rather than theory-focused research.

The concern of this first chapter is to position the study in the realm of interdisciplinary research on the topic. That means, positioning will not be done by specifically addressing the

(few) sociological contributions but, instead, by identifying two broader fields of research that encompass the bulk of research on business political activity and present research domains of all three disciplines involved in this specific line of research. These two research fields are generally referred to as *Business and Politics* and *Business and Society* with the former being equally a research domain of sociology, the political sciences, and the management sciences, and the latter, first and foremost, being the research domain of the management sciences and sociology. While business political activity as a research topic developed in the 1970s from the field of Business and Politics and soon became established as a specific line of research, in the late 1980s it also became incorporated in the field of Business and Society[1]. Studies in the two fields of research overlap in their principal interest of highlighting that business responds to two kinds of social forces: market and nonmarket, but differ in their overall analytical focus and guiding research questions. While the field of Business and Politics focuses on businesses' relations with the formal political system and mainly does so in terms of business power, the field of Business and Society concentrates on businesses' relations with society at large and primarily does so in terms of business social legitimacy.

By addressing the different approaches to business political activity of these two research fields, the chapter, on the one hand, shall trace the emergence of business political activity as a scholarly concept and line of research and, on the other, demonstrate the innovative potential of this study's research perspective by pointing out how this specific perspective departs from both of the major approaches to business political activity in the social sciences[2] and at the same time integrates specific facets of these approaches.

Up to now, specific research on business political activity clearly has been a U.S.-dominated research domain. This fact shall not remain untackled in the following expositions on the present study's integration in social scientific research. After the study has been related to and delimitated from the two major approaches to business political activity, the chapter will attempt to explain the research lag, as far as Western European social scientific research is concerned, against the background of different empirical developments of business political

[1] The research field of Business and Society itself emerged as an interdisciplinary field of study in the 1970s.

[2] In this study, the management sciences, presenting, so to speak, a hybrid of economics and the - narrowly defined - social sciences in view of the study's concentration on their sociological rather than economic insights shall be classed with the - broadly defined - social sciences.

involvement in the two highly industrialized systems.

1. Business and Politics

Business and Politics is an interdisciplinary field of study the central research object of which is the relationship between the economic and the political system as the relationship between two distinct societal subsystems. It has its analytical focus on the chances, activities and strategies of business to influence the formal political process according to its interests[3]. *Political* in this field of study is typically either restricted to structures of and activities in the formal political system or to these plus structures and activities directed to the formal political system. Structures and behavior, the nature of which could be described as political but are outside the formal political system, either are excluded from analysis or are treated peripherally. *Political action* usually is reduced to the dimensions of strategy and power.

The topic of business political activity emerged in this research context during the 1970s and brought in its wake a significant reorientation of the broader field of study.

Up to the 1980s, that is, in the immediate post-war decades, the social sciences - which was at that time primarily political science and political sociology - dealt with the topic of business and politics at a relatively high level of abstraction and with broadly conceived grouping concepts. The key issue underlying this early research on business and politics is well grasped by the title of an early and influential book: *Business as a System of Power* (Brady 1943). It focuses on the general power of business to shape public policy in its favor. Operating on the assumption that business power is, above all, a function of business' potential for mobilizing as a politically united force, much of the literature is concerned with the question of to what extent business as a whole is politically unified. This work is largely structured by the controversy known at that time as the *pluralist model versus the class/elite*

[3] As business political objectives are discussed, for instance changing the size or structure of the market, reducing the costs in an industry, shaping business and/or industry regulation and deregulation etc..

model[4]. The elite model (in its extreme version) advances the idea of business as a unified capitalist class with concentrated political power of a type that makes it possible to use government for its particularistic interests[5]. The pluralist model (in its extreme version), reasoning that business' political cohesion was unlikely given the divisive nature of economic competition, just as business collective political action was unlikely given the collective goods problem, advances the idea of atomistic companies competing for political influence[6]. In this view, the conditions for business political unity and, with that, the conditions for a translation of economic concentration and strength into political privilege are not given[7].

In the course of the 1970s, the debate about whether business was primarily unified or divided increasingly developed ideological traits (Mizruchi 1992: 21) and eventually declined in importance. Attention shifted from the question of *whether* business is unified to the question of *when* it is unified. The conditions under which passive and active unity among business organizations occurs moved into the centre of analysis. A great deal of the studies which take this newer approach to business unity and power proceed from the Olsonian collective goods problem and point to the conditions under which free rider problems could be overcome[8].

This reorientation in the study of business power is not the only development that changed

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[4] For a general overview on the different positions on the issue of business and power, see Berg & Zald (1978). For a more detailed review and critical discussion of the »elitists versus pluralists« debate, see Mizruchi (1992: 3-8, 14-32).

[5] As advocates of this view, see, among many others, Mills (1956), Hunter (1953), Heilbroner (1964). A useful summary of several of the multiple facets of this position may be found in the collected essays by Zeitlin (1977).

[6] As empirical confirmation of the existence of business political pluralism, the latter model, in the first place, used the »managerial revolution« (Berle & Means 1932). Professional managers were portrayed as bureaucrats rather than capitalists beholden only to themselves and thus pursuing their particularistic interests regardless of the political consequences for the class as a whole (Mizruchi 1992: 4).

[7] For such arguments, see, among many others, Dahl (1958), Epstein (1969: esp. 187-253), Chamberlain (1973), Nadel (1976).

[8] During the last ten to fifteen years, it is, above all, social network factors which have been investigated as such conditions: social networks of enterprises are analyzed as important arenas of business power. Among these, interlocking directorships - that means, particular individuals sit on two or more corporate boards - are given the most attention. For a review of recent developments in the analysis of business power focusing on those approaches rooted in the techniques of social network analysis see Scott (1991). For pertinent contributions to this approach see: Useem (1984) and Mintz & Schwartz (1985), and, more recently, Mizruchi (1992).

the face of the research field of Business and Politics in the 1970s. The field as a whole experienced an expansion, differentiation, and empirical orientation reflecting empirical changes in business political behavior in terms of increased and diversified political involvement. This transformation has three main features. *First*, the previous dominant position of the political sciences and political sociology in the research field is relativized by blossoming work on business and politics in the management sciences.

Second, the aspects of power and the general relationships between state and capital loose their prior major importance. Focus shifts to more concrete interactions between state and business. Power frequently is an explicit or implicit concern of this literature; however, it is less tackled in rather abstract studies on existence, extent, and structural conditions of business political power than in studies on attempts of business to exert and build power in concrete state-business relationships. This work takes an interest in describing *business-specific* political resources - which are identified basically as *extensive material resources* and an associated strong ability to organize and lead a conflict - and their strategic use to build business power in the form of public policy that is favorable to business interests.

And, *third*, there is the development of a more differentiated view of »business« as a political actor. Since that time, the object of analysis has been less business as a whole or the corporate elite but rather more narrowly conceived groupings such as the single firm and coalitions of firms such as specific industries. More attention is paid to differences in the political resources of specific firms and industries and the political contingencies faced by specific firms and individual industries which both are assumed to result in specific political strategies. Research on the level of the firm has proliferated since then. This research is predominantly carried out by management scientists and its basic argument is that, in pursuing corporate interests, collective action (e.g. through trade associations) is but one choice open to firms[9].

The empirical point of departure of the bulk of this work on the political activity of firms, firm-groups, industries, and business as a whole is the observation that, during the

[9] These studies usually draw on Epstein's book *The Corporation in American Politics*. The book which was published as early as in 1969 is widely recognized as the landmark on scholarship on corporate political activity. Even today, it is one of few books dealing exclusively with the topic of political activity on the firm-level. One, or even *the* key issue of the book is corporate political power. It is the central concern of the author to expound the political, social, and economic limitations of this power. Being "patently *normative* in character" (Epstein 1969: VIII; emphasis in original), the book formulates a political theory of the firm in a pluralist theoretical perspective that recognizes corporations as legitimate participants in the American political process.

1970s and 1980s, changes in business environments at the local, national, and international level did lead to increases in the scope (number of issues) and magnitude (depth of involvement) of business political activity, and to a diversification of political strategies[10].

In sum, central to the reorientation in research on business and politics in the 1970s is the shift in emphasis from business as a system of power to business organizations as power-oriented political actors; emphasis shifts from the aspect of business structure to the aspect of *business action.* The rubric which is established to class studies in this new perspective is correspondingly labelled *business political activity*, with business political activity as the concept that generally refers to the political action of economic organizations; when a single organization is the object of analysis, the study typically is classed under the sub-rubric of *corporate political activity*[11].

The central assumption underlying this more empirically oriented research perspective is that business organizations generally respond to two kinds of social forces: *market and nonmarket.* In the case of market forces, a firm or industry responds by varying its product, service, promotion and price mix to meet changing consumer needs and expectations. In the case of nonmarket forces economic organizations may respond with political and/or social activities, with the former distinguished from the latter, first and foremost, by its power-orientation. The view that studies specifically investigating business political activity seek to

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[10] For the United States, the hypothesis of a general increase in business political activity during the 1970s and 1980s has been defended by numerous scholars in this field (see among many others, Epstein 1969: 3, Vogel 1981, Keim & Zeithaml 1986: 828, Keim & Baysinger 1993: 127-129). As empirical proof of this hypothesis, scholars pointed to the following phenomena: the increase in the number of corporations with public affairs offices in Washington D.C.; the greater status of government relations within the corporate organization; and the greater personal involvement of chief executive officers in external relations (see esp. Vogel 1981: 176-178). The hypothesis of a diversification of business political activity has been advanced, e.g, by Keim & Zeithaml (1986: 829). The authors contend that traditional political strategies of lobbying and direct campaign contributions have been supplemented with alternative strategies such as constituency building, coalition building and advocacy advertising.
For Western Europe and Germany there are - to my knowledge - no empirical studies advancing these hypotheses. However, there is, on the one hand, the management sciences' growing concern with business' sociopolitical and sociocultural environment which can be taken as an indicator of a growing need of business to react to political and social challenges. On the other hand, as far as the highly publicly exposed industries are concerned, increase in and diversification of corporate/industry political activities since the mid 1980s are highly visible. This visibility refers, above all, to corporations and trade associations increasingly »going public« and speaking out on political issues.

[11] For a brief overview of issues tackled in the literature on corporate political activity, see Mitnick (1993b: 2-4).

foster is that economic organizations are entities which possess non-economic dimensions that give them specific organizational/sectoral political interests and goals and necessitate political involvement.

While political scientists and sociologists usually examine business political activity as the political activities and strategies of organized interest groups (such as trade or peak associations), management scientists concentrate on the critical role of the individual firm as a political actor. At both levels of analysis, political involvement is typically conceptualized as business power behavior on the basis of economic resources as business-specific political resources. The bulk of the literature further approaches business political activity by attempting to categorize business behavior by looking at those activities and strategies that are pursued in the formal political arena or are directed at the political institutions and designed to influence regulatory and legislative decisions in the interests of a firm, an industry or a general business. As a rough classification, the literature typically distinguishes between business political activity concerned with economic regulation and legislation and primarily following a *market rationality*, on the one hand, and business political activity concerned with social regulation and legislation and primarily following a ***political and social rationality***, on the other[12]. The former category includes activities designed to avert economically unfavorable regulation and public policy and activities directed to the strategic use of regulation and public policy as tools for achieving economic objectives (for instance, regulation may provide a single firm or a national industry with a competitive advantage in a specific national or international market)[13]. The latter category refers to activities aimed at the prevention, moderation or repeal of restrictive social regulation and legislation and the strategic use of social regulation and legislation as tools for achieving political objectives (for instance, in a situation of societal conflict, legislation may have the effect of lessening

[12] While *social regulation* refers to controlling activities with direct effects on people - such as safety, affirmative action and environmental regulation - *economic regulation* refers to the control of instrumental market activities such as price, entry, and trade practices.

[13] This view that economic organizations use politics as a means to achieve economic objectives that they cannot otherwise achieve through market channels contradicts the premise of neoclassical economics that the viability of the firm depends on its ability to produce at low cost and meet market demand. Stigler (1971), however, has shown that firms often seek relief from the pressures of a competitive market. They attempt to obtain from the state subsidies, entry restrictions, protection from new products and technologies, and prices that guarantee profits.

challenges from citizens and public attacks and, consequently, their negative effects on business).

Finer classifications, mainly suggested by the literature on business political activity at firm level, typically distinguish some (usually four or five) specific influence activities such as lobbying, political action committee contributions[14], coalition-building, constituency building, and advocacy advertising[15]. These classifications usually lack a specific organizing dimension; they merely demonstrate the existence of different objectives or options of influencing public policy[16].

Empirical research typically focuses on direct interactions between business organizations and formal political institutions, particularly business-government interactions and the formal political system as the major arena of business political activity.

Attempts to explain business political activity are rather rare, and are neither very systematic or contextual. Management studies largely restrict explanatory efforts to considerations in the framework of resource-based strategic management theory. In sociology and political science, analysis of the determinants of business political activity concentrates on business organizational and interorganizational structures, such as firm characteristics, industry organization, and business network properties[17]. Expositions on the wider environmental structures of business typically take the form of introductory statements pointing to, first, increased levels of business social regulation - that is, controlling activities with direct effects on people, such as safety, affirmative action, and environmental regulation - and an increase

[14] Much of the attention on political activities on the single firm level is focused on political action committees (PACs) and their donations to political candidates. See Kaufman, Karson & Sohl (1987) and Eismeir & Pollock III (1987).

[15] This is a classification proposal by Keim & Zeithaml (1986).

[16] Among the notable exceptions are, for instance, Yoffie (1987) who classifies corporate political activity according to the dimension of collective action decisions which firms make to achieve competitive advantage (The author's typology distinguishes between the five strategies of free rider, follower, leader, private goods, and entrepreneur), and Mahon (1993) who distinguishes between corporate political activities that are issue, arena, and stakeholder based.

[17] For outstanding examples of such research see Jacobs, Useem & Zald (1991) and Mizruchi (1992). The former provides a differentiated view on specific characteristics of companies, industries, and the relations among these actors as determinants of level (or intensity) and direction (or thrust) of business political involvement. The latter draws on the techniques and ideas of network analysis and investigates the way in which inter-firm relations shape the political activity of corporate actors.

in the number of civil protest actors demanding such regulation; second, increased levels of government influence on critical uncertainties in business environments, such as interest rates, inflation, and energy costs; and, third, the globalization of the economy making business view government as a potential ally against foreign competition (see e.g. Yoffie 1987: 45)[18]. Usually this contextualization of business political activity is not elaborated further. To my knowledge, there is no study which systematically contextualizes business political activity in business' wider societal environments or in specific situational contexts such as issue-based societal conflicts.

To conclude these expositions on the approach to business political activity in the research field of Business and Politics: Corresponding with the analytical focus of the broader field of study business political activity is approached by describing and analyzing the variety of business activities and strategies employed to bias public policy according to business interests with a special focus on business activities and strategies undertaken in the arena of institutionalized politics, and the specific relationship between business and government. (Business political activity in this field of study is frequently simply associated with business-government relations)[19]. Corresponding with the research field's dominant understanding of political action, business political activity is described in its instrumental dimension in terms of strategy and power with a specific emphasis placed on material resources as business-specific political resources. Explanatory efforts are largely restricted to resource-theoretical and meso-structural considerations on the level of the economic system. Efforts to systematically explain the logics of business political activity by historical, general societal, or societal conflict-specific contextualization - that means, contextualization that exceeds the immediate opportunities and constraints of the formal political system - are practically non-existent.

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[18] A more extensive account of changes in governmental involvement in the economy, the reasons of these changes, and their impact on business political activity is provided by the »classic« of corporate political activity, Epstein's *The Corporation in American Politics* (1969). However, this book appeared at a time when a new era of social regulation and protest was just beginning. In short, the macro-structural business context still was significantly different from that of today.

[19] One notable exception to this state-centered approach to business political activity is Mahon's article on *Corporate Political Sculpting* (1993) the basic premise of which is that business engages in political activities in multiple arenas of which the formal, generally recognized, institutional framework of politics represents only one forum.

An extended contextual perspective on business political activity is introduced with the incorporation of the research topic into the research field of Business and Society. This research field's specific view on business political activity as society-related behavior relativizes the importance of the formal political system as arena and addressee of business political activity and, moreover, provides fruitful insight into the communicative and expressive dimension of business political activity.

2. Business and Society

Business and Society was established as an interdisciplinary field of study in its own right in the 1970s. Its research object is the interface between business and society. It is oriented towards understanding how, why, to what ends and with which effects business organizations interact with the societies of which they are a part. Sociologists and management scientists contribute most to this kind of research[20]. Contributions to the debate on and analysis of political activity of economic organizations in this society-related perspective, however, so far exclusively come from the management sciences. According to my knowledge, there is no sociological study in the Business and Society field of research which explicitly and systematically deals with the topic[21]. Sociologists so far have not taken a particular interest in the action-strategic aspect of society-related business political power[22].

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[20] For an overview on the debates and agendas of Business and Society as a sociological field of study see Berg & Zald (1978). For collections of essays on issues in Business and Society as a management field of study see especially Sethy & Falbe (1987) and Steiner & Steiner (1977²).

[21] Sociological research in the field of Business and Society traditionally has dealt with, firstly, effects of corporate policies and practices upon community life, work groups, their supervisors and local unions. This line of research was mainly inspired by *labor-management conflicts* in the 1920s and 1930s and focused on human relations in the workplace. Secondly, in a more macroscopic perspective, traditional research has been concerned with the wider powers of business to affect the structure and functioning of industrial societies taken as whole systems. This line of research has its intellectual roots in studies of the genesis of and socialist challenges to *capitalism*. More recent research mainly consists of studies of the effects of business on the *public interest* in society generally and studies on "*managerialism*" and its effects on the structure of labor markets, industry structure, and economic and political developments generally and the bases on which the legitimacy of business can rest (Berg & Zald 1978).

[22] The 1978 article by Berg & Zald tackles this aspect but does so not very extensively. However, in dealing with business political behavior it identifies a tendency that until today has continually grown stronger and relates to the key topic of studies on society-related business political activity in the management sciences. This is the tendency of a growing importance of shaping and mobilizing public opinion as a business political strategy and

There are only a few studies in the management literature on business-society relationships (which are investigated basically in the terms of business social responsibility and business social responsiveness[23]) which specifically deal with business political involvement in terms of a society-related activity. However, these studies which emerged in the late 1980s deserve special attention as they introduced a different, sociologically very interesting perspective on research on business political activity. This perspective provides fruitful insights, first, into the normative and communicative-expressive dimension of business political activity, second, by pointing to citizen activism as a major political challenge to business organizations into the importance of business relations to non-governmental, non-profit oriented groups and organizations, and third, into the wider societal context as an influencing factor of business political involvement mainly in terms of such citizen activism, prevailing societal norms, values and expectations constituting the public interest, and the

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an associated and increasingly visible character of business political involvement.

[23] In the management sciences, the research field of Business and Society, in the light of an increasingly hostile business societal environment, originally started out as an attempt to ask business organizations to do more to ameliorate the second-order effects of their activities and to bring business behavior up to a level where it would be in congruence with currently prevailing societal norms, values and performance expectations. These endeavors initiated a whole debate on the question of the role of business in society, on how economic institutions should act in society, on what constitutes legitimate business behavior, on what is business ethics and how it should or can be employed by organizations, on the economic and noneconomic arguments for corporations to behave in a socially responsible manner, etc.. Studies participating in and contributing to this debate were grouped under the rubric of *Business Social Responsibility*. They, in turn, brought in their wake a series of studies that set the abstract-philosophical, normative reflections on business relations with society against an action and/or strategic orientation. This more recent type of research seeks either to point out the structurally determined need of business to respond to its wider societal environments or to expound strategies to *manage* changing societal conditions in the sense of optimally warding off new societal pressures on business. While, in the first case, the research perspective is that of business as a social institution, one that depends on society's acceptance of its role and activities, in the second case it is that of an external constraining environment the adverse impacts of which must be limited so that the organization can obtain necessary resources, pursue its own goals, and manage its affairs relatively free from outside intervention. Management activities which are discussed as general processes of responding to society's needs and demands or as general strategies of managing the wider societal environment are environmental assessment, issues communication, and stakeholder relation-building. This literature was grouped under the rubric of *Business Social Responsiveness*. The work on *Business Political Activity* combines facets of both of these lines of research. It identifies business social legitimacy as constitutive of business existence, survival, and growth and - in an evidently normative orientation - demands on these grounds business societal responsiveness in terms of political involvement that is based on and contributes to the public interest. That is, business social responsibility is defined, in the first place, as a structurally determined necessity for business, and then secondarily as a desirable business characteristic. Generally, I shall note, the management aspect of business societal relations in the research field of Business and Society has increased in the last fifteen years. (For a review and critical discussion of these debates and an integrative perspective on them see Wood 1991a, 1991b.)

public at large acting together through citizen groups as »guardians« of that public interest[24].

The basic assumption underlying this innovative view of business political activity holds that economic organizations for their existence, continuity and growth depend on both economic efficiency *and* social legitimacy in terms of society's acceptance of their roles and activities. It further holds that the ethics of the marketplace and the legality of an act provide only two kinds of social legitimacy which are necessary but not sufficient conditions of business social legitimacy; business social legitimacy in terms of a prerequisite for business well-being is understood as being composed of these two types of social legitimacy *and* a third type defined as the adaptation to prevailing societal norms, values, performance expectations that are not (yet) legally codified. According to this supposition, widely advanced in management studies on Business and Society, business has to do *well*, that means, efficiently transform goods into products and services, and do *good*, that means, maintain or (re)produce its social legitimacy (Marcus, Kaufman & Beam 1987b: 8). Business' *quest for social legitimacy* and doubts by its critics about the legitimacy of some of its policies and actions are at the core of the entire debate pertaining to management research on Business and Society.

Proceeding on this assumption, studies on business political activity declare *legitimacy or societal acceptance of business political actions and its underlying motives* as the paramount issue of business political involvement (Sethi 1987: 529). Effective political participation of business in the societal political process, the argumentation goes, presupposes this social legitimacy which in turn is determined by political positions and strategies that embody a positive notion of the *public interest*. The development of a clear and cogent view of the public interest and, then, the political positions and strategies that embody this view is considered by this approach to business political activity as being the essence of business political activity (Sethi 1987: 531). It contends that what business often lacks and, therefore, causes ineffective political action is not only a political position but the habits of thinking and talking about the ways in which corporations and their products and services contribute to society's well-being and help citizens realize their personal objectives.

[24] The most notable contributions to the analysis of business political activity in a societal perspective are probably provided by the 1987 reader compiled by Sethi & Falbe in the form of essays by Sethi, Holcomb, and Markowitz.

> Business people cannot participate effectively in the political process until they can articulate who and what they are socially, what role their products and services play culturally, and what difference it really all makes. This demands positive political strategies, not ad hoc responses to immediate crises. (Sethi 1987: 531)

This more recent approach to business political activity sheds light on the normative and communicative-expressive dimension of business political activity. The *normative dimension* of business political activity (with which I shall refer to the influence of societal norms on instigation, design, and structure of business political activity) is pointed to by arguing that successful business political action presupposes a positive relation to, that is, respect for, and ideally, genuine pursuit of the public interest constituted by prevailing societal norms, values, and societal expectations. Neglect or non-consideration of the public interest is considered as leading in the long-term to a loss of public credibility and support and, finally, to a loss of options to exert influence on the social order. As the public interest is not a stable structural element, it is further argued, consideration of and adaptation to the public interest presupposes an environmental scanning process designed to detect what *is* in the public interest or in which way this public interest might be in a process of change.

The *communicative-expressive dimension* of business political activity is referred to by contending that this positive relation to the public interest to prove politically effective has to be transformed into a political identity, ideology, and positions that can be demonstrated and credibly communicated to different business publics and the public at large. A successful political action program is understood as requiring, so to speak, the *staging* of business positions in terms of the public interest and as a bona fide to address public needs. This staging is viewed to lead to a public awareness and understanding of a corporation's position and rationale on political issues which in turn would result in business public credibility and support as major preconditions for effective political participation.

In a primarily practice- and/or normative orientation, the development and communication of a political identity, ideology, and activity positively related to the public interest, first and foremost, is formulated as advice to or call on business actors. Studies taking this society-related approach to business political activity cite a need for such cognitive, communicative, and action-related efforts. However, some of them also engage in explanatory efforts and

point to contextual - external and internal - business conditions which are identified as conducive to the development and use of such efforts. Among these the following two seem to be the most relevant. First, scholars identify a high degree of public exposure[25] of business organizations in terms of a high degree of mass media attention and a large number of business-critical public-interest and citizen groups mobilizing public opinion to further their political goals as constituting a major stimulating influence of public interest-based business political activity and communication. As a second basic conducive condition they point to management which is highly sensitive to social issues and civil protest groups as it has been the target of such groups or of public concern about the gap between corporate and public interests (and then found that adversarial confrontation is not necessarily the most effective and successful way of responding to social needs and political challenges) (Sethi 1987: 534-537).

The growing political challenge to business constituted by citizen groups at the national, state, and local levels promoting collective benefits for society in general and viewing themselves as adversaries of the corporate world has received special attention as a contextual condition in the society-related perspective on business political activity. The political challenge these groups pose to corporations may be seen in their direct effects on corporations - in the sense of initiating lawsuits against companies, organizing boycotts, and sponsoring shareholder resolutions on specific issues etc. - and especially in their indirect effects on corporations through their influence on public policy-making; citizen groups are held largely responsible for numerous social regulations affecting industry (e.g., on equal employment, employee health, product safety, and environmental protection). Research focusing on business-citizen group relations typically distinguishes between different modes of business responses to citizen activism and, in terms of social legitimacy, advises or calls upon a more co-operative response to these political challengers. A departure from the hardline, confrontationist approach, however, is not merely presented as a normative request or an action advice on the grounds of strategic and structural considerations, but as well as an empirical tendency.

Holcomb, in this sense, points to a change in business response to citizen activism over time the main feature of which was a decline in importance of confrontationist strategies

[25] The concept of *public exposure* ("öffentliche Exponiertheit") is borrowed from Dyllick (1989: esp. 6-7 and 15ff.). It will be developed under point IV.1.2.

along with an upgrading of co-operative, participative, and negotiatory strategies (Holcomb 1987: 369-371).

The society-related approach to business political activity departs from the dominant approach to business political activity in the literature on Business and Politics in the following respects: The prime object of analysis is not business' relations with the formal political system but instead its relations with the public at large, on the one hand, and business-critical civil protest actors, on the other. The analytical framework in which business political activity is investigated is based on a broader understanding of the terms political and political action. *Political* in this definition, on the one hand, refers to structures of and actions in the formal political system and structures and actions directed at the formal political system. The society-related approach focuses on the latter; it understands the relations and communications of business as a political actor to the public at large as a key determinant of business' influence on the public policy process. On the other hand, *political* refers to structures and actions that are part of the overall societal political process but may be not directed at the formal political system. In this broad understanding political includes, for instance, business interactions with citizen groups in the form of inter-organizational negotiation.

The decoupling of the concept of *political* from the formal political system together with the emphasis placed on business-public relations in the process of influencing public policy according to business' interests causes the importance of the formal political system as an arena of business political action to be relativized. Besides this arena, the public arena referred to as a forum in which business may *stage* itself as a socially responsible participant in the political process and the half public/half private arena referred to as a sphere in which business might attempt to come to terms with its organized critics are presented as alternative arenas of business political activity. A second effect is the relativization of the importance of the formal political institutions as addressees of business political activity. The public at large and business-critical civil protest actors are highlighted as important addressees and potential or actual political challengers of business political action.

More specifically, with the importance ascribed to general societal acceptance and public staging of business political activity, the instrumental dimension of business political activity, to which the bulk of the literature on Business and Politics reduces this type of business behavior, is complemented by an *expressive-communicative dimension. Political*

action in this view is understood and examined as *approval- and audience-oriented* behavior relying, above all, on *ideative and symbolic resources* rather than as power behavior relying, first and foremost, on material resources. This view on business political activity sheds light on the *dramaturgic* aspect of business political action.

Furthermore, with the importance ascribed to public exposure, credibility, and support, and the institutional and cultural framework as determinants of design and success of business political participation, business political activity is contextualized in a way that exceeds its embeddedness into the political and economic system: At the macrostructural level the society-related approach to business political activity points to prevailing societal norms, values, and performance expectations, at the mesostructural level it points to the public exposure of business in terms of the extent of public criticism, mass media attention, and protest challenge as critical contextual factors of business political activity.

> The days when the public welcomed industrial and other economic activities simply because they created jobs or provided products or services are gone, once and for all. People have become more critical of technological progress and more aware as regards consumption and consumerism. (Leuenberger 1995: 98)[26]

> While the same general set of forces [legal and social pressures] is impending on all institutions, the impact in the world of business is especially dramatic because the historic criteria for evaluating the performance of business have seemed so relatively simple and clear cut. (Ackerman & Bauer 1976: 3)

3. Business Political Activity in the »Embeddedness-Perspective«

Why and how are courses of business political activity constructed, according to which external influences and internal logics? It is difficult to give an answer to this question which grasps »external« and »internal« influences in all of their complexity. As has been argued in the preceding sections, the bulk of the relevant literature has concentrated on instrumental rationality in terms of resource-strategic thinking as the central logic underlying business

[26] Andreas F. Leuenberger is Vice-Chairman of the Board of Directors of F. Hoffmann-La Roche & Co. Ltd, Basel and President of the Board of the Swiss Federation of Commerce and Industry.

political activity and on the formal political system as the main political environment of business organizations. The present study goes on from the more recently developed research perspective of the Business and Society literature and investigates business political activity as a multidimensional activity - including a dimension of power, strategy and dramaturgy - related to and influenced by society as a whole system. Its principal interest is to highlight the role that »cultural reason« in terms of integration-conscious thinking (which, actually, is translated into an instrumental rationality - a culturally based/shaped instrumental rationality, however) and the cultural-institutional environment play in business political involvement. It does so by discussing business political activity in technical controversy as a response to a process of cultural change initiated and promoted by the new social movements and interpreting this response as a kind of »cultural politics«, a politics aimed at conciliating »business culture« with »societal culture«.

What is referred to as a process of cultural change and a major political challenge to business is the *societal diffusion and stabilization of the idea of a socially and environmentally compatible steering of technical change.* This process, I shall argue, means for the economic organization to be confronted with *new societal expectations* as regards its role as a technology utilizer. These expectations go well beyond the classic task of the provision of goods and services. They include the fact that companies take into account the social, ecological, and moral implications of their technological activities and by that acknowledge newly developed sense structures and value patterns. My argument is that these new expectations and their detrimental effects on business - losses in credibility and trustworthiness, production delays due to citizen and new social movement protest, demotivation of employees - have forced economic organizations to engage in a new form of business political activity aimed at (re)producing societal consent as a basis of legitimization for business technology policy: Activities of public commitment to the new social movement generated and promoted ideas on how to deal with modern technology. To put it in more general terms, these detrimental effects have forced economic organizations to pursue a policy opposite to the policy of »silence is golden« as was characteristic of the first two decades of the postwar period. The new policy, which for the sake of metaphorical analogy shall be referred to as the politics of »communication is golden«, consists of engaging in *public responsibility discourse.* The new policy has not replaced the traditional policy of insulation against the public in business at large but has complemented it. It is pursued by

business organizations that have a special feature or that represent business organizations with this special feature: This special feature is an especially high degree of *public exposure*.

The basic assumption underlying this culture-oriented approach to business political activity is the same that underlies the general perspective of the Business and Society management literature. This is the assumption that business survival and growth presuppose both economic efficiency *and* social legitimacy and that economic organizations operate in a larger societal context in which support for business operations and institutions cannot be taken for granted. However, as distinguished from the management sciences, social legitimacy in analyzing business political activity in the present study is not conceptualized as societal approval of business political activity itself and a necessary precondition for successful political participation. Instead, it is understood as societal approval of general business policy and business power and, as such, conceptualized as both an inherent objective and a major influencing factor of business political involvement.

The theoretical-analytical perspective from which this view of the connection between business political activity and business social legitimacy is derived is the *»embeddedness-perspective« of institutionalist organizational sociology*. It is the basic theoretical suppositions of this perspective (similar to those of the Business and Society management literature) that the present study draws on in discussing business political activity in technical controversy as behavior that is reflective of and responsive to a political environment in which cultural-institutional elements play a central role.

It seems fair to state that, at this point in time, institutional theory in organizational sociology represents a theoretical orientation - that is to say, a family of concepts and arguments - rather than a tightly integrated, elaborate theory. Constitutive of this theoretical orientation and common to the various conceptual frameworks and arguments employed is the attention to *context*, that is, to the relation between organizations and their environments, the concern with the role of *culture* in shaping organizational reality, and the characterization of *institutionalization* as a process which by restricting the options among which organizations can choose also restricts organizational instrumental rationality. While this study's analysis operates on the basic assumptions underlying the general analytical perspective of the institutionalist school, it specifically builds on that supposition which is central to the most

contemporary line of institutional research on organizations in sociology, the so-called *»neo-institutionalist« approach.* This supposition holds, first, that the *wider societal environment* - culture, social norms, conventions, society, the political system, organizational fields - strongly influences the definition of interest and the structures and courses of action an organization might develop. This influence provides the organization with *social legitimacy.* The supposition holds further that social legitimacy of organizational structures and behavior constitutes a major determinant of the continued and successful existence of organizations, alongside efficient coordination and control of productive activities.

Organizational legitimacy has been a core concept of the neo-institutionalist debate since the mid 1980s in (american) sociology and political science. This concept operates on the assumption that socially legitimate organizational structures and actions do not merely constitute a means for the achievement of specific organizational goals but above all things the attempt to demonstrate the *appropriateness* of a goal or the appropriateness of a way to reach goals. A major means of demonstrating the appropriateness of goals and purposive action, according to the neo-institutionalist approach, is institutional behavior. That means, as distinguished from the neo-institutionalist approaches as they have developed in economics and economically oriented political sciences (and distinguished from the traditional theories of symbolic politics) that institutions are not merely viewed as mechanisms in the enlargement of options for rational action, but also as instances that decide on the appropriateness and social legitimacy of organizational reality. Much institutional behavior, according to this view, is behavior that is - consciously or unconsciously - aimed at the creation or confirmation of an implicit societal agreement. This means, this institutionalist view is not only concerned with »rules« (routines, organizational forms, technologies) that make possible purposeful and decisive organizational action, but also with meanings and beliefs that determine the appropriateness of that action. The perspectives in which institutional behavior is investigated are cultural and cognitive. They are cultural since they view institutional behavior as based on cultural reason; they are cognitive since they, first, refer to that which social actors designate as reasons for their action, that is, argumentation and justification, and, second, to the preconscious reasons for this reasoning, that is, classifications, representations, scripts, and schemata (Eder 1995c: 4).

The influence of the wider societal environment on organizational life is of major interest to

the present study. In this respect it corresponds with the neo-institutionalist approach in organizational sociology. It departs from the mainstream of the work approaching organizations in this perspective in that it positions the organizations under inquiry in a wider societal context than the »narrow« institutional environment. This wider societal context, conceptualized as the business political environment of technical controversy, comprises institutional-cultural as well as sociopolitical and public policy elements. Then, in analyzing the organizational response to the institutional elements of this broader societal environment, to be more precise, to those cultural elements of this broader societal environment that are in the process of institutionalization, it places more emphasis on the political-strategic element of this response. The political-strategic element is conceptualized as the conscious, purposeful use of institutional-cultural logics for the goal of (re)producing social legitimacy. With the importance ascribed to intentional behavior in institutional environments - behavior however that is institutionally induced - the study forms part of the general »turn« of the neo-institutionalist sociological literature towards integrating strategic and political elements into the analysis. This turn has been introduced by statements such as the following by one of the most prominent advocates of the neo-institutionalist approach to the study of organizations:

> And if organizations are rewarded for compliance with external demands, how can we argue that conformity is not based on the calculating behavior of those who are seeking legitimacy? (Powell 1991: 190)

Business Organizations as »Open« Systems

The most basic assumption that this study's approach to business political activity shares with the neo-institutionalist approach is that organizations are *open systems* affected by the environments in which they exist (see Scott 1992 in Scott & Christensen 1995). On the basis of this assumption, the validity of the conceptualization of business organizations as self-directed, self-sufficient actors pursuing their own ends is denied. This conceptualization is countered with the notion of business organizations as other-directed, depending for survival on the types of relations they establish with the larger systems of which they are a part.

The supposition of the centrality of environmental forces in shaping the structures and behavior of organizations is not specific to institutionalist organizational sociology but is shared by the majority of theoretical perspectives of this branch of sociology, including

contingency theory, resource dependency, and population ecology. The notion by which the importance of the environment as the ground in which organizations are rooted is expressed is *organizational embeddedness*. While the embeddedness argument generally points to the importance of context, its exposition varies according to the definition of the boundaries of this context. Sociologists have investigated organizations as embedded in technical, institutional, cultural and social environments and in environments of interorganizational relations defined varyingly as industries, organizational fields and societal sectors[27].

Up to the 1980s, the environment of for-profit organizations was viewed primarily in *technical terms*. From this perspective, business organizations are seen as embedded in environments within which a product or service is exchanged in a market such that organizations are rewarded for effective and efficient control of the work process. In other words, business organizations are viewed as organizations that can be expected to survive and flourish when their structures and actions best match the requirements of the *market* of which they form part. In the »technical« perspective, the emphasis is on *materialist forces* - technology, resources, production systems - as determinants of the organization-environment relationship.

This narrow perspective on the embeddedness of for-profit organizations slowly but continually has been broadened in the course of the »revival« of institutionalist organizational sociology in the 1980s inaugurated by the article of Meyer & Rowan (1977) entitled *Institutionalized Organizations: Formal Structure as Myth and Ceremony*. This article initiated a series of studies that directed attention away from narrow concerns with the location of resources or the number of competitors and called attention to the way in which organizations participate in wider arenas of relations and forces. This line of research that has been called »neo-institutionalism«[28] highlights the broader role played by the state, the legal system, public interest groups, and the public in shaping organizational structure and action and by doing so demonstrates that organizations are more than just products of their immediate local

[27] For arguments based upon the notion of embeddedness see especially the contributions of Granovetter (1985), Fligstein (1990), Galaskiewicz (1991), and the collection of essays edited by Powell & DiMaggio (1991). The latter also provides a sophisticated presentation and discussion of the neo-institutionalist approach in organizational analysis.

[28] It differs from the earlier approaches in being more »structural«, that is, in paying greater attention to the way action is situated within larger structures of social relations and social meanings (Strang 1994: 15).

environments, whether defined as organization »sets«, supplying critical resources or direct competition; as organization populations, made up of similarly constituted organizations competing for the same resources; or as organizational communities, composed of interdependent systems of co-operating and competing units sharing the same locale[29].

The increased attention to form and function of institutions has both contributed to and borrowed from the renewed interest in the sociology of culture. Placing particular emphasis on normative and cognitive systems, institutional analysis provides a more cultural account of the wider societal context than is found in other analyses of the modern organization (or in most other versions of structural sociology). In contrast to the studies embedding organizations in technical environments, highlighting the importance of materialist forces, the neo-institutionalist approach stresses the role of *ideational forces* and *cognitive processes*. Cognitive processes are understood as the basis on which organizational actors respond to ideational forces by taking action. They concern - conscious or unconscious - assumptions and decisions regarding the *appropriateness* of organizational structure and action. Ideational forces and cognitive processes are defined as major determinants of *organizational legitimacy* which in turn is identified as a necessary prerequisite for organizational success and survival. In short, the cultural and cognitive approach to the analysis of organizations as it has developed in the course of the 1980s has shifted attention from the efficiency of organizational structure and action to the legitimacy of organizational structure and action and to the ideational forces and cognitive processes that determine it.

The array of environmental influences to which the organization must conform in order to receive legitimacy and support usually is subsumed under the notion of *institutional environment*[30]. Dependent on how narrowly or broadly defined, this environment is characterized by the elaboration of routine/reproduced programs or rule systems (Jepperson 1991) and/or the elaboration of weaker forms of reproduction such as conventions, rituals, ideology, accounts, or myths - social control structures that can be more or less

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[29] For a collection of essays based upon the notion of institutional embeddedness which underlines the important role of culture, society, organizational identity, and industrial sectors in the definition of interest and courses of action that organizations might develop, see Powell & DiMaggio (1991).

[30] For an elaborated definition of institutional and technical environments see Meyer & Rowan (1977) and Meyer, Scott & Deal (1983).

institutionalized[31].

Even though the economic system is deeply embedded in a system of laws and regulations implemented by the politico-administrative system and parts of it in a sphere of intense public scrutiny and pressure exerted by social movement actors and the mass media, empirical neo-institutionalist research for a long time focussed on nonprofit, nonmarket organizational forms, in particular public agencies such as schools, organizations of the mental health and health care sector, cultural institutions, etc. (Meyer & Scott 1983, Zucker 1988). Public agencies were considered the most interesting subject of research as institutional environments were conceived of as the determining context of this organizational form before any other. It always, more or less, was recognized that both of the most important organizational environments identified - institutional and technical - to a certain but differing extent place pressures on organizations to which these must respond in order to survive. However, it took some time until forprofit organizations were considered an appropriate and relevant subject of research in institutional analysis. It is only since very recently that scholars have developed a growing interest and increased activity in investigating social and cultural linkages between business organizations and business environments[32].

Like these scholars, the author of this study aims at highlighting that business is not a separate sphere of society that has become disconnected from its socio-cultural environment. Modern business is characterized by the existence of a recognizable and distinct type of behavior (market behavior) and a specific dominant type of rationality underlying this behavior (economic rationality). However, it does not exist detached from its sustaining institutional and normative nexus. The free market system - which is based on the intention to maximize the affluence of all by providing each individual with the full scope for freely developing his endeavors directed at material success - is embedded in the moral, cultural,

[31] Jepperson (1991) makes the point that the identification of »institution« with »culture« confuses the discussion and development of institutional arguments - a confusion that would be caused by many »institutional« analysts - as cultural elements might be more or less institutionalized.

[32] For contemporary research that seeks to broaden the empirical scope of institutional analysis to embrace the private sector see Galaskiewicz (1991), Fligstein (1990), Dobbin et al. (1993), and Strang & Bradburn (1993). These studies emphasize that companies and markets are also social institutions. While Galaskiewicz's study examines patterns of corporate philanthropy, the other studies investigate how markets are constructed through interaction between private organizations and the state.

and legal constitution of the society of which it forms part and is itself a major institution within this society. While in times of cultural and institutional stability this socio-cultural embeddedness largely remains latent, it becomes manifest in times of *cultural and institutional change* that calls into question the institutional logic upon which the free market system is based (accumulation and commodification of human activity). In these times - e.g. in times of newly emerging institutional ideologies basically or at times contradicting the logic of the market - there is a heightened need for economic organizations to explain and legitimize themselves, to defend the basic institutional logic they are founded upon and to take a look at the newly evolving socio-cultural patterns. Cultural and institutional change affecting the institutional logic of the modern economy demonstrates that economic organizations operate in a larger societal context in which support for economic operations and institutions cannot be taken for granted but depends on the *responsiveness* of the economic sector to this larger context.

Technical controversy, I shall argue, is an expression of cultural change which affects business by confronting it with new societal expectations. It becomes manifest in organized technology protest, an alerted, technology-critical mass media and public at large, and more restrictive technology-related state regulation which is responded to by a range of business organizations with increased and diversified political activity. This study conceives of technical controversy as a societal situation that unveils the influence of the wider societal context on the behavior of for-profit organizations. Unlike the bulk of the neo-institutionalist literature, it analyzes organizational *action* - political action - not structure as an expression of the organization-environment-linkage. The context in which the organizations at issue are investigated is not defined as a specific societal or interorganizational structure but as a collection of factors - social structures and actions - characterizing a *specific situation of societal conflict*. These factors are assumed to have a significant impact on business political activity. They are referred to as the *business political environment of technical controversy*.

Before I engage, after this exposition of the study's specific approach to the topic of business political activity, in a further clarification of terminology and concepts - beginning with the concept of *political action* - I shall briefly reflect on the striking U.S. dominance in research on the topic.

4. The Research Lag of Western European Social Sciences

Today, business political activity as a specific line of research is clearly dominated by U.S. social scientists. This is a fact that shall not remain untackled in the context of literature stock-taking. How is it, that Western European social sciences do not take a particular interest in economic organizations as political actors? Neither in the political sciences and political sociology nor in the management sciences can one find something like a European »research tradition« regarding business political activity. Research contributions laboriously have to be extracted from the (burgeoning) literature on issues management, risk communication, and business ethics in which the topic is only implicitly dealt with.

There seem to be at least two ways of accounting for this difference in the extent of scholarly attention to the topic at issue. The first concerns the juncture of significant changes in business political activity. In the United States, the critical phase of an increase in and diversification of business political activity was reached in the 1970s, in Western Europe - or, to be more precise, in some of the Western European countries - this critical phase seems to have been reached at the end of the 1980s. Vogel has pointed out in his discussion on the first big wave of social regulation in the period of the late 1960s to the end of the 1970s that increase in business political activity in this time has been much more profound in the United States than in comparable capitalist democracies such as Western Europe and Japan (Vogel 1981: 180-185). In Western Europe it is only since the late 1980s that there can be observed a growing and multifarious political involvement of large parts of business. Scientific research, as we all know, often lags substantially behind the factual developments - tendencies need some time to be recognized as such. Against this background, it seems reasonable to assume, that research on business as a political actor in Western Europe is still in a developmental stage.

The second explanatory proposal regards the prevailing understanding of the social sciences of what is *political*. As the literature review has shown, the bulk of the literature on business political activity understands this type of business behavior as actions directly addressing formal political institutions. The concept of *political* underlying this understanding restricts the realm of political behavior to behaviors undertaken by individuals and groups in the

formal, generally recognized institutional framework of politics. *Political* is understood, as Mahon puts it, in its "structurally oriented meaning" (Mahon 1993: 195[33]). The increase in and diversification of business political activity in some of the Western European countries, however, first and foremost, concerns business political activity in the noninstitutional arena of politics. In the United States, in contrast, due to a different historical business-government relationship, it concerns this »de-centralization« of business political activity[34] *and* a significant increase of business political activity in governmental arenas[35]. It is quite possible that the dominance of the structurally oriented concept of *political* obstructs Western European scientists the view on changes in business political activity which, above all, take the form of newly emerging business activities that are political in nature but occur outside the specific realm of the traditional political institutions, and by doing so prevents empirical developments from framing business political activity as a new social scientific issue. This alternative explanatory attempt identifies the research lag of Western European social sciences as a, so to speak, conceptually determined construct.

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[33] Mahon distinguishes the structurally oriented meaning of political from a functionally oriented meaning of political (Mahon 1993: 193-196). While in the former *political* refers to government and legal systems and the organizations that comprise those systems, in the latter *political* is understood as a process in which outcomes may be explained by the exercise of power. Mahon advancing the latter process-oriented concept contends that the exercise of business political strategy and behavior can occur in a variety of circumstances and situations. While this study supports this decentralized view of business political activity, it departs from Mahon's conceptualization of political in that it rejects the reduction of business political activity to mere power behavior; it understands business political activity equally as dramaturgic behavior. For this argumentation see the points II. 2, 3.

[34] Still, this decentralization process in the United States is less pronounced than, for instance, in Germany. This is due to the fact that German business responds to the pressure of civil protest actors primarily via the shaping of public opinion and negotiation outside the traditional political institutions, while in the United States, business largely settles political conflict with these groups in administrative and judicial arenas.

[35] According to Vogel, the overall volume and severity of environmental, consumer and occupational health and safety standards cannot account for the »uniqueness« of the (government-related) political response of American business as it was not sufficiently different from that of Western Europe and Japan. Among the arguments which Vogel puts forward to explain the varying response to the new regulatory arrangements, the following seems the most important to me: The closer ties that have historically existed between business and government in Western Europe and Japan - the historically relatively high regulation of business and the co-operative working relationship between business and government - would have prevented a more radical response to expanding social regulation. In Western Europe and Japan, as Vogel puts it, the new regulations "took their place beside an already extensive list of constraints over management decisions" (1989: 183) and, thus, "represented only a marginal reduction in autonomy for executives" (Ibid.). In contrast, in the United States the new regulations meant a far greater proportional increase in the degree of public controls over business and, hence, it tended to meet with proportionally greater resistance.

It seems reasonable to assume that U.S. dominance in the research field in some way is related to both givens to which I have pointed. This study, in any case, seeks to contribute to reducing this dominance. A first step in this direction shall be the development of a concept of political action that is broad enough to encompass the hypothesized variety of business political activity.

Wer "die richtigen Worte" findet, wer weiß, wann er Kompromisse suchen muß und wie er sie finden kann, wem es gelingt, vom Besonderen auf das Allgemeine zu verweisen und das Allgemeine im Besonderen aufzuzeigen ..., der hat - in welchem sozialen Kontext auch immer - zumindest *gute Chancen*, politisch erfolgreich zu handeln. (Hitzler 1995: 293; emphasis in original)

II. CONCEPTUALIZING BUSINESS POLITICAL ACTIVITY

It is clear that, before substantial progress can be made toward a theory of business political activity in technical controversy, there must be a clarification of terminology and concepts. As mentioned earlier, I do not know of any study analyzing business political activity in this specific or a similar societal conflict situation. This study needs to be innovative in building its overall analytical framework. The same applies to the conceptualization and classification of business political activity in general. The available literature does not offer a generally accepted framework of business political activity in which I could place my research. What it does provide is a range of different conceptual definitions and classifications due to differing definitions of political action and varying categorizations of activity or strategy types. Frequently the specific understanding of political action is more implicit than explicit and as a result there is no identifiable dimension according to which categorizations are organized. Faced with this variety and the general conceptual vagueness of analytical tools, every new study begins with an individual definition and classification of business political activity adjusted to the specific scope of analysis - and I am no exception here.

To begin with, I shall provide a definition of *political action* which then will serve as the conceptual basis of the definition of business political activity. The definition of political action is adopted from Hitzler (1995, 1994, 1991) and formulated in an action-typological perspective. According to this definition political action is a special form of social action that is designed to achieve the approval of third parties of having one's will against the resistance of second actors.

1. Structurally and Functionally Oriented Concepts of Political Action

As pointed out in the literature review, the concept of political action (mostly implicitly) underlying the bulk of American literature on business political activity restricts the realm of political behavior, and therefore political strategies, to behaviors undertaken in the formal, generally recognized institutional framework of politics. The minority of studies that sets against this »structural« understanding a »functional« understanding of political action typically reduces the function of political action to the exercise of power[1]. The few management studies in the field of Business and Society, by defining societal acceptance of business political activity and underlying motives as a major condition of successful political performance, point to the production of social legitimacy as another function of business political activity. However, these studies do not determine the production of social legitimacy as a *genuine function* of this specific type of business action; it is defined, instead, as a potential (and desirable) function.

This study, in contrast to the majority of studies on business political activity, defines political action broadly as a functionally oriented behavior, which means being uncoupled from (but *not* unrelated to) the political system as a specific societal subsystem. Political action is conceived of as a general social phenomenon that takes place on all levels and in all constellations of the social order. As a result, business political activity is not restricted to the behaviors undertaken within the formal political arena but incorporates interactions between business and society, civil protest actors, and other groups and organizations that are identified as political in nature but occur outside the specific realm of political institutions. This implies that action that is not directed at the political system as a specific societal subsystem can be construed as *political action.* This broad understanding of political action is bound to the fundamental premise of this study that business engages in political action in both institutional and noninstitutional political arenas.

Thus, the concept of political action as it is advanced in this study differs from that of the existing studies that understand business political activity in its functional sense in so

[1] Mahon, for instance, defines corporate political strategy as "*those activities taken by organizations to acquire, develop, and use power to obtain an advantage (a particular allocation of resources) in a situation of conflict*" (Mahon 1993: 196, emphasis in original).

far as it conceives of this type of action as having two functions instead of one: The first (well-studied) function is the *exercise of power*, the second is the *transformation of this power into a legitimized social order*. Translated into action goals, this means that political action aims, first, at protecting one's interests against the resistance of second actors and, second, at gaining the approval of third actors of doing so. On the basis of this bi-functional understanding of political action, it will be possible to support and illustrate the study's basic assumption that business organizations are not merely settings of instrumental activity but are action contexts also for expressive behavior.

This definition of political action is adopted from Hitzler[2]. In what follows, I shall expound the conceptual and action-typological considerations upon which the definition is based.

2. Political Action as Instrumental and Expressive Behavior

The concept of political action that forms the conceptual basis of this study's definition of business political activity has been developed by Hitzler in the context of reflections on the development of a systematic *sociology of political action* (Hitzler 1991)[3]. An important step towards such a systematization of sociological analysis was to answer the question of whether and in what respect political action could be determined as a special form of *social action*. The attempt was made to reconstruct political action as a specific, generally operating type of action in its basic structural form. In what follows, I shall outline this reconstructive process as it has been undertaken by Hitzler. The *structural description of political action* shall present a first step towards understanding the phenomenon of business political activity.

[2] Hitzler's action-typological definition has been adopted on the assumption that »political action« (like the »Political«) does not present a clearly outlined, objective and as such exactly definable object of the social world. Concepts of »political action« in general and the one advanced in the present study are assumed to build on a cognitive process directed to social reality, in which certain single aspects of this reality have been qualified as genuinely »political behavior« and as such as constitutive of the conception of political action to be constructed.

[3] For a derivation of this concept from Plessner's anthropological perspective see Hitzler (1995).

2.1 Political Action as a Generally Operating Type of Action

Hitzler premises the reconstructive process with a delimitation of *political action* as a special form of *social action* from two other (specifically operating) types of action that refer to the Political but do *not* constitute generally operating types of action. These two types of action are conceived of as phenomena of which *political action* forms a part. Together with the action type of political action they are characterized as the three dimensions to which a "sociology of political action" principally (which was to mean not always and even less necessarily with an empirical object, but, so to speak, as a horizon of possibilities) would have to relate. The three dimensions are identified as, first, action of social actors which are defined or definable as "politicians", in short: the *action of politicians*; second, action in contexts, areas, and arenas which are defined or definable as "political", in brief: *action in political contexts*; and third, action that on the basis of special structural characteristics can be delimited from other types of social action as "political", in short: *political action*, or, as Hitzler puts it, *protopolitical action*, as it is relevant also in so-called pre- or extrapolitical spheres and among non-politicians[4].

These three dimensions Hitzler does not consider of equal rank. The author determines action of politicians as action *including* political action, political contexts as action contexts *including* political action. The *structural* particularity of both phenomena as against other similar phenomena, Hitzler argues, is that protopolitical action takes effect especially strikingly in them, be it by reason of historical processes of institutionalization or be it by virtue of social processes of assignment. Protopolitical action, however, the argumentation goes, is to the politician and to the political context as theoretical action is to the scientist, the university or science; that means, protopolitical action is not merely domain- and profession-unspecific, it is a "universalhistorisches Phänomen, ein lebensweltliches Datum" (Hitzler 1991: 13) which has basic structural characteristics that can be described. (For the sake of brevity I shall take "political action" to denote "protopolitical action" in the meaning Hitzler assigns to it.)

[4] Hitzler chooses the more defensive term "protopolitical" for the sake of terminological clearness (Hitzler 1994: 68).

2.2 The Structures of Political Action

What are the objectives, the characteristics on the basis of which we can refer to social behavior as »political« behavior?

Hitzler identifies two different objectives of political action (of which the available literature on business political activity identifies and treats only the first): The first objective is to protect one's interests against the resistance of second actors. The second is to gain the approval of third actors in doing so. The proposed action-typological definition of political correspondingly reads as follows:

> Protopolitisches Handeln soll heißen ein Handeln, das seinem Entwurf nach darauf abzielt, Zustimmung von einem Zweiten zu erlangen dazu, seinen Willen auch gegen das Widerstreben eines Dritten durchzusetzen. (Hitzler 1994: 68)

An interesting aspect of this definition is that it does not relate the political actor to one social actor (as it is typical of the literature on business political activity according to which political action refers to a diadic power-relationship) but to (at least) *two* social actors. Drawing on Carl Schmitt's 1927 concept of the Political (Schmitt 1963), social action is identified as political action if it includes a *Freund/Feind-relation* and action operating on the principle of *Freund-and-Feind*. Political behavior is determined as behavior aimed at asserting one's own interests against other interests with reference to interests of third parties claimed to match or overlap with one's own interests. In the very abstract, political action is determined as a triadic relationship[5] between the political actor, at least one social actor the political actor identifies as an »antagonist« and at least one social actor that the political actor identifies as a potential »ally«[6].

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[5] As Hitzler (1995: 291) points out, there exists one exceptional case which, however, could be understood as deduced from this triadic situation: The first actor, on the one hand, pursues the objective of having his way against the opposition of a second actor, and, on the other, the objective to gain for this, nevertheless, the approval of this second actor. Although only two actors participate in this special case, Hitzler argues, it is more complicated to be handled by the first actor than the simple triad: Stable backstages or common secret knowledge, for instance, cannot be built and employed.

[6] *Antagonist* in this context shall broadly refer to a social actor who holds interests and pursues objectives alternative that conflict with those of the political actor and thus presents a potential opposing power that the political actor aims to discourage and restrain from exercising and gaining power. That means, *antagonism* relating to the power aspect of political action does not necessarily refer to a manifest and open conflictual situation; it also includes latent, »invisible« clashes of interests. *Ally* shall refer broadly to a social actor who the political actor identifies as a potential supporter of his particular interests, positions, and objectives and aims to

The triadic relationship and the two action goals correspond with a bi-functional determination of political action as the *exercise of power* and the *transformation of this power behavior into a legitimized social order*, into a *Macht der Verhältnisse* (force of circumstances). Political action is not only to have one's will, it is also to provide the object of one's will with a *generally binding character*. For those actors against whom something has been put through with the approval of others that which has been put through is to have a temporary, long-range, or fundamentally binding character (Hitzler 1995: 291). Political action thus in a broad interpretation of positions such as Machiavelli's (1972) and Weber's (1980) is defined as action that is *herrschaftsbezogen*:

> Das - implizite oder explizite - Ziel *jeglichen* politischen Handelns ist, von Dritten akzeptierte - wie auch immer geartete - Möglichkeiten zu erwerben, zu erhalten oder zu erweitern, auf spezielle und/oder anonyme andere dem eigenen Willen entsprechend einzuwirken. (Hitzler 1995: 292; emphasis in original)

Every measure that is taken with the intention to be appropriate for achieving this objective is then a *political measure*. Everybody who attempts to exert influence on the order of living together is then a political actor. Political action, in this sense, secures rules of living together, establishes (relatively) stable practices, and ensures the (relative) reliability of the action of significant others. That is, it reduces the complexity of options and produces a *legitimized social order* (Hitzler 1994: 69), in the sense of a social order that is deemed binding and exemplary. Political action, in this meaning, and this is the *first important point* of Hitzler's conceptualization of political action as regards the guiding research question of this study, principally has a macrostructural reference: Political action is understood as being ultimately aimed at shaping the *institutional order* in the political actor's interests; changes in the institutional order affecting these interests accordingly I shall conceive of as having an impact on the political behavior of social actors.

On the basis of the determination of political action as having two functions, two action goals

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convince or persuade of and/or mobilize for these interests, positions, and objectives. That means, *alliance-building* relating to the dramaturgic aspect of political action does not necessarily refer to coalition-building in terms of organizing for collective action or action mobilization in terms of getting other social actors to act in one's interests; alliance-building also includes preventing other social actors from acting against one's interests, for example by public opinion formation - comprising both the shaping of »published public opinion« and »latent« public opinion as the opinion of the population which in turn might become manifest in opinion polls - around these interests.

and referring to a triadic relationship and situation, political action as a special form of social behavior is further described as having a *power aspect*, a *strategic aspect*, and a *dramaturgic aspect*, and as a type of action that cannot be reduced to one of these aspects (Hitzler 1995: 292). Political action in this sense is delimited, first, from *pure* power behavior as, adopting the definition of Weber according to which power behavior is aimed at preserving one's will against resistance (Weber 1972: 28), pure power behavior is not (necessarily) oriented towards approval. Then, political action also differs from *pure* strategic action in so far as pure strategic action, following for example Goffman's (1981) analysis of strategic interactions, is »solely« directed at putting other social actors in zugzwang - as inevitably as possible (for instance, by use of tactics to delude these actors concerning one's own intentions). Purely strategic action thus is also not (necessarily) geared to approval. And third, political action, in this meaning, is also not identical to *pure* dramatizing self-staging. Dramatizing self-staging, as it has been demonstrated by Goffman's early theatrical-imagery (Goffman 1969), is »solely« aimed at gaining approval for that identity that the respective actor claims for himself by the chosen way of self-presentation. That is, pure self-staging is not (necessarily) power-oriented (Ibid.).

However, and this is the *second essential point* of Hitzler's action-typological definition as regards the research perspective of the present study, political action starts from the problem of success-oriented self-presentation, self-presentation with regard to the realization of one's own interests. A central means of self-presentation is communication and the definition of a specific situation. It is a specific feature of the definition of political action here presented that it determines *communication*, generally, and *approval-oriented communication* (which is mainly communication about more general ideas and interests), in particular, as a central component of political action. In a structural perspective, Hitzler points out, political action as a specific type of social action concerns the achievement and safeguarding of chances of definition (Hitzler 1995: 293):

> Wer die richtigen Worte findet, wer zu formulieren versteht, was er will, wer weiß, wann er Kompromisse suchen muß und wie er sie finden kann, wer sein Wollen, sei es nun rational, traditional oder auch charismatisch, zu legitimieren vermag (...), wem es gelingt, vom Besonderen auf das Allgemeine zu verweisen und das Allgemeine im Besonderen aufzuzeigen (...), und wer schließlich über die Möglichkeiten - und das heißt auch: die Mittel - verfügt, um sein Wollen (auch gegen Widerstreben) zu realisieren (...) der hat - in welchem sozialen Kontext auch immer - gute Chancen, im

proto-politischen Sinne *erfolgreich* zu handeln. (Hitzler 1994: 68; emphasis in original)[7]

An essential aspect of political action thus is identified as the negotiation of matters of fact and matters of issue between divergent positions with respect to consent to and putting through of binding decisions.

The central role assigned to self-legitimizing presentation and communication is closely tied to that facet of Hitzler's definition which I shall identify as the *third important point* of this conception as regards the analytical focus of the present study: By determining the communication of policy preferences as the immediate goal of political action and the *Herstellung von Öffentlichkeit* in the sense of the ensemble-public relationship as an essential part of this objective (Hitzler 1995: 295) the conception points to *public arenas* (however narrowly or broadly constituted) as potentially essential reference points of political action. More specifically, by placing the emphasis on the audience- and approval-oriented nature of political action Hitzler's definition draws attention to the mass media as the communication channels with the greatest range and thus a potentially important point of reference in the design of political action.

2.3 Political Action as Means- and Ends-Related Behavior

By ascribing equal importance to power and dramaturgy, the action-typological definition of

[7] Hitzler's determination of the dramaturgic aspect of political action differs from that of the Business and Society literature in so far as it determines approval-oriented self-presentation action-typologically as a structural feature of political action, and not, as it is typical of the society-related management literature, in an advisory and/or normative attitude (merely) as a structurally determined (desirable) prerequisite for successful political action. For example, issue construction by protest movements as it has been so comprehensively described in sociological studies working with the frame-analysis approach can be construed as genuinely »political action« within the definition offered herein. Issue construction by protest movements according to this definition presents action aimed at the production of public approval of protecting »alternative« interests against the resistance of »established« interests. The emphasis that Hitzler's concept places on the approval-oriented presentation of one's interests and goals (and on the communicative technique of normatively charging one's action motives and goals by linking them to more general interests and ideas and dramatizing their collective goods character) by identifying it as a structural feature of political action imparts the same cognitive and cultural bias to this concept as it is characteristic of the concepts of frame analysis in new social movements research. For the cognitive/cultural strand of new social movement research see among many others Eder (1996a, 1995b), Gerhards (1992), McAdam (1994), Snow et. a. (1986), Snow & Benford (1988).

political as I shall use it to investigate the political behavior of economic actors has features of two of the »classic« conceptions of *political* in the social sciences that are basically opposed to each other: the Machiavellian/Weberian »realistic« conception of political focusing on the means-character of political, on the one hand, and the Aristotelian »normative« conception of political focusing on the ends-character of political, on the other[8]. However, it does not fully correspond with either of these conceptions. As described above, it differs from the Machiavellian/Weberian definition is so far as it uses political in an instrumental sense but does not reduce it to dyadic power-relationships. Instead, it relates political also to the construction of a legitimized social order in terms of generally accepted power relationships. As social acceptance of such power relationships basically builds on the successful assignment of collective, general or even universal ends to these relationships, besides means it is also *ends* (Zwecke) to which major importance is ascribed as one aspect of political reality.

While the legitimacy-oriented dramaturgic aspect constitutes the ends-related character of this study's concept of political action, the concept is still significantly different from the notion of *political* of classical practical philosophy and most of the ends-related conceptions of *political* in the social sciences. The latter conceptions are inherently normative approaches to political reality. They proceed from the Aristotelian assumption that the characteristics of political associations and political action can be determined on the basis of goals and ends which are given and assigned to them and cannot be chosen at will. In this normative conceptualization, politics is not a value-free notion, but more or less synonymous with good, public interest-oriented politics, which can be further characterized by ends such as justice, peace, liberty or democracy. The normative element of this conception of political shows itself in a notion of political order which is understood as a norm and not as an empirical fact.

The conception of political action as it is proposed in this study also links *political* to normative contents; however this linkage follows from an empirical-analytical approach to and

[8] For a description and critical discussion of the »realistic« and »normative« conception of political (the latter conception is alternatively termed normative-ontological or essentialistic) see Berg-Schlosser, Maier & Stammen (1981: 23-26). For an overview of conceptions of political and their different ideological traditions that distinguishes between problem-, means-, and ends-related conceptions see Mickel (1983: 349-354).

structural interest in the research object. It is not the concern of this study to define what is a good political order and measure real political behavior against this order. The normative, ends-related dimension of this study's action-typological conception of political results from the importance that is attributed to interpretive efforts and dramaturgic performance as one aspect of political action meaning the attachment of the political actor's particular ideas, interests, and goals to more general ideas, interests, and goals and underlying norms and values currently prevailing in the society of which the political actor is part.

For a definition of business political activity on the basis of these conceptual considerations, two more points have to be clarified. The first point is the role of the *political system* and the *political arena* in terms of the generally recognized institutional framework of politics, that is, the entirety of legislative, executive, and judicial bodies, in the concept of political action presented. The second point is the specific understanding of »arena of political action« and »institutional« and »noninstitutional political arena« in the conceptual framework of this study. The following three sections shall tackle these points. The first relates the differentiation of modern society into functionally specialized subsystems of which one is termed »political« to the proposed action-typological definition of »political«. The other two sections concretize the study's arena terminology.

2.4 The Relationship between Political Action and Political System

As has been mentioned above, it is a basic feature of the present study's definition of political action that it describes this type of action as a special form of social behavior and, as such, as structurally uncoupled from the political system. This implies that the political system is understood, first, as one (collective) political actor among others and, second, as one arena and addressee of political action among others. It does not imply, however, that the political system is considered as equal in position with other political actors and arenas and addressees of political action. Rather, I shall advance a conceptual framework which attributes central importance to the political system in the political topography of modern society and as a point of reference of the political action of social actors (In this respect the present study differs from those studies of business political activity describing political action functionally as pure,

short-term, power behavior; in the latter studies priority treatment of the political system and public affairs theoretically is rather accidental). This central importance results from the ultimate aim which is ascribed to political action: the aim to create temporary, long-range, or fundamentally binding obligations, that is, to influence in some way the construction and nature of the legitimate social order. There are two main reasons which, in connection with this goal of political action, account for the special role that the political system has for political action as a special form of social behavior.

First, in modern society the political system holds the specialized function of producing collectively binding decisions. It has the special right to control other societal systems, a right that these other systems do not have. By monopolization of this type of authority in the hands of the state, the political system basically defines the framework of these other societal systems, primarily by decisions which in the case of conflict can be bindingly enforced. In short, in modern societies the legitimate social order is largely based on a political-judicial codification and authoritative implementation by virtue of a *monopolistic state authority*; it largely presents a *legal order*. In view of this fact, it appears only consequent, if social actors (equipped with a certain resource-base[9]) for the most part include the political system as one actor and arena of reference in their political reflections and activities. In order to lastingly change society it often may be the most effective strategy to induce political decision-makers to decide in one's interests. This can be done by means of direct negotiation and then typically takes place in the *official political arena*. And it can be done indirectly by means of pressure of »public opinion« favoring one's political goals, and then takes place in the *noninstitutional political arena*. The reception of public opinion by political decision-makers at least to some extent is guaranteed since one of their main action goals is the maximization of votes for the achievement of decision-making power. For this aim public opinion serves political decision-makers as an indicator of the preferential needs of the population according to which they orientate their own actions.

The *second* reason, I shall state, is the *legitimatory power* of the political system in modern

[9] One has to bear in mind, that political action directed at the political decision-maker (directly or indirectly) is a type of political action that depends on certain preconditions. To be heard by the political system it needs specific resources such as a certain degree of organization, power, knowledge, popularity, and riches which actually only few social actors possess.

representative democracies. This specific power originates in the democratic control of the political system itself, in the binding of political decision-makers to the opinions and interests of the population. The democratic political system is to notice, operationalize, and hold the public interest. In view of this political principle and the corresponding institutional arrangements in those cases that political action goals of social actors, in the first place, do not refer to the shaping of the formal institutional structure but to the shaping of informal institutional structures such as, for example, the closer organizational environment the reference to ideative and material state support of one's own objectives may further politically effective involvement. Political actors, thus, either may communicate this support themselves or (by reason of a lack of social credibility) ask state actors to inform the respective addressees of political action about it.

It is, above all, the monopolistic state authority which has directed the attention of scholars dealing with business political activity first and foremost on state-business interactions. One major concern of this study is it, however, to suggest that despite the central importance of the political system as a reference point of political action, social action neither must necessarily occur in the arena of the political system nor must necessarily be directed at the state or rely on the approval of the state to be recognized as political action. In a society in which »subpolitics« play an increasingly important role and policy implementation gets more and more difficult, political action might be also directed, in the first and final analysis, at social actors in their role as »private politicians«, that is, at social actors whose attitude towards the political actor is directly decisive for the well-being of this political actor. In the context of such relationships it might be the most effective strategy to attempt to create via (more or less) »private« negotiations (more or less) informal enduring structures and practices safeguarding and promoting one's particular ideas, interests, and objectives.

2.5 The Institutional and Noninstitutional Arena of Political Action

I have already repeatedly pointed out that it is a basic premise of this study that social actors do engage in political activities also outside the official political arena, that is, outside executive, legislative, and judicial settings. On the basis of this premise the study

distinguishes between an institutional arena of political action and a noninstitutional arena of political action. What precisely shall be meant by »arena of political action«, and »institutional« and »noninstitutional arena of political action«?

Political action arena in the conceptual framework of this study shall be conceived of as a delimitable sphere of social action in which different social actors may engage in political activities. In a political action arena political actors communicate with other political and/or social actors in order to bring forward their political position and/or problem definition in the respective political discourse, to articulate their political objectives and to initiate and/or shape decisions of a certain binding character that safeguard and/or promote their interests. Political action arena further is understood as composed of *arena fora* which in turn comprise *fora actors* (the political actors) and *fora audiences* (the addressees of political action and the audience reached without plan).

Two different spheres of action are distinguished in which social actors pursue their political goals and strategies: The institutional and the noninstitutional political arena. Actions in the two arenas may be primarily directed at exerting influence on the political »outputs« of the respective arena of action itself or may be primarily aimed at exerting influence on the political »outputs« of the other arena. By *institutional political arena* I meant the generally recognized institutional framework of politics. That means, the boundaries of this arena are defined as those of the formal political system. The institutional political arena presents the action sphere of the system of professionalized politics and its multitude of formal and informal fora. The major characteristic of this political arena is that it is part of that societal system that has a functional and normative authority unique in society and is of central importance as arena and addressee of political action by virtue of this exceptional authority.

From this political arena the *noninstitutional political arena* is distinguished. This second arena refers to fora of political action that are external to the generally recognized institutional framework of politics. Political activities in these fora are political activities that are not constrained by the channels of corporatist and representative bureaucratic political institutions. They constitute practices "that belong to an intermediate sphere between 'private' pursuits and concerns, on the one side, and institutional, state-sanctioned modes of politics, on the other"

(Offe 1985: 820[10]). They are different from private modes of action (in their usual sense denoting person-related familiar, intimate social activity and »skirmish« inside the family and the circle of friends), as they are connected with some explicit claim that the means of action can be recognized as legitimate and that the ends of action can become binding for society (Ibid.: 826/27). They are struggles for the general putting through of specific social practices.

The study with regard to these two arenas of political action distinguishes further between different fora of political action. It does so by resorting to the *public/private dichotomy*. As political action is aimed at the rules of living together, it is in a sense in principle *öffentlichkeitsorientiert*, however not necessarily »public«. Political action, I shall argue, can take place in public, private and in half public/half private fora and is dependent on whether the kind of forum is oriented to publicity, privacy or a »controlled« publicity.

Political action taking place in public fora is *principally* open, that is to say, visible and audible for *everybody*. To put it in Habermas' terms, crucial for political action in public fora is the "prinzipielle Unabgeschlossenheit des Publikums" (Habermas 1962: 52ff.). Whatever is said and done in public fora diffuses into an immeasurable environment. The »boundless« audience of the political behavior of a social actor may comprise other political actors as well as non-political actors, that is, social actors that simultaneously engage or do not engage in political action. Political action in these fora actually takes place on the horizon of all citizens. In short, political action in public fora is distinguished by a high degree of »publicity« and a great »breadth of communication transmission«. In the institutional political arena, parliamentary sittings and public hearings are examples of fora of political action »in public«. In the noninstitutional political arena political activity in the context of public events and in the form of symbolic action are examples of political action »in public«. Political activities taking place in public typically are mass media oriented as mass media representation allows for the greatest publicity and broadest transmission of political messages.

When political action takes place in private fora, it means that the number of addressees and the size of the audience of political action are principally limited and controlled. Linked to

[10] With this definition Offe refers to the »new politics« of the new social movements.

exclusiveness as a characteristic of private fora of political action is the characteristic of *confidentiality*. What is said and done in private fora does not diffuse in the external environment as a matter-of-course. Instead, what becomes public typically is based on a joint decision of the respective forum-participants. Confidentiality is a key criterium for handling publicity in private fora. In short, publicity and breadth of communication transmission is relatively low in private fora of political action. In the institutional political arena »corporatist negotiation« is an example of political action »in private«, in the noninstitutional political arena »post-corporatist negotiation«, that means, state-independent negotiations between representatives of different social interests affected by a special problem, sporadically also occurs »in camera«.

Political action also takes place in half public/half private fora. In these fora there exist rules or agreements about at least a certain extent of publicity, for example on making action procedures or results open to the public. In the institutional political arena *Enquête-Kommissionen* are an example of fora of »half public« political action. In the noninstitutional political arena »round table« talks with a clear membership *and* a continual public representation via press reporting provides an example of such fora.

2.6 Political Action and Publicity

The degree of publicity of political action varying according to the respective forum of action affects the action's communicative design in three respects. *First*, publicity has a strengthening effect on the genuine argumentative thrust of political communication: Publicity is directly proportional to self-legitimizing political communication in terms of the *public interest*. The greater the forum audience, the more political actors are likely to explicitly and extensively attach their political arguments to ideas, goals, norms and values perceived as constituting this public interest. *Second*, publicity has a strengthening effect on the reference to generally held values. The greater the forum audience and with that the group of lay people as regards the political issue in question, the simpler the mechanisms of opinion-formation have to be in order to be effective. As empirical results of the *Nachrichtenwerttheorie* have shown, the attachment of topics and opinions to generally held values and the personalization and emotionalization of the topic and opinions providing them with a »human interest«

character are key techniques to form opinion in a general, dispersed, predominantly lay public. And *third*, publicity typically goes along with an increased use of *dramatizing communication* which is a result of the political actor's interest in attracting mass media attention. Mass media attention is not given per se but in conditions of competition is limited and must often be purposively produced[11].

3. Business Political Activity as a Multidimensional and Two-Level Activity

The present section, first, recapitulates the preceding conceptual considerations and formulates on this basis a summary definition of business political activity. Then, it advances the claim that over the last two and a half decades business political activity has undergone a significant change consisting of a heightened importance attached to the noninstitutional political arena as an arena of political action. It is this change which the analysis of business political involvement in the specific context of technical controversy is to exemplify.

The definitory expositions so far can be summarized as follows: The conceptual basis of the concept of business political activity as it shall be employed in this study is an action-typological definition of »political«. This definition conceives of political action as a special form of social action that is pursued in the institutional and noninstitutional political arena. Constitutive of this special form of social action is a threefold action orientation: a power, strategic, and dramaturgic orientation. This threefold action orientation results from the specific objectives of political action. These are, first, to have one's way against the resistance of second actors, and second, to achieve the approval of third parties in doing so in order to create obligation for that which is to be put through. While the power orientation relates to the preservation of interests against alternatives, the strategic orientation to technically correct, that is, promising, designs and performance, the dramaturgic orientation refers to the audience- and approval oriented nature of political action. Political action according to this definition constitutes a relationship of coalition *and* a relationship of power.

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[11] For reflections on the specific communicative rationality of the public sphere and the way in which this rationality is shaped by the constitutive characteristics of this social sphere see Gerhards & Neidhardt (1990: 17-19).

By consideration of political action as dramaturgic action, the proposed concept opens up a perspective on the cognitive, cultural, and communicative dimension of this type of action. It opens up this perspective by determining the approval-oriented consideration and communication of a much broader social reality than just one's own interests as an essential aspect of political action. It stresses that, despite every centering on self-interest, political action always also has an explicit reference to (more) general concerns and ends, that is, to a collective and/or public interest and its underlying norms and values. In brief, it identifies the inclusion and communication of some assessment of social worth of one's interests and goals and with that of some reference to current expressions of society's culture as a basic constituent of political action.

The action-typological definition of political as a general social phenomenon avoids the exclusive or focal view of actions pursued in the official political arena and opens up the view of political action outside this arena. Nevertheless, it concedes central importance to the formal political system as a reference point and arena of political action. The concept considers this importance a result of the key role that the monopolistic authority and legitimatory power of the political system is able to play in the creation of obligation which is the ultimate aim of political action.

On the basis of this conceptualization of political action, business political activity generally shall be defined as

> business activities, pursued in the institutional and/or noninstitutional political arena, which are designed to achieve approval for exercising influence on specific and/or anonymous social actors according to business interests.

Business political activity is described as an activity that may be pursued inside and outside the official political arena. At a very general level it shall be further described as comprising two basic modes of communicative action: *negotiation*, on the one hand, and *presentation* of »facts« and the self, on the other. Presentation also forms part of negotiation. However, the analytical distinction between the two modes of communicative action may serve to distinguish between business political activity that is largely monological (in the official political arena typically referred to as lobbying, in the noninstitutional arena as education or image campaigns) and dialogical communication, that means a direct exchange of information and arguments (provided that it has a certain level of »proceduralization« and result- and

policy-orientation, dialogical communication in this study is referred to as »corporatist negotiation«, when it takes place in the official political arena and among the state and the big established interest groups, and as »post-corporatist negotiation«, when it takes place independent of states and among representatives of different social interests affected by a specific problem in the non-official political arena).

Looking at the most recent history, I shall formulate the following *claim* as regards business' resort to the two arenas and basic modes of political action distinguished: In the first two postwar decades business political activity was largely restricted to negotiation and presentation in the official political arena. Since about the 1970s, however, it has significantly expanded by political activities pursued in the noninstitutional political arena. At first, these activities almost exclusively consisted in unidirectional communication designed to convey »facts« and a favorable business image. Since about the end 1980s, however, an increasing part of these activities is dialogical communication pursued in public and half public/half private fora taking the form of loosely structured noncommittal face-to-face communication (also designed as image-building) as well as communication with a higher level of »proceduralization« oriented towards concrete results (designed to build tolerance on the side of a new political challenger). This expansion of business political activity, I shall argue, constitutes a response to a new political challenge - the new social movements, their »quality-of-life« issues, and their politics of public mobilization.

In the 1950s and 1960s the central societal concerns were overall economic growth, advances in collective and individual distributional positions, and legal protection of social status. The dominant collective actors were political parties and specialized, comprehensive, and highly institutionalized interest organizations (Offe 1985: 824). For business this meant that the business political environment was restricted to the institutional political arena and that political challenges could be met by relying on business' strong strategic position in the system of intermediation; business political activity could be limited to power- and approval-oriented activities as regards the state, the unions, and occasionally the scientific community and pursued »in camera«. With the emergence of the new social movements the business political environment, so to speak, »expanded« as a result of a new collective actor on the political scene seeking to politicize the »established« institutions "in ways that are not constrained by the channels of representative-bureaucratic political institutions" (Offe 1985:

820), and of new societal concerns related to environmental, health, and safety issues and questions of identity developing with the increasing »institutionalization« of the new collective actor. Business has found its activities more and more questioned on the basis of these new societal concerns which imply new demands on the societal responsibility of economic organizations. In short, economic organizations since the 1970s have undergone a profound process of politicization and moralization. This process, I shall argue, has induced these organizations to move onto the noninstitutional political arena and engage in the *active creation of public support* for their activities. It has induced business to involve in educational activities (referred to in this study as »informatory education«) and image-building activities (here the study distinguishes between confidence-building and identity-building communication).

The immediate major targets of these types of political activity are the *interested/concerned public*, *opinion makers* (journalists, politicians, top executives of science and the economy) and *»credibility groups«*, that means, groups with the societal reputation of being especially trustworthy (teachers, students, professors, church representatives, and practitioners). The immediate action goal is to induce these population groups to approve of business activities that are objects of new social movement criticism or protest, to create a public opinion climate favorable to business views and positions and unfavorable to movement views and positions. For the achievement of this goal the approval of opinion makers is attributed special importance. Opinion makers are to be provoked into sympathetic responses to business opinions and convictions calculated to take effect as a multiplier of these opinions and convictions in the mass media and the population.

The *ultimate target* of business political activity in the public arena is the *state*: The pressure of a business-friendly public opinion climate is to prompt the state to take decisions that favor private enterprise. The ultimate goal of business public communication is to gain state approval of business technology policy; business public communication is to win state approval indirectly. State approval in its turn is to help improve public opinion on business technology policy.

Business political activity in the noninstitutional arena has not only targeted the interested/concerned public and opinion makers. It has also targeted its major challenger in this arena: the new social movements. In about the late 1980s business has started to

increasingly engage in »post-corporatist negotiations« with these actors. The principal goal that business pursues with these state-independent negotiations is the creation of *tolerance* of business activities on the side of the protest actors. The mobilization of public support - in the form of a favorable »published« public opinion and/or a favorable population opinion (which reaches its highest visibility in form of results of public opinion polls) also serves to provide a special »trump« that can be used in these interorganizational negotiations.

Technical controversy is a situation of societal conflict typically provoked by new social movement actors and centered on »quality-of-life« issues. In this societal context, I shall claim, a large part of business political activity has been pursued in the noninstitutional political arena aimed at education and the building of image and tolerance. The following chapter proposes a classification of business political activity in technical controversy which represents this claim.

III. APPLYING THE CONCEPT OF BUSINESS POLITICAL ACTIVITY TO TECHNICAL CONTROVERSY

Before the quintessence of the developed model of business political activity is applied to the issue-specific context of technical controversy, a further specification of this model is necessary. This specification refers to the exclusion of the microstructural level, in terms of the political behavior of individual managers, from the analysis. The model conceives of business political activity as an *organizational* - independent and collective - *activity* that is intended to accomplish the political objectives of a firm and/or a collectivity of firms. Business organizational behavior that refers to the political behavior of an individual firm the model denotes as Corporate Political Activity, business organizational behavior that refers to the co-ordinated political behavior of a collectivity of firms the model denotes as Collective Business Political Activity. In the special case that the economic organizations acting collectively belong to the same industry, the term is Industrial Political Activity (this type of business political activity typically takes the form of associational activity).

On the basis of this additional specification and the hypothesis advanced in the preceding section we can note, that the business political activity concept as it is used in the context of this study refers to

> *business independent and collective organizational activity in the context of technical controversy, pursued in the institutional and noninstitutional political arena, that is designed to achieve the approval of third parties of preserving organizational interests against the resistance of other social actors*[1].

In the following two sections this concept of business political activity is used to, first, sketch the *relational field* in which business political activity in modern technical controversy takes place, that means, to concretize business political activity in this situation of societal conflict as a specific *Freund/Feind*-relationship. Then, it is employed to classify this political activity. I shall distinguish between five major types of communicative action in which business organizations in this specific relational field engage in order to lastingly succeed with their

[1] It shall be made explicit at this point that the term *social actors* is used to point out that the addressees of business political activity in technical controversy - including antagonists and sought-after allies - as a rule are social systems such as groups, organizations, associations, and institutions which concrete persons as role-holders merely represent.

technology policy.

1. The Relational Field of Business Political Activity in Technical Controversy

The concern of the present section is, so to speak, to »give names« to the (direct and indirect) addressees of business political activity - who so far have been presented as mere abstract structural phenomena - with respect to the specific situation of technical controversy. On a general assessment of business political activity in recent controversies over modern technology (such as the controversy about nuclear energy, conflicts over the use of specific products of chemistry, and debates on the handling of waste) and under special consideration of business political activity in the societal conflict over genetic engineering, I shall describe business political activity in technical controversy as a business behavior that is directed against the interests of a *specific* social actor and at gaining the approval of *specific* third parties of protecting business interests against the interests of this other social actor. That means, the underlying claim of the following exposition is that modern technical controversy is characterized by a specific business antagonist and specific sought-after business allies. With *business antagonist* I shall refer to the social actor who participates as a political actor in the controversy and among all political participants represents those interests which differ most from the interests of business. Therefore, the »antagonist« presents the biggest threat to business interests and that social actor upon whom business, in particular, seeks to impose its will. With *sought-after business allies* I shall refer to the social actors that business, in particular, seeks to make accept the imposition of its will upon the political antagonist. The »sought-after allies« do not need to be political participants in the controversy. They may be politically active, but also passively interested or (so far) entirely indifferent social actors.

1.1 The Business Antagonist

As Mazur (1981) convincingly has pointed out, in modern technical controversy there are typical roles which are occupied by specific social actors. The typical roles refer to the two opposing positions in this specific type of societal conflict. These are termed the »proponent

position« presenting the position which supports the technology and the »opponent position« constituting the position that opposes the technology, either wholly or in specific fields of application, and consequently also the technology proponents (Mazur 1981: 43). The »proponent side« Mazur describes as being made up of some combination of corporate business, government bodies, and professional associations and organizations. The »opponent side« is identified as a combination of environmental, consumer, citizens' groups and ad-hoc groups formed specifically to protest against the specific technology.

I shall draw on and support this structural description of technical controversy on the interactive level in so far as I identify some combination of new social movement groups and organizations (including »Green Parties« as the institutional anchorage of the new social movements at the level of official politics) and citizens' and ad-hoc groups as that collectivity of social actors that in technical controversy has the role of the major technology opponent and consequently also of the major business opponent. In order to denote their political role as active technology opponents and business challengers and their social position as non-established, system-unspecific social actors, I shall term these organizations and groups »civil protest actors«. *Civil protest actors* in this study are determined as the key antagonist of business in technical controversy, to be more precise, of those business actors that have a special interest in the development, promotion, and implementation of the technology at issue. Civil protest actors strive for a mobilization of the public against the technology at issue and its proponents and the exertion of influence on political decision-making. Their aims are to call attention to risks associated with the technology, to spread arguments on the technology's riskiness and dangerousness, and to try by political or legal steps to restrict or prevent the use of the technology[2].

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[2] *Civil society*, following Habermas, is understood as a system of voluntary associations, non-statal and non-economic, which root the communicative structures of public opinion in the realm of life. These associations constitute the organizational substrate of that public of citizenry which emerges from private life and which seeks public interpretations for its interests and social experiences and the exertion of influence on the institutionalized formation of opinion and will. A major part of these associations belong to what has been called the »new social movement sector«. In the present study the terms *civil protest actors* and *new social movement actors* are used as synonyms. Adopting a definition by Gerlach, I shall broadly define these social actors as "group[s] of people who are organized for, ideologically impelled by and committed to purpose which implements some form of personal or social-cultural change; and who are actively engaged in the recruitment of others, and whose influence is spreading in opposition to the established order within which it originated" (Gerlach 1987: 112). More specifically I shall understand them as a new type of collective actor which on the one hand expresses doubts about unlimited technical and industrial progress, the desire for more quality of life, and the wish for more political participation, and on the other hand increasingly succeeds in exerting influence on the field of public communication. It is important to note that the social actors referred to by these definitions include *citizen*

1.2 The Sought-After Business Allies: A Typology

I also agree with Mazur that there is typically some collectivity of »established« social actors that, together with those business actors that have a stake in the respective technology, form the proponent side in technical controversy. As opposed to Mazur, however, I shall take a different view on the »establishment side«. In an action-theoretical and process-oriented perspective I propose to distinguish between that part of the »establishment« the interests of which are similar to or overlap with business' interests as regards the technology at issue and which out of these original interests sides with business and that part of the »establishment« which business in the process of technical controversy has convinced (or has sought to convince) to passively and/or actively support the technology at issue, for instance, by directing attention towards similar or overlapping interests or by declaring business interests as being in the general public interest. The latter »established« actors form part of the sought-after allies of business in technical controversy. This differentiated view serves simply to emphasize that support of business technology policy also from the »establishment« is not necessarily the »self-evident« result of a correspondence or overlap of interests but may be the effect of business strategic action.

But it is not »established« actors in terms of state actors and the big social interest groups only whose support business organizations have sought in this type of societal conflict. Spatially defined parts of the population, the public at large and protest actors, too, have been the target of business political activity. In essence five types of sought-after business allies in technical controversy can be distinguished of which the fifth concerns a special case of business political action in this context:

(1) decision-makers in politics and administration in the field of technology policy and representatives of that part of science and economy (including the trade unions) taking a particular (institutional) interest in the technology at issue;

(2) representatives of opinion-making professions/social groups and/or credibility groups such as journalists, politicians, top executives of science and economy,

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action committees; though these citizen groups are special in their concerns and organization in those cases in which this difference is of no or minor importance they are - for the sake of brevity - subsumed under the concepts of civil protest actors and new social movement actors.

teachers, students, professors, church representatives, practitioners;

(3) the local public within the sphere of business locations;

(4) the interested and/or concerned public, and finally,

(5) civil protest actors, that is, the antagonist itself.

The theoretical construction of a social group of actors as political antagonist *and* sought-after ally of a political actor (type 5) appears paradoxical only at first sight. It concerns the *special case* of this study's conceptualization of business political action, which, however, is to be understood as, so to speak, deduced from the typical triadic situation (see Chapter II., ft. 5): The political actor, on the one hand, aims at preserving his will against the resistance of his political antagonist, and, on the other, at gaining, nevertheless, approval of this of the political antagonist. What could an action, pursuing simultaneously these two goals, look like? Such action may consist in the making of concessions to the political antagonist not as far as one's basic interests at issue are concerned but concessions as regards minor related interests. In technical controversy, business usually does not make concessions to its political antagonist which mean a clear self-restriction in using the technology in question. Typically, concessions concern the safety and/or informational policy pursued with regard to specific technology applications. These concessions are usually not aimed at building consent as regards the protested technology or technology application - the political antagonist may stay in opposition to these. Rather, the aim is, by demonstrating readiness to negotiate about selected matters of the technology's implementation, to make the political antagonist reduce its active resistance to some extent. The aim is to defuse and control this resistance by directing the political activity of the antagonist to matters of secondary importance.

To act successfully in the dyadic situation is more difficult than in the triadic situation. It presupposes a political antagonist who regards it a futile attempt to protect his *fundamental* interests against the political actor's interests, on the one hand, and who does not shrink from entering into negotiations, that is, into an interaction that might jeopardize his own political identity, on the other. Furthermore, successful political action presupposes more political skill as, contrary to the triadic situation, it is not possible to build stable backstages and to produce and use common secret knowledge (Hitzler 1995: 291).

Among the sought-after business allies in technical controversy decision-makers in politics

and administration take up a special position. This special position results from the above expounded role of the political system as the central agent of control and guidance in modern society. Political and administrative decision-makers together with the representatives of that part of science and economy taking a particular interest in the technology at issue can be described as the, so to speak, »traditional« addressees of business political activity. The opinion-making professions/social groups and credibility groups, local communities within the sphere of business locations, the public at large, and civil protest actors, however, have been addressed by business only in recent times in the specific context of technical controversy. In technical controversy, business obviously perceives activities aimed at coming to terms with the state and the big organized social interests alone not as sufficient to protect its interests.

How do business organizations attempt concretely to gain the approval of the five different types of social actors just listed in order to be able to lastingly succeed with their technology policy? I shall argue that business organizations in the specific context of technical controversy engage in five major types of approval production.

2. A Typology of Business Political Activity in Technical Controversy: Distinguishing Five Types of Approval-Oriented Communicative Action

On the basis of the proposed concept of business political activity I suggest to distinguish five types of business political activity in modern technical controversy. These five types are *corporatist negotiation*, *post-corporatist negotiation*, *informatory education*, *confidence-building*[3], and *identity-building* (see table 1)[4]. That is, I suggest to classify business political

[3] The characterization of informatory education and confidence-building as specific types of business political activity in technical controversy in some basic aspects follows Wiedemann's characterization of *information provision* respectively *credibility-building* as two of four strategies of risk communication (the other two strategies which Wiedemann distinguishes are co-operation strategy and conflict management strategy) (Wiedemann 1990).

[4] The proposed typology consists of five *idealtypes* of business political activity. The five types distinguished are abstractions based on a concentration on and one-sided exaggeration of specific elements of business political activity that are attributed special importance. In reality, the boundaries between the types are fluid; one often finds mixings.

activity in terms of *different modes of approval-oriented communicative action* which comprise the two basic modes of *negotiation* and *presentation of »facts« and the self.* Communicative action is understood as action which has the following four basic functions: to represent certain circumstances (representative function); to influence the addressee(s) of communication in a cognitive and/or emotional respect and/or with respect to their behavior (appellative function); to represent the communicator itself (self-representative function); and finally, to define and change relations between social actors (relational function)[5] (Schulz von Thun 1988).

In accordance with the definitory thrust of the proposed concept of business political activity the organizing dimension of this classification is not business' interactive relationship with its antagonists but business' interactive relationship with its potential and sought-after allies. It does not chiefly regard the power aspect but the dramaturgic aspect of business political involvement.

The following expositions are organized as follows: Individual sections are devoted to the five types of business political activity just listed. In each section, I shall describe the respective type of communicative action by determining its addressees, the extent of interactive immediacy, the extent of dialogic drift, that function of the four basic functions of communicative action just listed which is the most pronounced, the terms of content, the main logic it applies for approval production, and finally, the fora in which it is typically brought to bear.

[5] In real communication these four functions are connected with each other. However, one of the functions may be the central one, dependent on the problem perceived and the goals strived for (Wiedemann 1990: 346).

	Corporatist-Negotiation	Post-Corporatist Negotiation	Informatory Education	Confidence-Building	Identity-Building
Arena	institutional political	noninstitutional political	noninstitutional political	noninstitutional political	noninstitutional political
Breadth of Transmission	low	low	high	high	high
Fora	esp. legislative and executive settings	e.g. community advisory panels, confidential corporate dialogue, participative technology assessment projects	e.g. seminars, lectures, exhibitions, print media articles, brochures	e.g. issue and institutional advertising, brochures, Open Days, plant tours, discussion events, post-corporatist negotiation	e.g. issue advertising
Priority Targets	state, unions, research community	community groups, protest and other social actors	opinion makers, concerned/ interested public	opinion makers, concerned/ interested public	opinion makers, concerned/ interested public
Ultimate Goal	influence on state politics by collective agreements	influence on protest politics by collective agreements	influence on state politics via public opinion-formation	influence on state politics via public opinion-formation	influence on state politics via public opinion-formation
Immediacy	direct communication	direct communication	direct and mediated communication	direct and mediated communication	mediated communication
Dialogic Drift	two-way-communication	two-way-communication	one-way-communication	one-way- and two-way-communication	one-way-communication
Main Content	policy-oriented	policy-oriented	factual	normative	moral(istic)
Central Communicative Function	relational	relational	representative	self-representative	appellative
Main Logic Applied	collective rationality	collective rationality	scientific-technical rationality	cultural reason	moral reason

ble 1: Types of Business Political Activity in Technical Controversy

2.1 Corporatist Negotiation

The first type of business political activity that I shall present is *corporatist negotiation*[6]. Corporatist negotiation shall be defined as

> *business political activity that is designed to gain approval for business technology policy from a limited number of social actors, including representatives of the politico-administrative system and, dependent on the issue, organized labor and/or the scientific community, with this approval taking the form of collective agreements worked out in a process of policy-oriented, direct, two-way-communication which takes place in the institutional political arena.*

Negotiation defined in general terms refers to direct two-way-communication with a certain extent of *»proceduralization«* and *result-orientation.* It includes a limited number of persons and typically (however not necessarily) takes place »behind closed doors«. The output to be collectively produced typically is not an agreement on a single action but agreement on a set of related actions, that is, a specific policy; in terms of content negotiation can be characterized as *policy-oriented.* Negotiation can further be described as action that exerts influence on the relations between a limited number of social actors. It is the *relational function* which is particularly pronounced with this type of action.

The political actor who engages in negotiation may bank on concessions, threats, and persuasive appeals to promote an agreement which optimally protects his interests. However, the basis on which negotiation is to create *lasting* support of these interests is the willingness and ability to compromise. In negotiation the political actor ascribes to the collective output a value of its own and hence puts up with a certain restriction of his specific interests. Basically negotiation is to achieve approval of one's interests by demonstration of the willingness and ability to »rationally« co-operate with others: The banking on a *collective rationality*[7] (relating to the whole of the negotiation parties) is a major characteristic of

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[6] For a study on corporatist intermediation that has developed, to different degrees, in European democracies in the twentieth century see, among many others, Schmitter & Lehmbruch (1979).

[7] »Collective rationality« shall be defined as a logic according to which co-operative action leads to a general situation that improves the individual situation of all co-operating parties.

negotiation[8].

The present section deals with negotiation as a type of business political activity which is pursued in the official political arena and typically »in camera« and involves the participation of the politico-administrative system and, dependent on the issue, organized labor and/or the research community, those interests affected by the technology at issue which are socially dominant. It is mainly business associations but also big corporations which engage in corporatist negotiation in modern technical controversy. Key matters of negotiation are the public funding of technology research and development and regulation of risks, that is, state promotional and control policies.

There are various fora in the political arena (which in technical controversy actually comprises the national political arena and the political arena of the European Union where more and more basic decisions on national technology policy are taken) in which business organizations engage in negotiation ranging from informal meetings to commissions and advisory bodies and committees.

Especially in negotiation procedures which are rather informal, *economic argumentation* is of central importance. Business in this context typically seeks to win support by pointing to disadvantages for the national (and/or European) economy such as loss of national (and/or European) competitiveness that would result from restrictions of the technology's development and/or implementation. Usually, this argumentation is advanced in direct communication *and* submitted as texts in form of collective statements and memoranda; collective statements and memoranda form the »material« basis of negotiation. A typical means of negotiation that business organizations employ above all in informal contexts is the *threat of relocating research and production facilities abroad.* This threat is, so to speak, a »standard« business statement in technical controversy, above all directed at the political decision-maker. A typical means of negotiation applied in the context of regulatory debates is concessions in terms of *»voluntary« self-obligations* which may take the form of industry-wide safety measures or guidelines concerning the more general handling of the technology

[8] While political activity by definition has a reference to a rationality that goes beyond the consideration of the particularistic values and interests of the political actor, negotiation as a specific type of political activity is further characterized by the reference to a specific collective rationality considering the different values and interests of the collectivity of the negotiating parties.

at issue. Self-regulatory measures typically are to produce agreement on the abandonment of (more restrictive) state regulation.

In negotiation procedures which are more formal, for instance in advisory commissions, the importance of economic argumentation is relativized due to the specific »forum rules« basically resulting from the formal commission tasks. In committees advising on safety classifications of technical risks, for instance, business needs to widely restrict argumentation to *scientific-technical data and argumentation.* In technology-focused *Enquête-Kommissionen*, on the other hand, it has to take a more general, multidimensional view on the technology at issue. These parliamentary commissions are designed to grasp and describe, in co-operation with political experts and experts of »societal practice«, technologies or specific technology applications in all of their complexity including their complex effects on society and on this basis work out future-oriented policy proposals. They differ from the typical corporatist negotiation in so far as they operate in a half public/half private forum (the higher degree of »publicity« in the form of joint press statements and publication of the negotiation results also induces business to take a more holistic view on the issue) and often include participants who are not plainly representatives of the major interest groups (for example, experts in law or the social sciences).[9]

[9] The *Enquête-Kommission*, one of the most intensive forms of parliamentary policy advising in Germany, in the last decades has significantly gained in importance as a forum of business political negotiation in technical controversy. The parliamentary commission of inquiry, with the help of which more complex and significant subject-matters are assessed, has advanced in the course of the 1980s to the special form of parliamentary treatment of specific technologies (nuclear energy and genetic engineering as two highly conflictual technologies have been the subject-matter of *Enquête-Kommissionen*) and technically induced problems (more recent *Enquête-Kommissionen* have dealt with such problems under the overarching subject-matters of climate change and sustainable industrial development). *Enquête-Kommissionen* are »mixed« commissions composed of members of the *Bundestag* of the different political parties and »experts« (appointed by the parties) who include »independent« scientific experts (comprising natural and social scientists) and experts of »societal practice« with the latter usually being representatives of industry, the trade unions, and the research community, and, recently, sometimes also representatives of the environmental movement. *Enquête-Kommissionen* are distinguished from more traditional forms of parliamentary policy advising in so far as they assign (at least theoretically) equal status to parliamentary and non-parliamentary commission members with decisions that have to be voted on. As von Thienen (1989: 93) puts it, with *Enquête-Kommissionen* the demarcation line of the classic model of policy advising, between the "(entscheidungsohnmächtigen) Berater als Informationslieferanten und dem (wertorientiert handelnden) politischen Entscheider als Informationsbearbeiter" (von Thienen 1987: 93) according to tendency is abolished.

2.2 Post-Corporatist Negotiation

Business organizations do not only involve in negotiations in the official political arena in the context of technical controversy. Since about the second half of the 1980s individual corporations and trade associations do also increasingly engage in negotiations in the noninstitutional political arena. Drawing on the model of a "post-corporatist order" in advanced modern society developed by Eder (1996b: 192ff.[10]) this type of business political activity shall be referred to as *post-corporatist negotiation*. Post-corporatist negotiation shall be defined as

> *business political activity that is designed to gain approval for business technology policy from a limited number of social actors, including new social movement actors, with this approval taking the form of collective agreements worked out in a process of policy-oriented, direct, two-way-communication which takes place in the noninstitutional political arena.*

The social actors whose approval business seeks to achieve in these state-independent negotiations are, in the first place, selected groups/organizations of the new social movement sector including local citizen groups. The involvement of economic organizations in negotiation in the noninstitutional political arena, in the first instance, is meant to produce tolerance on the side of local and supra-regional protest actors of business technology policy. This tolerance individual corporations or trade associations attempt to gain by giving empirical proof of the willingness to plan and perform technology policy in a continual »feed back« with the critical direct and wider societal environment.

The fora in which economic organizations engage in post-corporatist negotiation range from informal and sporadic meetings to »round table« negotiations, that is to say, negotiations that have been institutionalized for a certain or indefinite period of time. These round tables may be locally focused and organized as negotiation between corporate actors and representatives

[10] Eder identifies the characteristic element of this order as an increasing decoupling of the self-organization of the emerging institutional order in advanced modern society from the state, the emergence of a negotiated order beyond the market and the state, and a new legitimating ideology supporting these arrangements (Eder 1996b: 194). The model attributes to social movements and collective mobilization a constitutive role for the generation of this order. According to Eder, the phenomenon of systems of negotiation outside the classic-formal political arena is the key to the institutional transformation that accompanies the *rise of nature as a collective concern for a common good* (Eder 1996b: 192).

of local citizen groups and other major local groups as is the case, for instance, with the "Gesprächskreis Hoechster Nachbarn", a local discussion forum which the chemical enterprise Hoechst has set up in order to »institutionalize« the company-neighborhood dialogue and which deals, among other things, with technical matters. Or they may take place on a more general level and be organized as negotiations between corporate or industry actors and representatives of social movement organizations and possibly other social actors as is the case, for example, with the Unilever "Genetic Engineering Dialogue" initiated in different countries by the Dutch food company Unilever. This dialogue has the objective to work out lines of consent in the field of novel food. In Germany the participants in these negotiations included the environmental organization "Bund für Umwelt und Naturschutz Deutschland" (BUND) and the consumer organization "Verbraucher Initiative" (VI). While in the case of the local round table the negotiations are held »in public« - journalists and the interested public are invited to act as an audience of the negotiations - in the case of the supraregional round table they have been held »in private«; even the existence of the German Unilever dialogue (which has finished recently) was made public only after about one year of debate (Die Zeit 7.7.1995, p.25; see for these examples of post-corporatist negotiation Part B, point III.2.4.2).

Key matters of post-corporatist negotiation instigated by or entered into voluntarily by business are *technical safety* and *ecological compatibility* of industrial/corporate research and production facilities and technology products, and industrial/corporate informatory responsibilities. The major line of reasoning of the economic organizations is *scientific-technical argumentation on technological safety for man and environment.* Typical means of negotiation are concessions as regards extensions and improvements of corporate/industrial safety and informatory measures.

2.3 Informatory Education

Business does not only engage in negotiations in the noninstitutional political arena. It also engages in the presentation of »facts« and self-presentation activities targeted at a larger public. In this section I shall present the conveyance of »factual« knowledge as a specific type

of business political activity in technical controversy. I shall refer to this activity as *informatory education.* Informatory education shall be defined as

> *business political activity that is designed to achieve the approval of business technology policy directly from opinion makers and the interested/concerned public and ultimately from the state by opinion-formation via the imparting of »factual« knowledge with a special focus on scientific-technical information. Informatory education is practiced above all in the public arena as direct and mediated one-way-communication.*

Economic organizations engaging in informatory education attempt to create a public opinion climate favorable to business views and interests by the supply of *information* on this policy and the technology at issue. The goal is to *educate* the selected targets on the basis of this information about the technology and the way it is developed and used by business. Informatory education is pursued by business associations as well as big corporations in various fora in the public arena. There are on the one hand seminars, lectures, and exhibitions, fora in which informatory education is practiced as *direct communication.* On the other hand, there are the mass media (radio, television, print media); business performs informatory education also as *mediated communication*, for example, in the form of issue-related newspaper articles. Moreover, business organizations spread information by their own media such as brochures and newspapers. A special characteristic of business political communication in the educative mode is that the flow of communication is unidirectional from the political actor to his targets. Informatory education is *one-way communication.*

The assumption underlying this type of business communicative action is that while support of the selected targets grows with the extent of factual knowledge of business technology policy and the technology at issue, the reasons for non-acceptance are on the one hand *ignorance* or *superficial knowledge* and on the other *misinformation* caused by non-balanced media reports and protest communication placing the emphasis on potential detrimental effects of industrial and other applications of the technology and misperceptions and fears arising from that ignorance/superficial knowledge and misinformation. From this assumption it is concluded that approval of the targeted groups is best achieved and the concern of these groups best allayed or prevented by providing them with sufficient and »sound« information by knowledgeable experts, information which brings the groups' perception and evaluation into line with those of the »experts«. Informatory education thus places the emphasis on the

representative aspect of communicative action. It seeks to influence the cognitive factors of opinion-formation.

»Sound« information is characterized as factual, »objective« information. In terms of content, informatory education basically is *factual communication.* Its special focus is on scientific-technical factual knowledge. The logic which in informatory education in particular comes to use is *scientific-technical rationality*[11], the rationality which business traditionally utilizes as proof of argumentative superiority in public and political discourse[12]. It is the knowledge, skills, and authority of scientific-technical experts that this type of business political activity banks on for approval production. Scientific-technical reason is meant to de-emotionalize and de-dramatize public discourse and to create an »objective« public view of the technology at issue and its different applications.

The information provided by business educative policy in technical controversy is multifarious. It comprises on the one hand information on the general role of science and technology in modern society and the specific role of the respective technology in question and business' use of this technology in current and future society(ies). For example, information is provided that shows how medical technology in the last centuries has increased life expectancy or that the application of modern biotechnologies in agriculture is necessary to secure in the long term a sufficient world food supply. Information on this level focuses on the communication of the societal benefits of technological development, on the relations between scientific-technical progress and societal welfare and business' contributions to the societal welfare by promoting scientific-technical progress. It often combines factual information and scientific-technical data that provide the basis of normative conclusions in terms of a societal and industrial obligation to develop and use the respective technology with technology images of familiarity and naturalness. Factual information is embedded in portrayals of the technology and its products as rooted in familiar, thus graspable, and natural

[11] »Scientific-technical rationality« may be determined with Plough & Krimsky (1987) as a form of thinking that "rests on explicitly defined sets of principles and scientific norms" (1987: 8) which include "hypothetico-deductive methods, a common language for measurement, and quantification and comparison across risk events" (Ibid.).

[12] However, the importance of this kind of rationality as a means of producing approval of modern technology and business technology policy in the recent past more and more has declined in importance; to demonstrate this is one aim of the present study.

processes. »Normalization« and »naturalization« of technical developments serve to support factual information in de-emotionalizing public discourse.

The focus of informatory education, however, is on *technical risk*. Information is supplied on the nature and dimension of the risks of the technology at issue and measures taken for risk reduction and safety maximization. Technology risks are communicated as a fundamentally technical issue, that is, as a problem that can be accurately assessed and solved by technical means (social, political, and cultural risk categories largely remain unconsidered in informatory communication). Communication about technical risk often is accompanied by information on the general safety philosophy advocated by business, that means, on business' view of how uncertainty and indistinctness should be treated in principle. This information seeks to provide answers to questions such as: Are technical risks principally avoidable? Have they attained a new quality? Is life today more risky than yesterday? How can risks be assessed and what are the possibilities for a responsible handling of risks? The tenor of the answers is that uncertainty and risk are existential constituents of industrial society as they are an integral part of technology and technology society's material basis of existence. Consequently, it is argued, the objective of risk policy could not be the removal of risk by prohibition but would have to be risk management in the sense of a best possible risk assessment, calculation, minimization, and control. Informatory education on this level basically takes the form of technical risk communication that is meant to convey the message of the highest possible standard of technical safety. *Technical safety* and the *correspondence of technical progress with societal progress* present the main messages of this type of business political activity.

2.4 Confidence-Building

Another type of political activity that economic organizations in the context of technical controversy pursue in the public arena is confidence-building. Confidence-building shall be defined as

> ***business political activity that is designed to gain the approval of business technology policy directly from opinion makers and the interested/concerned public and ultimately from the state by opinion-formation via the enhancement of business social credibility***

and trustworthiness. Confidence-building is basically normative communication in terms of communication that declares business technology policy in full conformity with society's norms and values and is practiced above all in the public arena as mediated and direct, monologic and dialogic communication.

As distinguished from informatory education confidence-building proceeds on the assumption that it is *business social credibility* and *trustworthiness* rather than factual knowledge which forms the basis of the targets' approval of business technology policy and the technology itself. Approval and disapproval are understood as depending to a great extent on how much confidence the targeted groups have in business generally as a societal institution and specifically as a technology promotor and user. The assumption further holds that due to the emergence and diffusion of a modernization-critical perspective, this societal confidence has decreased in the last decades and that there exists, consequently, fertile ground for widespread disapproval of both the technology at issue and its proponents. From this assumption it is concluded that confidence of the targeted groups in business has to be (re)produced in order to achieve acceptance and reduce the effectiveness of communications of the business antagonist to the targets. Such trust is considered of central importance for approval production and so the targets are characterized by high social credibility and trustworthiness - especially, teachers, professors, church representatives, and practitioners; sympathetic responses from these groups to business technology policy are considered to have a generally strengthening effect on business social credibility and trustworthiness.

Confidence is built by conveying the message of business as an organizational/interorganizational system that is not secluded from its societal environment but open to it; that in developing and implementing a technology policy, is open to society's concerns, needs, and expectations and willing and capable to orientate its actions according to the norms and values underlying these concerns, needs, and expectations. In short, the message to be transmitted characterizes business as a *public-interest-institution* willing and capable of societal co-operation and the subordination of self-interests to the public good. Confidence-building in this respect differs from communication in the educative mode which also stresses the contributions of business technology policy to the societal welfare in that it expressly communicates these contributions as the result of a well-conceived *business socio-political responsibility*. It is meant to give evidence of the functional role of business in

society *and* of business social and moral responsibility as the basis of this role's performance; it is meant to give evidence of business as a morally behaving agent. In comparison with educative communication communication in the confidence-building mode has a much more pronounced *self-representing* function.

In terms of content, this type of business political activity, pursued by individual corporations as well as business associations, basically presents *normative communication*. It is communication about business acting in full conformity with society's norms and values. The logic underlying business communication in the confidence-building mode is based on the perception of what constitutes societally *appropriate* business policy on technology development and use. It holds that the documentation of the societal appropriateness of business technology policy is necessary for the creation of business credibility and trustworthiness in the context of technical controversy. It is *cultural reason*[13] which is the main logic applied for approval production.

Societally appropriate technology policy is basically defined as a policy that safeguards and/or promotes human safety, health and environmental soundness and that is in continual exchange with its societal environment. It is the societal values of *safety*, *health*, a *clean environment*, and *participation* operationalized as *public dialogue* upon which business communication in the confidence-building mode focuses. A method increasingly applied to demonstrate the normative, obligatory character that these values have for business is the establishment and public announcement of business self-regulation in terms of *codes of conduct* committed to these values.

Public dialogue is communicated as a highly appreciated societal value as well as practiced as a specific form of public communication. As distinguished from the one-way-communication model of informatory education, confidence-building complements monologic communication activities with *dialogic communication activities*. The message of openness towards society's interests and concerns is to be transferred not only by the content of communication but also by its *form*. Especially, face-to-face dialogic communication, the

[13] »Cultural reason« shall be broadly defined as a form of logic according to which social reality is shaped by the cultural fabric of society. The term "cultural rationality" has been used by Plough & Krimsky (1987) to account for risk communication and set against "scientific-technical rationality".

immediacy and realness of this kind of communicative encounter is to convey the message of a co-operative and consent-oriented stance of business towards society. It is to signal the step from positional to discursive communication, that is, reciprocity and openness for the revision of one's own opinion.

The main fora of confidence-building in the form of *direct dialogic communication* are Open Day events, national and regional discussion events, the individual corporation in the context of tours of research or production facilities, and the above mentioned »round table« talks with participation of local and/or social movement groups.

Business political activity in the confidence-building mode also takes place as *monologic, mediated communication.* In the mass media it is organized, above all, as issue and institutional advertising, in business' own media it basically takes the form of self-representation and issue-related brochures.

2.5 Identity-Building

There is a second self-presentation activity in which economic organizations engage in the public arena. This activity I shall refer to as *identity-building*. Identity-building shall be defined as

> *business political activity that is designed to gain the approval of business technology policy directly from opinion makers and the interested/concerned public and ultimately from the state by opinion-formation via the production of moral resonance. Identity-building basically is moral(istic) communication in terms of communication drawing the boundary between the Good and the Bad in technical controversy and is practiced above all in the public arena as mediated monologic communication.*

The basis on which identity-building seeks to gain the targets' approval is not factual knowledge or trust but *moral identification.* Constructed as a source from which moral self-worth can be derived business political communication in the identity-building mode is to create moral resonance. It portrays business technology use as a valuable contribution to the public good in order to offer the targets the opportunity to be »on the right side« and to fulfill the moral responsibilities they have to the society in which they live by committing themselves to this policy. By means of dramatization, identity-building communication emphatically calls on the targets to seize this opportunity - it constitutes a *positive appeal to*

individual and societal moral responsibility. In short, this fourth type of business communicative action has a pronounced appellative function and the main logic it applies for approval production is *moral reason*[14]; it is designed to influence the *affective factors* of opinion-formation.

Like confidence-building communication, business communication in the identity-building mode highlights business' socio-political responsibility. However, while the former focuses on business dealing responsibly with technology risks for man and the environment, the latter places the emphasis on business acting responsibly *by* developing and using the disputed technology, on business technology policy as being dedicated to the good of society. Communication, in the first place, is not defensive but *self-confident and offensive*. It is self-confident and offensive as the language used is euphemistic as regards the contributions of the respective technology and business technology policy to the public good - typically defined as human health, a sound environment *and* a sound economy, however, with varying foci - and cacophonous as regards the effects of a non-use of the technology on that public good. Identity-building does not necessarily imply direct discrediting of those social actors advocating issue positions that challenge business technology policy. However, euphemism and cacophonism create a polarized structure of terms which means that the moral upgrading of one's own position coincides with the moral downgrading of the opposing position and its advocates. Business communication in the identity-building mode basically is *moralistic communication* implying the moralization of the business antagonist. The message to be conveyed is that of the *moral correctness* of business technology policy and the moral incorrectness of the opponents of this policy. Identity-building banks on the principle of (social) inclusion and exclusion.

Identity-building communication basically is organized as *mediated, one-way-communication* in the form of issue-advertising. A means of strengthening the moral credibility of advertising communication is the use of »testimonials« in the form of business-friendly statements of persons generally acknowledged as moral authorities such as church representatives, ethicists or practitioners. It is business associations rather than individual corporations that engage in

[14] »Moral reason« shall be broadly defined as a form of thinking that rests on categories of »good« and »bad«.

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this type of business political activity. Corporations are rather cautious with this more or less directly confrontationist communication as there is a high probability that goal achievement - creating approval of the targeted groups - goes hand in hand with an intensification of protest discourse. The potential damage associated with becoming the focus of this discourse is deemed too high for the single corporation. Business associations are a valuable means to render antagonists of corporate technology policy »moral outlaws« without these corporations having to be visible and risk image-damage.

Summarizing the preceding sections, I have argued that economic organizations in the context of technical controversy engage in policy-oriented, »fact«-based, normative and moral argumentation for creating approval of business technology policy. The major means of approval production are compromise, education, confidence-building and identity-building, the major logics applied are collective rationality, scientific-technical rationality, cultural reason, and moral reason. Business political activity is pursued »in public«, »in private« and in a »half public/half private« sphere.

The basic argument that the proposed classification of business political activity makes is that business in the context of technical controversy engages in political activity in institutional and noninstitutional political arenas. Looking back on two and a half decades of recurrent technical debate, I shall advance the following claim: Since the 1970s business has significantly expanded its political involvement as it has ceased to rely exclusively on its strategic position in the system of intermediation and more and more has engaged in political activities in the noninstitutional political arena to safeguard its technology-related interests. Political involvement in the latter arena in this period of time has undergone a significant change. Economic organizations decreasingly have solely relied on unidirectional informatory education for safeguarding their interests. Instead, in the pursuance of their political objectives, they have increasingly complemented educational communication with »normative« (confidence-building, identity-building) and interactive communication.
The next chapter attempts to relate these developments to a number of contextual factors. These contextual factors comprise forces on the level of culture, sociopolitics (that is, politics pursued by »public« actors outside the formal political system), public policy (that is, policy formulated through elected representatives), and morals.

> Wenn Unternehmungen vermehrt in öffentliche Auseinandersetzungen geraten, in denen es gar nicht um ihre wirtschaftliche, sondern um ihre gesellschaftliche "Leistung" geht, dann wird hieraus deutlich, dass sie offenbar nicht nur dem Markt als externem Lenkungssystem unterliegen, der ihren Erfolg in Gestalt zu- oder abnehmender Umsätze, Marktanteile und Gewinne bewertet, sondern offenbar auch noch weiteren *"nichtmarktlichen" Lenkungssystemen*, die Erfolg eher in Gestalt von sozialer Akzeptanz, politischer Legitimität oder moralischer Autorität bemessen. (Dyllick 1989: XIX, emphasis in original)

IV. EXPLAINING BUSINESS POLITICAL ACTIVITY IN TECHNICAL CONTROVERSY

The present chapter expounds the study's explanans and explanandum. The first sub-chapter introduces the *explanans* which adopts the embeddedness-perspective of neo-institutionalist organizational sociology and characterizes technical controversy as a specific type of *business political environment* for which a process of socio-cultural change is constitutive. The second sub-chapter presents the *explanandum*. It describes the scope, design, and dynamics of business political activity as influenced by this political environment. This second sub-chapter advances the argument that business political activity in technical controversy basically is *cultural politics*, a politics aimed at conciliating »business culture« with »societal culture«.

1. Technical Controversy as a Specific Type of Business Political Environment

As has been expounded under point I.3, organizational analysis in the neo-institutionalist »embeddedness-perspective« relates organizational structure and behavior to the cultural-institutional environment in which these organizations find themselves embedded. The embeddedness-perspective suggests searching for the reasons for diversified and two-level business political activity in an environment that exceeds the formal political system which traditionally is identified as making up the business political environment. It suggests taking the *sociocultural embeddedness of economic organizations* into consideration.

In applying the neo-institutionalist perspective, the present study deals with the issue of business political activity in technical controversy by investigating the social phenomenon of extensive and continuing public and political debate on modern technology as a *process*

of cultural change initiated and promoted by the new social movements. This process of cultural change refers to the diffusion and stabilization of the *idea of an environmentally and socially compatible steering of technical change*. The argument is that in technical controversy this process shows effect and that one major effect is *a high degree of public exposure* of economic organizations which belong to the industrial sectors which concern goods and services that are closely related to life, food, and health (as it is the case with the chemical industry). The major indicators of the public exposure of industry organizations are characterized as state intervention, parliamentary scrutiny, technology protest, and mass media attention. In short, it is argued that the diffusion and stabilization of the newly developed idea of how to deal with technology subjects a significant part of business to a *process of politicization and moralization* in which both institutional *and* noninstitutional politics play a role. For the affected organizations this process means to be plunged into a *»crisis of legitimation«* which means in its turn a major threat to the organizations' autonomy and discretion.

The environment in which the study situates business political activity for analysis thus comprises a cultural, moral, sociopolitical, and public policy factor[1]. By determining »cultural change« as part of the political environment, business political involvement is set against the background of broader transformations in society's ideological structure. The following sections expound the forces identified as making up the *business political environment of technical controversy*, that is those environmental forces which are claimed to have a major influence on business decisions to act politically and how to act politically.

[1] To investigate business political activity as a reflection of and a response to an external environment conceptualized like that means to choose a level of analysis that is societal. Except from very general observations, the following aspects are excluded from analysis: company characteristics (influential factors at the organizational level such as scale, resources, and market position), characteristics of industry and business structure (influential factors on the supra-organizational and inter-organizational level such as concentration and networks of competitive, strategic, and co-operative relations), and managerial features (influential factors at the individual level such as uncertainty, experience, values, external networks).

1.1 The Cultural Factor: Technical Controversy as Value Conflict and Expression and Motor of Ideological Change

The analytical framework to the study of business political activity that I shall propose highlights the role of »culture« in the construction of this type of business activity. »Culture« in this context is not restricted to the subjective, inner thought or values of individuals or to some indistinct notion of a collective consciousness, but is understood as constituting its own objective reality, albeit a socially constructed reality. Culture is recognized as an object of orientation existing outside the individual/social actor.

The cultural factor of the business political environment of technical controversy as a lasting situation of societal conflict in modern society is determined as a *process of cultural change*. This process consists in the *dissolution of the traditional societal consent on how to deal with technology and the associated transformation of the societal ideology on technical change*. The process set in, I shall argue, with the emergence of the new social movements bringing up the fundamental question about the future of industrial society and the role of technology in this future. The driving force behind this process, the argumentation goes, is the new social movement politics of mobilization. This public- and protest-orientated politics has produced a *»manifest« politicization of technical risk and technical change in general* in modern society. The basis on which this politicization takes place is a *conflict of values.* Politicization takes place in the form of a confrontation of the values of individual and collective material affluence, private property, efficiency, and hard work - the values to which the traditional, fundamentally positive perspective on technical change is primarily orientated - and the values of safety, health, a sound environment and a sound relationship between man and environment - the values to which the technology-critical perspective of the new social movements is above all orientated. The publicly enacted and resonant confrontation of these two sets of values has caused traditional societal consent regarding the developmental dynamics of technical change to crumble. It has produced new public expectations on how these dynamics should be socially steered.

In terms of ideology, this process of dissolution comprises the following two developments: On the one hand, the idea on which the traditional societal consent is built, the idea of »technical progress equals social progress« attaching special value to material affluence, is losing in importance as a mechanism to legitimize technical change and

technology policy and to build consent regarding these. At the same time the idea generated by social movements of a »socially and environmentally compatible technical change« orientated to so-called »post-materialist« values is gaining importance as a legitimizing and consensus-building mechanism. It is gaining an »ideological« character. As will be expounded under point 2., it is fundamental to see this development in order to understand the argumentative design of business political communication in the context of technical controversy.

1.1.1 The »Materialist« Perspective on Technical Change

Up to the 1970s, throughout the Western world the developmental dynamics of technical change was based on a broad societal consent. This consent was built on a specific idea: The idea that *technical progress equals social progress* as it increases individual and collective material wealth. This idea was especially prominent in the 1950s and early 1960s; these years constitute a period of unquestioning faith in technical innovation grounded on its welfare effects. The idea of the correllation of technical and social progress forms part of the "industrielle Entwicklungsparadigma" (paradigm of industrial development), as Brand (1982) puts it, or of the *Fortschrittsideologie* (ideology of progress), as this paradigm more generally is referred to by German scholars, which is a major institutional logic of advanced modern society. In this ideological framework social progress is a function of both technical innovation and industrial progress constituting basic requirements for increases in collective and individual wealth.

The idea of the congruence of technical and social progress is based on three major beliefs: The first belief is that the beneficial side of technical innovation - modernization of the economy, improved working conditions, securing or creation of industrial competitiveness, and finally, a reduction of working hours and increased spending power - compensates its negative side effects such as dequalification, loss of jobs and professions, health risks, environmental pollution etc. (Braczyk 1986: 174[2]). The second belief is that the potential

[2] Braczyk (1986) exemplifies the »erosion« of the ideology of progress on the basis of the conflict over nuclear reprocessing.

risks associated with technical change and technical solutions to societal problems in principle are technically controllable and, therefore, a matter of »expert« and not of societal concern. The third belief, finally, holds that there is no need in expressly legitimizing developmental direction and outcome of technical change as these result from technical-economic inherent necessities that are inevitable.

The belief in the inner logic and laws of technical change puts the societal constitution of technology genesis, use and implementation under a taboo. In the ideological framework of which this belief forms a part, a debate about concepts of technical use and implementation is an irrelevant and layman's undertaking. What is problematized and legitimized are purely the *social effects* of technical innovation; the issue of technical change is confined to the problem of (re)distribution.

1.1.2 The »Postmaterialist« Perspective on Technical Change

The societal consent as regards the fundamentally positive value attached to economic and technical innovation begins to crumble with the emergence of the new social movements in the course of the 1970s. Groups and organizations more or less closely affiliated with the anti-nuclear energy, the environmental movement and the women's movement swerve from this consent in that they declare the question of how to deal with technology in modern society an open question, a problem that remains to be settled. The explanation provided for this position challenges the ideological basis of the traditional societal consent on three grounds: First, technical development is determined as a societal construction; second, the social control of technical development is declared a real possibility following from the societal constitution of this development; and third, the social shaping of technical development is defined as being indispensable because of the various negative side effects and risks associated with technical innovation in general, and the development and use of the so-called »new technologies« - nuclear energy, modern biotechnologies, modern chemistry - in particular.

In this view technical innovation is not a beneficial societal matter of course but a *risky societal project* the realization of which demands the highest caution and comprehensive

reflection and deliberation. The need for caution, reflection and deliberation is deduced from the uncertainty, side effects and risks associated with technical development and implementation as regards human health and safety, environmental soundness, as well as the moral and social order of living together and the responsibility not only for the present but also for future generations. Special emphasis is placed on the destructive potential of technology as regards the ecological equilibrium. The decision for technology development and use, according to this view, requires that the »dark side« of this development and use has been thoroughly investigated, publicly discussed, and evaluated by as many social groups as possible.

This view that constitutes the common ground on which the various social movement groups and organizations meet in their technology discourse I shall refer to as the idea that *technical progress is social progress when it is a societally controlled progress.* It is the idea that the socially and ecologically detrimental potential of technology needs to be prevented from being realized through the social control of technical change organized as a discursive, participative, public-orientated process. To put it differently: it is the conviction that there is a need to control technical change in a societally reflexive way: by including in principle all social groups affected; by considering all effects of technical innovation in all of their dimensions; by generating public discourse within which a public opinion on the technical innovation or project at issue can develop.

In its value basis this idea differs from the traditional idea of »technical progress equals social progress« in that it puts more weight on the values of safety, health, a clean environment, and a sound relationship between man and environment and less weight on individual and collective material affluence and the associated values of private property, efficiency, and hard work; »postmaterialist« values rank higher than materialist values. Essentially more weight is given to the value of a *sound environment.* The relationship between man and his natural environment is at the core of this idea. Moreover, special emphasis is placed on *participation* and *public dialogue.* Public deliberation and social participation in the process of policy formulation are identified as the adequate means for building societal consensus as regards technology development.

The main conceptual difference lies in the focus on the concept of *risk* instead of the concept of progress. Risk is the concept upon which the idea of the need for societal

reflection, deliberation, and decision-making on technology development, in short, of the need for social control of technology development, is grounded.

1.1.3 The »Enactment« of Antagonistic Ideas of Technical Change

The societal context in which the contrariness of the traditional and the newly developed ideas regarding technical change is publicly »enacted« is technical controversy. Societal conflict over the use of a specific technology or technology application is typically initiated or at least extended by *protest action* organized by some collectivity of new social movement actors[3]. Protest action is the attempt to initiate a societal *counter-discourse* to the dominant »discourse on progress«, a »discourse on risk« that is based on the idea of a socially and environmentally compatible technical change and to integrate this discourse as widely as possible in society.

This attempt has been rather successful. Technology protest has generated an intensive and enduring public and political debate in the form of a confrontation between the traditional and newly developed ideas regarding technical change. This confrontation takes place in the political arena in the context of technology-focussed commissions, inquiries, and technology-assessment bureaus and agencies. The political system increasingly establishes fora of reflection and deliberation with the task not only to deal with the technical and economic but also with the ecological, social, and moral aspects of technical development on the basis of which a »societally responsible« technology policy is to be formulated. In the public arena it is »round table« talks and, above all, the mass media which give way to this confrontation; the objects, strategies, and ideas of technology protest and their discussion against the background of such issues as »Standortsicherung«, international competitiveness, and decreasing willingness to take risks are an integral part of this type of public discourse.

[3] The recurrence of technical controversy in a number of countries of the Western world must be understood as an effect of the process of stabilization of the new social movements. They have transformed from relatively free-floating social phenomena into a *social movement sector*, that is, into an economically grounded stable system of a political public. The issue of technology and technical change is deeply anchored in this system and in case of technical innovations collective protest is regularly organized in order to transform it into a general public and political issue.

In short, in the last two and a half decades technology protest has transformed technical change from an unquestioned social phenomenon into a salient public and political issue. What is more, it has generated widely shared new expectations on how technical change should be socially controlled and on what public and private technology policy should be, expectations that are for the most part antagonistic to the traditional ones. Referring to society's ideological structure, this means, that technology protest has transformed the »ideology of progress« from an institutional logic with a monopoly character in the field of society and technology into an institutional logic that is part of a complex and partly contradictory ideational system.

1.1.4 The Unsettled Cultural Environment of Business

What does this development mean for business as a societal system heavily involved in and relying on technology development and use? It means to be embedded, since the period of unquestioning faith in technical progress following World War II., into an *unsettled cultural environment.* This unsettled cultural environment consists of a change in societal perceptions of what constitutes *societal progress* and the way in which technology can contribute to this progress. It consists of a process of dissolution of the traditional consent that technical-scientific and associated economic progress constitute the common denominator of a modern conception of the good life; this cultural environment above all represents a threat to business social legitimacy.

Social legitimacy shall be understood with Epstein as *collective recognition* based on the "belief in and acceptance of the 'rightness, propriety, moral goodness' or 'appropriate(ness)' of particular persons, institutions, or modes of behavior" (Epstein 1969: 51). Social legitimacy, according to this definition, is bound up with social norms and values and a conferred status and is, therefore, always controlled by those outside the respective person, organization or institution. It is granted on a contingent basis and is subject to alteration as social demands are modified. The threat to which since the 1970s business social legitimacy is subject consists of a gap developing between public expectations and business performance as regards technology use: Business employs technology in the most efficient and effective way; the public increasingly expects business to use technology in consideration

of economic as well as ecological, social, and moral aspects. It results from a process of dissolution of the traditional basis of legitimation of technical change - the »ideology of progress« attributing highest value to an efficient and effective use of technology - a basis on which also a significant part of business social legitimacy rests.

In a similar, albeit much more direct way, business social legitimacy in the nineteenth century was deeply threatened (and its basis finally significantly altered) by a process of transformation of that societal ideology that functions as the basis of legitimation of the market system. While in the nineteenth century the underlying dynamics of this process is a socio-political debate focussing on the social question and the distribution of wealth, in the twentieth century it is a socio-political debate focussing on technology induced risk and the question of what, in the final analysis, constitutes a »good life«. The issue of the latter debate is not business intervention into the social sphere by capitalist activities. (Despite conflicts over details this type of business intervention is firmly grounded in a society-wide consent on values; it is a settled issue nowadays.) Instead, the (business- and otherwise-related) issue is *technical intervention* into the social and ecological sphere, the »artificialization« of human, animal and plant life and their exposure to technically induced risks.

Social legitimacy is becoming an especially unstable status for business organizations that rely on modern technology and provide products and services that directly affect life, nutrition, health, and environment and with that are closely related to the issues of the newly developed technology debate. It is especially these organizations that are confronted with the problem that their social legitimacy may no longer be assured by providing society with goods and services and by appearing to effectively and efficiently employ and develop technology for the production of these goods and services, that is, by adhering to the idea of »material affluence«. It might also increasingly depend on appearing to consider the social, ecological, and cultural effects of technology development and use, that is, by committing to the idea of »socially and environmentally compatible technical change«.

Technical controversies as situations of societal conflict over a specific technology or technology application are situations in which the unsettled business cultural environment as it has existed since the 1970s as regards business as an agent of technical change becomes *turbulent*. It becomes especially turbulent for those organizations that in the context of

technical controversy get »publicly exposed«. These organizations become directly subjected to technology protest, public scrutiny, and regulatory action, that is, to direct challenges of their social legitimacy.

1.2 The Public Policy and Socio-Political Factor: The Public Exposure of Business in Technical Controversy

On the cultural level, the business political environment of technical controversy has been determined as the process of dissolution of the traditional societal consent on how to deal with technology and the ideology on which this consent was built. Drawing on Dyllick (1989), the basic environmental factor at the level of politics and society shall be defined as the *public exposure of business*. My argument suggests that business in the context of technical controversy is not only subjected to some »structural« changes and challenges: Those business organizations that have a direct economic interest in the technology or technology application at issue are directly confronted with more or less concrete expectations and demands advanced by »public« actors (and deduced from the generally changing societal perspective on technology and technical change) who aim either themselves or via third parties to exert influence on the organizations' goals or the way of reaching these goals. These economic actors get themselves a *public issue*. Their social legitimacy is not solely a tentative status but a status under direct public and political attack. For these business organizations, I shall claim, technical controversy means a situation of *legitimation crisis*.

The concept of a public exposure of business is adopted from the business economist Thomas Dyllick (1989[4]). Broadly defined, it refers to the fact that business in general, and the big industrial enterprise in particular, by their operations increasingly affect public interests and,

[4] Dyllick identifies and investigates public conflict as such, including technical controversy, as a new business environmental challenge and the public exposure of business as a new management dimension (1989: esp. 15-35). The author's concern is to highlight the previously neglected non-economic external control systems of the corporation and elucidate their effects on management. Dyllick very convincingly argues on the basis of three case studies (Nestlé and the issue of baby milk products, Eternit and the issue of asbestos, and von Roll and the issue of dust- and noise-immissions) that corporations in principle in their decision-making are subjected to all three areas of practical philosophy: economy, politics, and ethics, and that, accordingly, the yardstick of the success of corporate action is not restricted to economic efficiency but includes political legitimacy and moral authority.

vice versa, are also affected by activities that are pursued in the name of the larger public good and directed against private-autonomous freedom of choice and operation. To the extent that this happens, business organizations take on the character of *quasi-public institutions*[5] which, notwithstanding their private-law foundation, get involved in public conflict in which they have to strive for their social acceptance. To get involved in public conflict is a question of being able to justify in view of a sharpened risk sensitivity the societal consequences and risks of industrial activity not only to the political decision-maker but also to those individuals concerned and to a larger public. It means becoming subjected to constraints of justification and legitimation, indeed similar to those of political institutions (Dyllick 1989: 460). According to Dyllick, the major indicators of the public exposure of business are state intervention, political alertness by parliament and political parties, interest of science, media attention, and protest action.

Technical controversy, I shall claim, is a situation in which the transformation of business organizations into quasi-public institutions prototypically finds expression.

The major forces that drag economic organizations out of the »restricted area« of the »private« enterprise and make them »organizations of the public interest« in technical conflict are the same as in other public conflicts in which business is involved in contemporary society. These major forces are *protest actors* and the *mass media*. To focus on protest action and media attention as both expressions and determinants of the public exposure of business is to highlight that technical controversy is a *public, not a specialized, discourse*[6]. The argument behind this focus holds the following: The fact that the public, that is to say, the public sphere is the stage on which technical controversy takes place is a key to understanding and analyzing business political activity in this specific societal context. The fundamentally different political challenge to business as compared to traditional problems of competition or conflicts of distribution results from this fact.

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[5] For the conceptualization of big enterprises as "quasi-public-institutions" see Ulrich (1977).

[6] Drawing on Hennen's exposition on the public discourse character of technical controversy, I shall understand public, not specialized discourses as discourses that occur when subsystem-specific programs of problem-solution fail and an unqueried consensus on legitimate problem-solution has dissolved. To conceptualize technical controversy as public discourse thus means to understand it as an attempt to create, in view of a lack of societally shared interpretative patterns and action preferences, a new consensus about that what is and that what should be (Hennen 1994: 461).

The public exposure of business in technical controversy results to a major extent from the activity of new social movement groups and organizations aimed at preventing technology development and/or use. This is due to the specific political strategy of this social actor which is the *mobilization of public pressure.* New social movements are a new collective actor on the public stage, albeit with specific, limited, political resources. They only have a restricted »Konfliktfähigkeit« (capability to engage in conflict), that is, they do not command resources - energy, money, food - that are indispensable to the functioning of a society, and, therefore, they usually lack direct access to the official political process of opinion-formation and decision-making. Exertion of political influence depends on mobilizing as wide as possible a public support for their own ideas, positions, and goals; public opinion-formation is the political strategy that is constitutive of this social actor. The type of action upon which this strategy is based is *collective protest.* Collective protest as a form of public action draws the technology or technology project at issue as widely as possible to the attention of the public and sensitizes the public to the collective actor's ideas and concerns. Usually, its ultimate aim is to place the technology issue on the docket for authoritative decision-making and to play a role in the public policy process.

A favorite topic and target of collective protest is the big industrial enterprise and big industry in general. Their technology policy and the risks and broader societal consequences emanating from the implementation of this policy often form the core of protest discourse and activities. Industrial technology policy characteristically is a major topic both in written documents such as books, articles, brochures, folders, leaflets and such action contexts as demonstrations and elaborate campaigns. Moreover, it is often the direct target of protest action in the form of symbolic single-actions and legal action. Symbolic single-actions and legal action are those protest actions to which big industrial enterprise finds itself most exposed. Both forms of protest typically are organized in co-operation with citizen action committees - which have been either specifically formed to protest against the technology policy of the adjacent enterprise or which have already existed for a longer time being concerned with the general policy of this enterprise or with various local problems - and some collectivity of regionally- or nationally-orientated new social movement groups and organizations. Often one can find a kind of division of labor in that the local group takes over the protest action on the spot and the more widely orientated groups provide this action with financial aid and/or argumentative support in the form of scientific expertise or legal advice.

The characteristics that make big industry a favorite object of protest discourse and action are, on the one hand, its very »bigness« and, on the other, its profit-orientation. While bigness means that it generally attracts some public attention, profit orientation means an inherent (systemic) reference to the problem of safeguarding collective and public goods in a free (or relatively free) market system. To organize technology protest as protest against big industry is an effective means to popularize and, particularly, to moralize the technology matter by accusing a prominent economic actor of trading public safety, a clean environment, and morals in return for private profits (this point is elaborated under point 1.3). In short, big industry is the right peg on which to hang the protest story; at least in most cases it is more suitable than other technology-promoting organizations such as small and medium size enterprises or government and science institutions.

What does technology protest precisely do when it makes industry the peg upon which the protest story is hung? It instrumentalizes the »problematic nature« of for-profit organizations for the recruitment of activists and media work, the two constitutive parts of the strategy of mobilization of public pressure. The successful pursuit of this strategy requires, on the one hand, the recruitment of as many active and committed supporters as possible who can carry out protest action when necessary. Technology protesters usually search widely for allies; there is the tendency to unite with like-minded groups in branched coalitions and alliances, out of which, depending on the concern, may develop complex, dynamic, or even internationally working networks that are regularly activized in form of protest action.

Moreover, the strategy's successful pursuit presupposes effective media work. The *media* are the carrier of public debate. They are the channel by which issues are drawn to the attention of the public, the most important amplifier and disseminator of protest arguments and demands. Therefore, technology protesters usually try hard to enter mass media discourse (the intensity of this endeavor to a great extent depends on the financial resource base). A typical means to this end is dramatic and symbolic action, for example, the occupation of industrial testing ground.

So, for industry to be made the peg upon which the protest story is hung means to be dragged into the limelight, to be made a *public issue*. To be more precise, it means two things: In the first place, it means to become exposed to the inquisitive looks of a critical, sometimes hostile

public. Technology-related decisions and technology practice which beforehand were concealed from the public eye are now made transparent. Then, as a second step, this information now known to the public is subjected to public opinion, that means, it is considered in the light of the publicly prevailing assessment criteria and evaluated with respect to the public interest. In a society considerably sensitized to the »dark side« of technical change, subjection to public opinion as a rule leads to the development of public demands directed at industry itself or at the political system to take measures to protect company neighborhoods and the public at large from the dangers and risks associated with industrial technology development and use. These demands are threats to industry's discretion.

New social movement organizations and citizen action committees are important but not the only social actors that in technical controversy challenge industry in the name of superior societal interests. Sometimes, the scientific community and the trade unions, too act as advocates of the public good (they did so extensively in the nuclear energy conflict) and so contribute to making industry a public issue. Moreover, there are the »professional« advocates of the public good, parliament, the political parties, and government. In technical controversy they are forced to engage in political discourse on the socio-political responsibility of industry as a technology developing and using system. As the German genetic engineering controversy shows, the political system may act as a »public« challenge to industry even before significant protest and public attention to the technology at issue has developed (for example, in the form of parliamentary commissions of inquiry). The probability that this is the case increases with the institutionalization of technology criticism at the level of the political system in the form of »Green Parties« and the experience-based general increase in sensitivity of the political parties regarding both the negative effects of technology development and technology protest.

So, the public exposure of business in technical controversy basically means that industrial organizations no longer pursue their technology activities in the »safe« private sphere but in the very different public sphere. That is to say, they are dragged into a sphere of action in which it is necessary to mobilize *good reasons* for the social acceptability of one's behavior. Above all they have to justify the potential detrimental consequences and risks associated with industrial technology development and use towards wide sections of the population. While in former times it was sufficient to reach an agreement with the responsible authorities, in

contemporary society it is a larger public which has to be convinced or persuaded.

The higher industrial public exposure in the form of public scrutiny and appeals to alter or control industrial technology policy (and the less extensive or effective the attempts of business to reach consent), the higher the risk for industry to be subjected to the, so to speak, most extreme form of public exposure of business: government intervention in some form of burdensome administrative, regulatory or legal arrangements. Regulation can be understood as the most extreme form of public exposure of business as it subjects business to the public interest in a legally binding form. Technology regulation defines the very rules by which technology-based actions in the economy are to be carried out. Indeed, some form of technology regulation imposed to effect public ends, such as product safety or environmental protection typically affecting both industry and science at some point in technical controversy, is the rule rather than the exception. The genetic engineering controversy, for example, in most countries of the Western world has produced some regulatory arrangements (and a European Union-wide regulation in form of a number of directives concerning modern biotechnologies), and in some countries even special laws.

Regulation is not the only typical effect of industrial public exposure in the form of protest and public pressure. Indeed, detrimental effects are manifold. They range from internal encumbrances such as internal quarrels and moral stress for the staff members and employees over indirect costs in terms of a loss of credibility and trustworthiness, delays in the approval of production facilities and new products, absorption of time and man power, the impairment of negotiation leverage over the state to offset costs in terms of reduction of sales, reduction of stock prices, and an increase in direct expenditures (for example, for consultants) (Dyllick 1989: 463-464).

These direct and indirect costs, internal encumbrances and the loss of discretion by regulation are expressions of a business situation which this section has expounded as a *crisis of legitimation*. The legitimacy at stake is not business legitimacy in view of the market, or business legitimacy in view of the share holders; instead, it is business legitimacy in view of society as a whole, of society as a co-operative project. The major causal force of this crisis of legitimation I have determined as being the *power of the public*, the maintenance or reproduction of business social legitimacy as bonded to actively entering public discourse. The

concern of the next section is to argue that *moral argumentation* is a constitutive element of the power of the public. Moral reasoning in technical controversy, the argument goes, plays a major role and causes especially high restraints on justification and legitimation. It means that industry is put into the »moral offside«.

1.3 The Moral Factor: Technical Controversy as a Moral Challenge

To fully understand business political activity in technical conflict it is not sufficient to recognize that industrial organizations in this context are publicly exposed and that this exposure forms part of a process of change in the societal value and ideological structure. It is also fundamental to see the *moral nature* of the public exposure of business. In technical controversy business is not challenged primarily on the ground of economic, scientific, or political insufficiencies but on the ground of morally misguided behavior. The reproach of exposing industry's immediate environment and society at large to technically induced hazards and that of »artificializing« man and nature by technology development and use are reproaches of trading the public good - operationalized as public health and safety, a clean environment, and a harmonious relationship between man and nature - in return for private profits. It is moral accusation from which the »crisis« character that technical controversy has for economic actors originates. The especially strong need for justification and legitimation results from the fact that the public exposure of business in technical conflict basically constitutes a *moral challenge*.

Moral discourse in technical controversy for the most part is protest discourse. A significant part of protest discourse is the elaboration, mobilization and dramatization of a specific moral conception of the world, of a specific idea of the nature of moral obligation of society in this world. This idea basically is the notion of what should be man's relationship with nature and of what should be done to safeguard public health and safety.

Moral discourse on man's relationship with nature plays a major role in controversies over technologies that have a special power in deconstructing or newly constructing »nature«, such as nuclear technology, modern chemistry, and modern biotechnologies. However, it is also relevant in all those technical conflicts in which the environmental issue is of central

importance. This type of moral discourse argues against the de-moralization of nature, a subjectivist conception of morality, and a scientifically based conception of truth, prevailing societal value orientations which are favorable to technical modernization in highly industrialized Western society. It argues against a world view that has neutralized natural morally and reduced it to the level of a resource for man. It counters the idea of an instrumental relationship with nature with one of a moral, non-utilitarian relationship based on the acknowledgement of an inherent value of nature. In short, it advances an ethicized concept of nature; its central concepts are »respect for naturalness«, »sanctity of life«, »life in harmony with nature«, and »preserving nature's mystery«. This type of moral discourse usually provides the basis for a fundamentalist opposition of technology.

Society's moral obligation in protest discourse is not typically limited to recognizing the inherent value of its natural environment. Moral protest discourse also attributes highest importance to the joint fight against the drawbacks of modern technology which take the form of risks and dangers for public health and environmental integrity as well as for the social and moral order now and in the future. In this line of moral argumentation the protection of the environment is synonymous with the protection of human health from ecological disturbances and the preservation of natural resources for future generations. The political effectiveness of moral protest discourse in technical controversy basically results from the reference to moral obligations regarding danger precaution, risk avoidance, health protection and resource preservation since these are societal concerns generally recognized as legitimate. This reference transforms moral discourse from a »soft« political weapon into a »hard« and powerful one.

By being based on an ethicized concept of nature and the principle of conceding priority to the worst prognosis, the moral conception that protest actors advance in technical conflict is related in an antagonistic way to the moral force that technical modernization and the marketplace obtain from the idea of scientific-technical and economic progress (attributing special respect to experiment and risk) and the domination of nature. The form in which it is publicly advanced is not limited to a moral appeal to the technology-promoting and -controlling institutions. It is communicated as a direct accusation of immoral behavior, as moral stigmatization as well. Moral stigmatization means to engage the public's sense of

morality and indignation against the technology's proponents. The major target of moral stigmatization is industry. As I have mentioned above, this forms part of the strategy of public mobilization. The idea behind this is that the representation of *private profit* as the guiding motive for technology use and associated public exposure to new uncertainties, dangers, and risks is especially suited to mobilizing public pressure against the protested technology. To not fulfill the moral duties one has towards the society of which one forms a part appears especially morally reprehensible when the reason for this misguided behavior is not, for example, political commitment, scientific conviction, or a different idea of the public good but *private utility*. The public is to be mobilized by pointing out not only the winners (industry) and losers (the rest of society) of technology use but by declaring this use a zero-sum-game; the means of mobilization is the »moralization« of industry based on the argument that industry gains at the expense of the rest of society.

Moral argumentation translates abstract technical-scientific matters into issues communicable and attractive to the public at large. It makes them issues of a general public interest and provides them with an element of drama. Therefore, it usually attracts a certain extent of media interest and coverage.

For industry, the public representation of its *moral doubtfulness* means that it is put under severe pressure to take up a position; to think of its industrial technology activities in moral terms and to defend them in these terms. As the next chapter will argue, technical controversy may turn into a battle on the stage of morality.

Man mag über die Öffentlichkeit denken, wie man will, sie ist für das Unternehmen eine gesellschaftliche Realität, die sie berücksichtigen muß. (Röglin & von Grebmer 1988: 40)

2. Business Political Activity as a Reaction to Socio-Cultural Change

To summarize the argument of the foregoing sections: The business political environment of technical controversy is bigger than the formal political system. It includes social protest and public criticism which politicize industrial technology activity by subjecting it to the »public

interest« operationalized as a socially and environmentally compatible use of technology. This, so to speak, »subpolitical« challenge constitutes at the same time a *new form of moralization* of this activity. It is a challenge to justify industrial technology activity beyond market, contractual, administrative or legal obligations.

Since the 1970s, the business political environment of technical controversy has not been an exceptional but a recurrent political context. This holds true at least for a significant part of the highly advanced industrial societies of the Western world. This is due to the fact that the newly developed notion of the public interest as regards technical change since that time is in a process of stabilization as an element of society's ideological structure. The driving force behind this development are the new social movements. It is their policy of mobilization and the institutionalization of this policy in the form of a new social movement sector which has given rise to a different and much more critical attitude towards technology in society at large.

Business organizations that, due to these developments on the occasion of the introduction of new technologies or realization of specific technology projects, get involved in public conflict and are subjected to wide public exposure are plunged into a »crisis of legitimation«. That is to say, technical controversy is a societal situation in which the fact, that legality and ethics of the marketplace - the traditional legitimation basis of economic activity in general and industrial technology activity in particular - no longer exhaust business social legitimacy, becomes manifest.

The following sections discuss the five types of business political activity distinguished - corporatist and post-corporatist negotiation, informatory education, confidence-building, identity-building (see point III.2) - as industry's action repertoire for managing this situation of crisis. In doing so they take a historical perspective and explain the increased importance of the public arena as an arena of industrial political activity, the different importance attributed over time to informatory education and confidence-building as the two major types of industrial political activity in this arena, and the political use made of post-corporatist negotiations and a value loaded but »self-confident« and »offensive« type of public communication, identity-building, as more recent developments in industrial political behavior, against the specific business political environment of technical controversy and more general contextual conditions, on the one hand, and *learning processes* on the side of industry, on the

other. This learning process concerns above all the realization of the »constraint-character« of public commitment to the idea, generated by new social movements, of how to deal with technology.

The exposition seeks to show that the problem of legitimacy is an especially difficult one for industry because of its intangible, cultural qualities. A basic assumption underlying the exposition is that, in undertaking political action, business organizations act in accordance with their perceptions and interpretations of their environment. Business actors are assumed to construct rationales for their political behavior on the basis of how they view the »world«.

2.1 Constructing New Forms of Business Political Action: Business Goes Public

What is at stake in technical controversy for the publicly exposed industrial enterprise or industry is financial and time resources, and cultural resources in terms of »corporate/industrial identity«, in the short term; in the long-term, it is the power to impose industrial technology policy built on the principle of the highest possible economic efficiency (economic principle) on those protesting against the priority attributed to this principle in technology development and use. One option to limit expenses and maintain or build power is to enter into negotiations with the challengers themselves in order to control and defuse opposition, for example, by compromising on matters of secondary importance. In the 1970s and the first half of the 1980s, that is, at a time when technical controversy was still a relatively new experience for industry and technology protest was pure confrontation, this type of »interorganizational« negotiation was not seriously discussed as an option for industrial political action. In the light of deepseated polarization, any communication with the challengers not only appeared to be doomed to failure; on the assumption that the negative public opinion was a mass media construction rather than a true picture of public opinion, and that public acceptance was a matter of cognition or emotion rather than a change in values, it also appeared as the less efficient method.

The more efficient strategy is seen in warding off the political and moral challenge by engaging in public opinion formation. Public opinion-formation is deemed an efficient way to assure industry power, above all, as it is supposed to increase industry's bargaining power against the state. In *public conflict* generated and promoted by a social actor that has public

mobilization as its major strategy, that is, in a situation manifestly lacking consent as regards the nature of a legitimate solution to the problem matter, this power is significantly restricted. That is to say, industry finds itself in a situation in which state support can no longer be optimally assured by justifying industrial technology policy, against third party opposition, to the established players of the political game. It requires justification to the very carriers of these interests as the basis of industry-friendly *and* socially acceptable political decision-making. While, for example, in wage disputes or debates on protective duties, state support for long-term interest assertion can be reached by bargaining with the state and the big interest groups alone and social acceptance of interest assertion may be secured by institutionalized negotiation procedures only, in technical controversy this state support and social acceptance presupposes *innovative forms of political action.*

The two basic new forms of political action that industry developed in the course of the 1970s and 1980s were carefully directed public education, on the one hand, and a (re)production of public confidence, on the other.

2.1.1 From Cognitive and Emotional Mobilization to the Building of Confidence

The logical basis on which informatory education and confidence-building as new types of industrial political activity are built is not, in the first place, an abstract rationality, that is, clearly defined calculations of how efficiently different forms of action are able to create a climate of public opinion favorable to industry interests[7]. Instead, it is a rather unclear perception of the nature of industry's wider socio-cultural environment, of the way in which people form attitudes on technology and industrial use of technology and the role that protest actors, the mass media, and politics play in this formative process and, more generally, in the construction of *the* public opinion.

[7] *Abstract rationality* refers to the concept of rationality employed in classic economic theory. According to this concept, the choice of an action alternative is rational when it can be determined as the most favorable means for the achievement of the end at which the action is aimed. The basic assumption as regards rational and efficient behavior is that actors always precisely know the results of different action alternatives. In a sociological perspective, however, I shall emphasize the *loose coupling of action decision and action result* and the fact that a result can be achieved by different action alternatives.

In the heyday of controversy regarding the peaceful use of nuclear energy - so to speak, the birth of a new societal perspective on technical modernization - and up to the mid 1980s the prevailing industrial view was that technology/industry-critical public opinion was basically made up of the reproduction of protest discourse in the mass media and diffuse, »irrational« fears of a minor part of the population resulting from either ignorance and insufficient information or misinformation due to a negatively biased mass media reporting. The political strategy built on this perception consisted of feeding »factual-objective« information into public discourse. The provision of sound and sufficient information was meant to counter protest mobilization by providing a cognitive basis on which »rational« - that is to say, positive - attitudes on technical matters could be built.

As public discourse focusses on the topic of risk, the imparting of »knowledge« basically takes the form of information about the »real« nature of technical risks; of their *technical* nature, their controllability, and their existential necessity. Industrial actors in seminars, lectures, exhibitions, brochures, newspapers, and issue-related articles supply opinion makers and the interested/concerned public with information on risks associated with nuclear energy, modern biotechnologies or industrial chemistry.

In this period of time, public approval in the first place was to be produced by recourse to *scientific-technical rationality*, messages of *technical safety* and the *symbiotic relationship between technical modernization and societal progress*. In short, it was to be produced by mobilizing the *ideology of progress*. The basic assumption underlying informatory education was that, except for the new social movements, societal consent built on this ideology was still existent. The not untypical representation of technology protest as incompetent, incoherent, emotional, irrational, politically motivated and ideologically impelled has to be viewed against the background of this assumption.

The following statement by one of the managing directors of the German Bayer AG on the occasion of a press forum of the multinational on "Gentechnik bei Bayer" captures well the strategy of informatory education and the »situation analysis« upon which it is based:

> Trotz der vielversprechenden Zukunftschancen, welche die Gentechnik für Wissenschaft und Wirtschaft bietet, ist die Akzeptanz dieser Technik in der deutschen Öffentlichkeit beängstigend schlecht. Die Gründe hierfür sind Unkenntnis, falsche Vorstellungen und daraus resultierende Ängste. Das liegt vor allem auch daran, daß die industrielle Gentechnik, die wir nutzen, begrifflich mit möglichen Anwendungen in der Reproduktionsbiologie am Menschen und anderen humanmedizinischen Aspekten vermengt wird. Ideologische Randgruppen, die den technischen Fortschritt

> aus Prinzip bekämpfen, tragen zur weiteren Verzerrung des Meinungsbildes bei. Zur Verbesserung der notwendigen öffentlichen Akzeptanz der Gentechnik halten wir es für dringend erforderlich, dieses schwierige und mit Emotionen beladene Thema im offenen Dialog - vor allem bezüglich seiner Sicherheitsaspekte - transparent zu machen. Dabei wollen wir sachlich erläutern, welche Maßnahmen wir zur Gewährleistung der Sicherheit treffen. Dies ist ein wesentliches Anliegen unseres heutigen Gentechnik-Presse-Forums. (Büchel 1989: 28)

The assumption that, when all is said and done, the »Fortschrittskonsens« is still unbroken also formed the basis of the »early« confidence-building strategy as employed by the German chemical industry at the end of the 1970s as a supplement to informatory education. At this time, the chemical industry began to develop into the other major target of new social movement industry- and technology criticism, besides the nuclear energy industry. Its response was, so to speak, double-tracked; it consisted of information *and* confidence-building measures. The idea behind this double-tracked strategy was that there was not only a cognitive factor but as well an affective factor involved in the public resonance of the new social movements' modernization-critical perspective. This affective factor was characterized as an *emotional estrangement*, above all, of the part of the public least well educated about industry. This estrangement, it was assumed, produced a loss of confidence which in its turn provided fertile ground for the development of »irrational« fears and prejudices in response to technology protest. These emotional reactions were considered to be most effectively answered on the same level, that is, in the form of a *positive emotional address* by industry.

This address was organized as an institutional advertising campaign with a design similar to the one of classic product and capital goods advertising[8]. The campaign presented a written and pictorial emotional address in the form of »intact world« emotionalism aimed at turning industry into a likeable subject. The placard-style ads depicted the chemical industry's contributions to *individual* well-being, contributions that, the assumption was, were largely taken for granted and not necessarily associated with industrial chemistry. The

[8] The campaign launched in June 1979 comprised ads with the slogan "Chemie. Auf Ihrer Seite" and ads with the slogan "Chemie ist, wenn...". With this campaign the German chemical industry employed for the first time large-sized ads as an instrument of public relations (see the folder *Chemie auf Ihrer Seite. 13 Fragen und Antworten zur Initiative "Geschützter Leben"* produced by the *Initiative "Geschützter Leben" - Aktionsgemeinschaft der Chemischen Industrie*, IGL, the organization of the German chemical industry responsible for image promotion). For more information on the context in which this campaign was launched and its design see my essay on the development of the communication policy of the German chemical industry since the late 1970s (Dreyer 1997).

demonstration of the »omnipresence of chemistry« was meant to convey the image of industry as the people's *partner* in the more or less difficult situations of *daily life*. The personification of the economic actor served to create an emotional and personal relationship with this actor which in its turn was to provide fertile ground for the (re)production of confidence.

This »early« mode of confidence-building relied on the same social-psychological insights as traditional product and capital goods advertising. In contrast to the one developed later, it does not consider protest issues as confidence impairing mechanisms in their own right; the root of all evil is determined to be the impersonal and anonymous image of industry.

Industrial communication organized as an implicit or explicit dissociation from technology protest and designed to create public approval by cognitive or emotional mobilization did not prove very successful, however. This, at least, suggests intensifying and expanding technical debate; apparently, the targets neither gave credit to risk information nor developed sympathy towards industry. Indeed, cognitive and emotional mobilization even seems to have proven counter-productive, to have had the unintended effect of creating an even greater deficit of public acceptance.

In view of this situation, the conviction grew that what was lacking was not so much factual information or emotional relations but confidence in industry's willingness to make those decisions and follow those lines of action which are desirable in terms of societal objectives and values. This lack of confidence was imputed to a protest discourse that resonated not only on the cognitive or affective level but also on the level of political convictions. That is to say, scientific, political and moral protest argumentation was assumed to have mobilized not only a more critical societal attitude towards technology but, more importantly, skepticism about the social desirability and acceptability of industrial technology use grounded on the assumption of a lack of orientation of industry created by this changed attitude. In doing so, the assumption went, it had turned public acceptance into a matter of giving a socially meaningful and compelling rationale to industrial technology activity, a rationale that is able to transform skepticism into a positive attitude. In view of an ever increasing diffusion of the idea, generated by social movements, of a socially and environmentally compatible steering of technical change, it was further assumed that giving such a rationale implies special commitment to the values upon which this idea is based. The

new perspective on industry's political environment thus determined protest issues as confidence-harming mechanisms in their own right and suggested that the »ideology of progress« was no longer an adequate instrument for mobilizing public approval.

As a consequence, industrial public communication was reorganized. Public communication was increasingly designed as confidence-building communication; as communication which by presenting industrial technology policy as committed to the values of a clean environment, safety, health, and participation operationalized as *public dialogue* was meant to (re)produce public confidence in industry's orientation by the objectives and values of society. Commitment to these so-called »post-materialist« values is communicated face-to-face in the context of Open Day and national and regional discussion events, tours of research or production facilities, and round table talks; and in mediated form, for example, in self-representing and issue-related brochures, issue and institutional advertising[9], and codes of conduct. The »institutionalization« of commitment in terms of *codes of conduct* is meant to build trust by documenting the normative, obligatory character that the values have for industry.

Confidence-building[10] communication did not replace informatory education. However, the latter lost its dominance as a strategy of approval production. Its instrumentality was viewed as dependent on the successful use of the former method understood as the creation of that confidential relationship in which industry's information is given new credit.

Industry's new »situation analysis« and communicative strategy is captured by the following two statements of top managers of the German chemical industry:

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[9] Examples of mass media confidence-building communication presenting the way in which industry deals in a socially responsible way with technology and industry's willingness to make public its technology policy, are a range of ads run by the *Verband der Chemischen Industrie* (e.g. on core technologies, genetic engineering, chlorine technology) forming part of the ad series that have been run by the association since 1990 under the slogan of "Chemie im Dialog" (see appendix II. pp.277-279); ads by the three big chemical enterprises *Bayer*, *Hoechst* and *BASF*, e.g. on agricultural technology and genetic engineering (see appendix II. p.280); and the ad series run by the German *power-producing industry* in 1996 entitled "Initiative Energievernunft" (see appendix II. p.281). A further example of industrial confidence-building communication are the yearly VCI-run ad invitations for the chemical industry's Open Day; these ads were not expressly technology-related, but conveyed the message of the sector's general openness, transparency and public accountability (see appendix II. p.282).

[10] From this point onward, communication in the confidence-building mode will refer to this value-based communicative strategy as opposed to the earlier emotion-based strategy.

> Viele Anzeichen sprechen dafür, daß auch unsere Mitbürger im Zeichen des sogenannten Wertewandels einen *neuen Dialog* über die Chancen und Risiken der Industrieproduktion führen möchten. Wesentliche Voraussetzungen dafür sind *Transparenz und Dialogfähigkeit*, aber auch Kompromißbereitschaft bei allen Beteiligten. (Weise 1988: 66; emphasis in original[11])
>
> Von der Chemie werden entscheidende Beiträge erwartet, wenn es um die Lösung der großen Aufgaben unserer Zeit geht. Das gilt sowohl für die Ernährung einer rasch wachsenden Menschheit, die Bekämpfung von Krankheit und Leiden sowie die Sicherung unseres Wohlstandes. Nicht zuletzt ist die Chemie für die Erhaltung einer intakten, lebenswerten Umwelt gefordert. ... Wir haben ... die unbestrittene wissenschaftliche und technische Kompetenz, für alle diese Bereiche wesentliche Leistungen zu erbringen. ... Es genügt aber nicht, ... technisch und wirtschaftlich erfolgreich zu sein. Die Menschen wollen davon überzeugt sein, daß wir bereit sind, aus Fehlern zu lernen, daß wir verantwortlich denken und handeln. Dies zu zeigen, darin besteht das zentrale Anliegen unserer Politik des Dialogs. (Strenger 1991[12], quoted in Ueberhorst & de Man 1992: 45)

2.1.2 Public Dialog and Post-Corporatist Negotiation

Risk communication in the educative mode with its focus on safety for man and environment also makes reference to safety, health, and a clean environment. However, it seeks to prove commitment to these values by scientific reasoning and determines the limits of commitment basically as the limits of what is scientifically and technically possible. Confidence-building communication, instead, seeks to prove commitment by socio-political reasoning and declares the limits of commitment open to learning processes and processes of consensus-building in dialogue with the public. Its key message is that industry is committed to these values not as a technical expert but as an institution with *socio-political responsibility.*

To use technology in a socio-politically responsible way is not merely defined as both protection and promotion of a sound environment, health and safety. It is also defined as subjecting technology use to *public control* and *public dialogue.* Industrial socio-political responsibility is basically defined as the recognition of *public accountability.* The key concepts used to communicate the acceptance of such a responsibility are *openness,*

[11] Weise stated this as president of the co-ordinating committee Toxicology/Ecology of the VCI, the trade association of the Chemical Industry.

[12] Strenger made this statement as president of the VCI.

transparency, public dialogue, and readiness to build consent.

The acknowledgement of industrial public accountability is documented, for example, by the organization of Open Day events and discussion events for specific targets[13], tours of industrial facilities, the ready provision of informational material, or ad-integrated appeals to enter into dialogue with the industrial actor by letter or electronic media. Since about the late 1980s, documentation of public accountability has gone beyond this relatively diffuse and noncommittal public representation. The publicly exposed individual corporation as well as its trade associations have also entered into *direct negotiations* with the main »antagonist«, that is, into more structured, result-oriented communication with local or national protest actors. These »post-corporatist« negotiations range from rather informal and irregular meetings - organized, for example, with the resident citizen action committee on the occasion of technical innovation in order to negotiate about safety measures or the choice of testing grounds - to »round table« negotiations, that is to say, negotiations that have a higher degree of »proceduralization« and are institutionalized for a certain or indefinite period of time[14].

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[13] In *Germany* it is above all the *VCI* which has discussions on technology matters with selected targets - journalists, teachers, environmental organizations - as an integral part of its communication politics. However, such discussions are not only organized on the level of the industrial association. In *Denmark* the company *Novo Nordisk*, an ancillary industry in the food sector and an important producer of industrial enzymes, organized five two-days-meetings with different public interest and established interest groups between 1991 and 1995 in order to discuss general corporate and technology policy; the production of genetically engineered enzymes, for example, formed a central discussion topic (Behrens, Meyer-Stumborg & Simonis 1996). On the occasion of an invitation to a workshop on genetically engineered foodstuffs and questions of labeling organized by CEAT (Clearing House of Biotechnology) and the German environmental organization BUND in October 1994 in Brussels, Novo Nordisk expressly pointed to the dialogic stance that it takes towards the public: "Im wesentlichen ist das, was gebraucht wird, ein Dialog mit dem Ziel, einen Konsens zu erreichen. Das wichtigste Prinzip dabei ist Offenheit, das ist ein Schritt hin zur Transparenz" (Mahler 1995: 31). In *Switzerland* the chemical enterprise *Ciba-Geigy* has for some time been leading a "Risiko-Dialog" with different corporate publics and potential or manifest opponents of corporate policy either in general or related to technology; here a central subject has been the construction of a bioengineering school (Thielemann 1994b: 136-137).

[14] The Unilever "Genetic Engineering Dialogue" and the "Gesprächskreis Hoechster Nachbarn" which have been already mentioned above are examples of such »round table« negotiations (these two round table procedures are described in more detail in the case study, see Part B, point III.2.4.2). Another example are the negotiations between the German cultivation company Klein-Wanzlebener-Saatzucht and critics and opponents of the use of genetic engineering in agricultural production. Note, that there is a research project funded by the German Research Association (Deutsche Forschungsgemeinschaft, DFG) on company initiated dialogues. The project, entitled "Unternehmensdialoge als besondere Verfahren im Rahmen der Gestaltung der Umweltbeziehungen", understands "corporate dialogue" as a "third kind" of relation formation between enterprises and the public (besides information and persuasion) (Niedergesäß & Rettberg 1995: 32).

The aim of such negotiations in the noninstitutional political arena is to create support on the side of the larger public and »tolerance« on the side of the local and national protest actors by, so to speak, giving empirical proof of the company's/industry's willingness to plan and perform its technology policy by using continual »feedback« with its direct and wider societal environment. The decision of corporations to engage in this more binding »societal dialogue« has to be seen against the following facts: First, confrontation does not prove very successful as a strategy of warding off technology protest. Second, the increasing diffusion of protest ideas and arguments into the political institutions transforms these actors from a political fringe group into a significant political factor; to control this factor by public opinion-formation only appears increasingly difficult. Third, a part of technology protest signals (limited) willingness to co-operate (also due to the experience that the strategy of confrontation is only of limited efficiency). Fourth, efforts to settle conflict by interorganizational negotiation - »round table talks« is the key word - currently enjoy highest societal legitimacy. Due to these facts and the fact that a confrontationist stance as regards technology protest is hardly compatible with the overarching idea of »public dialogue«, post-corporatist negotiation has presented itself as a form of political action worth testing.

2.1.3 Identity-Building: Engaging in Moral Discourse

For the individual corporation that has dialogue-orientation as its overall public communication strategy and that enters into negotiations with some of its challengers, it is hardly possible to simultaneously publicly confront technology protesters without risking undue loss of credibility and efficiency of its overall political strategy. To do so via the more »intangible« and less directly exposed trade association, however, may appear as a promising action option, at least, when the contextual conditions are especially favorable. This is demonstrated by the Swiss and German[15] genetic engineering controversy and shall be

[15] Though not as moralistic and openly confrontative as the VCI's communication campaign, the campaign that was run in late 1991 by the *Interpharma*, the trade association of the three big Swiss chemical enterprises Ciba-Geigy, Sandoz, and Hoffman-LaRoche, via the "Gen Suisse - Die Schweizer Stiftung für eine verantwortungsvolle Gentechnik" also can be classified as identity-building communication. Brochures, placards, and ads not only expound in euphemistic terms the opportunities that genetic engineering provides to combat disease - cancer, Aids - and environmental pollution - e.g. by the use of genetically engineered pesticides (Müller 1992; see appendix III. p.284) - but present the technology as more or less the only chance that society has to

exemplified here by the German case.

In late 1992, at the outset of the *downswing phase* of the German rDNA controversy and at a time of growing *economic recession* (that is, at a time when the public and politicians blamed industry and at the same time placed great hopes in it and, in doing so, provided it with a relatively strong political position), the trade association of the German chemical industry launched the "Meinungs-Offensive Gentechnik", an advertising campaign made up of positional, moralistic, confrontationist statements (see appendix III. p.283)[16]. With these statements industry countered moral protest discourse on the same argumentative level, it engaged in a *moral counter-discourse.*

This moral counter-discourse was based on both »materialist« *and* »postmaterialist« values, that is, it »moralized« technology opponents on the very values upon which this opposition was based. Opposition was accused of immoral behavior by impeding the use of technology for the creation of a better quality of life: of a cleaner environment, healthier people, and increased job security. Industry's moral counter-discourse is to mobilize support by offering the opportunity of moral identification on the basis of »old« *and* »new« societal ideas of what constitutes »societal progress«.

Moral accusation was not formulated as a direct address. Indirect confrontation of the nature of the following two statements was given preference:

> Wer heute noch die Chancen der Gentechnik verhindern will, handelt unverantwortlich.
> Gerade die Umweltbewußten müssen sich vehement für die Gentechnik einsetzen.

It is the polarized structure of terms - euphemism as regards the contributions of genetic engineering and industrial use of this technology for the public good and cacophonism as regards the effects of a non-use of the technology on that public good - which morally downgrades the protest actor and morally upgrades the economic actor. Industrial communication in the identity-building mode constitutes, so to speak, a *dramatic enactment* of industry's socio-political responsibility and, at the same time, a dramatic enactment of the

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cope with these problems. Expressly for its communication campaign the *Interpharma* arranged for the foundation of the association "Gen-Suisse" consisting representatives of the major societal sectors (Ibid.).

[16] This campaign is described in more detail in the case study. See Part B, point III.2.4.3.

antagonist's socio-political irresponsibility.

2.2 Business Political Activity as Strategic Action Under Socio-Cultural Constraint

The concern of the preceding sections was to show that in countries such as Switzerland, Austria, Denmark, the Netherlands and Germany, industrial organizations are faced with a *special political challenge.* This challenge originates from *civil protest actors* who are organized to promote collective benefits for society in general and publicly attack industrial technology use as individual utility against which these collective benefits have to be protected. The political challenge these protest actors present to industrial organizations consists, on the one hand, of direct economic effects such as a decrease in stock prices or increased expenditures for consultants. It consists, in the first place, however, of indirect economic effects such as absorption of time and man power, delays in the approval of production facilities and new products, demoralization of staff members and employees, loss of public trust and credibility, impairment of industry's negotiation power against the state and the constant threat of restrictive regulatory action which implies unfavorable conditions for investment activities.

To effectively meet this challenge, it is not sufficient to rely on power and money as the traditional means of industrial environmental control. Instead, what is needed is an additional means of control that is positioned somewhere between *rational discourse and moral suasion* (Willke 1983: 64). What is needed is a special communicative effort, a special endeavor to convince - not merely the established players of the political game but the public at large. What must be made use of in this regard is the public sphere's function as a *legitimatory realm of resonance*[17]. Persuasiveness in its turn cannot be gained by relying on scientific-technical information about technical safety alone. With the dissolution of the societal consent as regards the role that technology can and should play in societal development the exposition of technical safety without exposition of the social objectives and values upon which the definition of safety as well as the very development and use of technology is based is no

[17] The theoretical perspective of the public sphere as a "legitimatorischer Resonanzraum" of institutions is adopted from Rehberg (1995: 184).

longer a sufficient means of convincing. Actually, persuasive power not only requires general exposition of these social objectives and values; what is more, it requires a special commitment to the objectives and value orientations of technology protest, that is, to the grounds on which a generally more critical public attitude towards technology and technical change has developed; it requires special commitment to the idea of an *environmentally and socially compatible technical change.*

Such commitment in technical controversy, I have argued, is not a mechanistic reaction of industry. It is a *learning process* under conditions of cultural change. The learning process consists of the experience that a purely confrontationist strategy towards protest actors and a purely educative attitude towards different industry publics clinging to the traditional convictions concerning technical modernization do not prove efficient. To put it into positive terms: Publicly exposed industrial organizations experience adherence to newly developed convictions as a *social constraint.* Public communication designed to convey the message that industrial technology policy values environmental protection and health/safety as much as, or even higher than economic profitability is the result of the experience of a new *socio-cultural constraint.* That does not mean, that confidence- and identity-building communication does not *also* bank on »materialist« value orientations and scientific-technical rationality. Rather, this new type of public communication is the representation of a new political identity, ideology, and positions that incorporate different and sometimes conflicting societal objectives and values. Industrial public dialogue is the cognitive and communicative effort of developing a positive relation to a *heterogeneous* rather than a homogeneous public interest. When the state as the traditional embodiment of the public interest turns into a welfare and steering state and develops the individual "Interesse an sich selbst" (Willke 1983: 129), industrial organizations, as the traditional embodiment of the individual interest, due to the institutionalization of the idea of an environmentally and socially compatible technical and industrial development had to develop an interest in overall social development.

While this process of institutionalization has plunged industrial organizations into a crisis of legitimacy, it at the same time provides for the possibility of a way out: legitimizing industrial technology activity and (re)creating a consensus with society on this activity by means of framing it in terms of this idea; in frames that are related to dialogue, environment, safety, and health. The possibility of a way out is the possibility to use the idea as a

legitimizing ideology.

Is this to say, that newly developed societal expectations can easily be managed on the level of »rhetorics«, of »symbolic politics« (Edelman 1971, 1988)? To study organizational reaction to such demands in terms of political activity implies highlighting organizational *agency*. It implies stressing that economic organizations do not readily conform to this type of external dictate but act »strategically« in terms of hiding from it or negotiating about it. Publicly exposed industries in technical controversy recognize the framing of industry practice and structure in terms of the idea of a socially and environmentally compatible technical change and negotiation in the framework of this idea as a political necessity. This political necessity, however, is deduced from the objective of keeping the influence of this idea on industrial practice and structure as minimal as possible. At the same time, however, communicative action based on this perception and aimed at achieving this objective produces some extent of self-restriction in the pursuit of original organizational interests. In the final analysis, self-set normative bounds make some extent of restraint necessary. They (re)produce normative expectations behind which industry behavior cannot fall without risking an even greater deficit of credibility. Publicly advanced self-commitments can be prosecuted by opponents at any time and with high public attention and moral pressure. The drawback of industrial political activity in the confidence- and identity-building mode consists of a further loss in credibility and legitimacy, namely then, when industrial practice does not fulfill what industrial communication promises, when it does not proceed on the basis of what it publicly propagates as the moral basis of entrepreneurial action. Sham-dialogue and sham-co-operation, even if it is designed as such, is only possible to a limited extent[18]. To summarize the argument: Industrial »strategic« communication produces a normative pressure for reflection as an action principle and with that an operatively restricted room for manoeuvre. This fact reveals the extent to which the dissolution of the »Fortschrittskonsens« constitutes a constraint on industry behavior - also beyond regulatory action. It means obligations on the level of both industrial communication *and* industrial practice.

[18] Following Thielemann (1994b: 123), sham-co-operation is understood as a situation in which one or more but not all of the participants of an event declared as »co-operation« or »dialogue« merely pretend to be willing to take into consideration the claims of others according to their legitimacy.

The theoretical-analytical framework that has been presented in this first part of the study shall now be applied to a specific case and the propositions just formulated in this framework shall be tested on the basis of this case: This case is the political activity of the chemical industry in the German genetic engineering controversy.

PART B: APPLYING THE FRAMEWORK: THE POLITICAL ACTIVITY OF THE CHEMICAL INDUSTRY IN THE GERMAN GENETIC ENGINEERING CONTROVERSY

This second part of the study expounds the chemical industry's political involvement in the German genetic engineering controversy in the time period between the mid 1970s and the mid 1990s. Its central concern is to explain the sector's political activities and the changes in political involvement that occurred over the specified period of time - as regards extent, choice of arena, argumentative strategies, and communication media - against the background of a political environment that in the course of debate became an increasingly critical factor for the chemical industry. The analysis shows, first, that the chemical industry as a technology utilizer has attracted *public scrutiny* from various angles and actors and from an early stage of the technology's uptake. Second, it demonstrates that this special political challenge has provoked a special political response from industry. Industrial political activity in the course of debate has not only *expanded* and *diversified* but also entered *an advanced stage of organization and professionalization.*

Structure and Contents of the Chapters

Part B is composed of three main chapters. The point of entry of my inquiry into the German rDNA debate and the chemical industry's role as a key participant in this debate is to provide a short portrayal of the chemical industry as a »*technology utilizer*«. Before the *first chapter* points out the economic value of genetic engineering for the sector and the role that the sector has played in the technology's commercialization, it clarifies what is understood in this study by the »chemical industry«. This clarification is necessary as there exists no generally agreed upon definition of this sectoral designation. Then, the chapter looks at the current trends in rDNA technology as used in the chemical industry. Finally, it exposes the *leading position* that the industry holds in the exploitation of genetic engineering at the national and international level and the sector's overall strategies in the technology field.

The *second chapter* provides an exposition of the key factors of the political environment in

which the chemical industry's efforts to develop and commercialize the new technology have been embedded. The exposition covers the time period from the mid 1970s - when the chemical industry began to take an interest in the new technology - until the mid 1990s - when the technology had developed into an integral tool of the sector. The environmental factors looked at are *regulatory policies*, *parliamentary scrutiny*, *social protest at the local and supraregional level*, and a *critical mass media discourse*. The exposition shall point out, first, that the societal controversy about rDNA technology in Germany shows the effects of a process that is taking place to some extent in all highly industrialized countries of the Western world and that has accelerated since the turn of the 1980s: The diffusion of the concern about *technological risk* into the political and legal system. It is due to this process that the established political and legal institutions (and not merely civil protest actors) in the German rDNA debate present a real political challenge to the chemical industry. In Germany, it will be shown, this process is above all reflected and driven by the entry of the *Green Party* into parliament.

The chapter will expound, second, the special challenge that new social movement actors including the Green Party have presented to the chemical industry by organizing in collective protest and bringing direct and indirect pressure to bear on the technology utilizer. In order to expound this special challenge the chapter provides a portrayal of *collective protest* in terms of development, structure, and practice.

The *third chapter*, finally, provides a *phase-based exposition* of the chemical industry's policy on the rDNA issue. It discusses changes in industrial political activity as regards extent, arena choice, argumentative thrust, and interactive nature by relating them to the contextual factors outlined in the preceding chapter. *Four phases* of industrial political activity are distinguished. They are denoted as follows: 1) *corporatist negotiations* (1975-1983), 2) *deliberations at the parliamentary level* (1984-1987), 3) *public education and reassurance* (1988-mid/1990), and 4) *public dialogue* (mid/1990-1994). The empirical focus is on the latter two phases, the phases of continued public appearances of the chemical industry on the rDNA issue. The major concern of the chapter is to show how an increasingly turbulent political environment comprising the political and public spheres has induced the chemical industry to *expand, diversify and professionalize* its political activity. More specifically, I will show how an unfavorably changing context caused the industrial actor to »move forward« into the *public*

arena and to engage in a communicative effort that is aimed at demonstrating *commitment to a socially and environmentally compatible use of the technology at issue.* This communicative effort, it will further be shown, has increasingly taken the form of *direct contacts* and *active discussions.*

The phase-based exposition is preceded by a short portrayal of the major characteristics of the chemical industry as a »policy community«. This portrayal expounds and attempts to explain the special role that *collective action* through the industry association, the Verband der Chemischen Industrie (VCI), has played in the rDNA debate.

I. THE CHEMICAL INDUSTRY AS TECHNOLOGY UTILIZER

The chemical industry is not only the key private sector protagonist in the German genetic engineering controversy, a fact expounded and analyzed in the subsequent chapters. It is moreover the industrial sector which holds a leading position in the development and application of genetic engineering: The private-sector activities in this technology field in Germany have been dominated from the outset by the big, established, internationally active combines of the chemical industry - a fact which obviously has to be seen in relation to the sector's »external« and »internal« politicization. It is this chapter's concern to provide a brief portrayal of the chemical industry as a »technology utilizer«. Before the impact of genetic engineering on the sector in terms of innovation and exploitation is pointed out, it must be made clear what precisely is understood by this industrial sector. Any classification of industries has its arbitrary elements. It has to be made explicit, therefore, what is understood by a specific industrial sector. A clarification of what constitutes the »chemical industry« is the necessary basis of an illustration of the value of genetic engineering for the sector. This basis is provided by the first section of the present chapter. The second section, then, looks at current trends in genetic engineering as applied in the chemical industry. The third section points out the leading position that the sector occupies in the development and commercialization of genetic engineering (at the national and international level). Moreover, it reconstructs the introduction of genetic engineering in the sector in terms of a "nachholende Modernisierung" (catch-up modernization); this is the term which Dolata (1991: 33) has coined denoting the relatively late venturing of the German chemical industry into the field of modern biotechnologies. Finally, it outlines the sector's overall, internationally oriented, strategy in this field.

1. What is the »Chemical Industry«?

In very general terms this question can be answered as follows: The chemical industry is one

of the most internationalized industries[1] with a multifariousness of substances and products[2] which is both capital- and research-intensive[3]. In nation-specific terms it can be replied that the chemical industry is one of the industries which led post-war economic recovery in Germany and today constitutes a leading edge of the economy with around half of all production being exported. According to in-house information, the German chemical industry is the fourth biggest employer among the German branches of industry (the first three ranks are occupied by the machine-building, electrical and automobile industries)[4]; it ranks fifth in sales (the first four ranks are taken up by the automobile, electrical, machine-building and food industries)[5]; it ranks second in investments (the automobile industry ranks first); and it ranks first as far as self-financed investments for research and development are concerned (VCI 1996: 1; see ft.3). Since its inception, the sector has been dominated by its major firms: the giants BASF, Bayer, and Hoechst which form part of the leading chemical firms in the world (Allen 1989: 160).

This short portrayal, however, does not clarify the process- and product-related nature of the industrial sector. The »chemical industry« is a common term in economic and production statistics. As to its definition, however, there is a lack of clarity and significant differences in international comparison. This study, adopting a useful classifying device by Kleine (1984, see also von Osten 1988), defines the »chemical industry« as an industrial

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[1] Today, particularly in basic industrial chemicals but also in fields such as pharmaceuticals, soaps and detergents, manufacture is undertaken in a range of countries by transnational enterprises which think in terms of international rather than domestic markets.

[2] Moreover it is an industry with many levels of production: it produces basic materials as well as semi-finished products and end products.

[3] This holds especially true for the German chemical industry. One of its salient characteristics is a high degree of technical innovation and research and development (R&D) activities, with the latter being self-financed at about 95 per cent (Grießhammer 1993: 35). In 1995, the sector spent about DM 10,4 billion on research into new products (VCI 1996: 2). A breakdown of R&D spending with regard to the three leading companies (for 1992) results in the following figures: BASF spent DM 2.084 million, or 4,5 per cent of sales; Bayer spent DM 3.096 million, or 7,5 per cent of sales; and Hoechst spent DM 2.904 million, or 6,3 per cent of sales (Kümmerle 1993: 5). Together with the electrical and automobile industries the chemical industry belongs to the most research intensive branches of industry in Germany. Since it costs over DM 180 million to research, develop, test, and innovate a new drug, it is the pharmaceutical sector which swallows up the biggest part of the R&D expenditures.

[4] According to information by the chemical industry's trade association, VCI, in 1995 538.000 people were employed in about 1.800 chemical enterprises (VCI 1996: 1).

[5] According to information by the VCI, in 1995 the chemical industry had a turnover of approximately DM 179,8 billions (VCI 1996: 1).

sector which is made up of *four main divisions*. These are the following[6]: The first group covers the manufacture of *basic chemicals* in bulk including inorganic chemicals such as sulphuric acid, slaked lime and ammonia and organic chemicals derived from petroleum feedstocks, such as ethylene, benzene or propylene as well as petrol itself. Basic chemicals are the basis from which a range of subsequent treatments in the chemical industry proceed. The second division is the production of *industrial chemicals* in bulk including for example the production of chemical fibers, fertilizers, synthetic rubber, solvents, and plastic materials. According to the field of application, these economy-priced products, which in most cases are not homogeneous substances but mixtures, are processed and optimized. The third division is the manufacture of *fine chemicals*. These products present basic material or »building blocks« for specialty products and comprise amongst others amino acids, essential oils, and vitamins. Unlike basic and industrial chemicals, fine chemicals are produced in small quantities. The fourth group, finally, covers *knowledge-intensive specialty chemicals*. Among these high-price low-volume products are pharmaceuticals, pesticides, detergents, soap- and cleaning preparations, paints, and catalysts - to note only some of the most important product groups.

Specialty chemicals make up the division in which currently the greatest expansion in the chemical industry takes place. In the 1970s, the German companies faced intensified competition from the big European transnational companies in a period of slow growth. At the end of the decade the big European firms including the German giants made strategic decisions to reduce their dependency on basic chemical production; they decided to switch their emphasis towards global niche markets for specialty chemicals and to working with customers to develop higher-value applications of underexploited existing products (Green & Yoxen 1990a: 479[7], see also Green & Yoxen 1990b: 88). Specialty chemicals promise high *Wertschöpfung* as they are usually produced from relatively cheap source material and are

[6] This rough categorization, as von Osten stresses, is not always unequivocal. The boundaries between the different product groups are fluid, so that assignment of products to one of the groups is often difficult (von Osten 1988: 13).

[7] Green and Yoxen regard this switch to value-added chemicals as one example of the more general trend of the post-Fordist form of production organization which has been dubbed *flexible specialization*. This production organization is based on smaller production units and a more flexible use of labor, with a core of highly-paid skilled permanent workers and a periphery of more disposable temporary, part-time or sub-contracted less skilled workers (Green & Yoxen 1990a: 479).

subjected only to minor fluctuations in demand (von Osten 1988: 19). Especially producers in the highly developed countries decided to increasingly concentrate on these research-intensive products the development of which is strictly application-orientated. As production did shift to new product areas, so did research and development. Since about the late 1970s, one can find in the chemical industry a special emphasis on strategic research into new core technologies such as materials and modern biotechnologies, the results of which are especially useful in pharmaceuticals. With the strategic orientation towards specialty products, modern biotechnologies by the larger chemical companies by that time became to be increasingly recognized as an important tool in the attempt to meet intensifying international competition in the chemical-pharmaceutical sector. Especially high importance came to be assigned to genetic engineering constituting an integral part of modern biotechnologies.

2. The Value of Genetic Engineering

The chemical industry's overriding interest as regards the methods and procedures of genetic engineering clearly is in specialty products with an especially high *Wertschöpfung*. In the case of bulk chemical production and fine chemicals, the new technology is forced to compete with the great potential that conventional methods still offer, and for this reason interest is limited and the degree of innovation likely to be modest (Green & Yoxen 1990a: 479).

In the area of specialty products, growing interest is placed in prospects for *plant breeding*. Large profit is expected from the production of herbicide-tolerant plants and the substitution of a single, broad-spectrum herbicide for the present »cocktail« of selective herbicides which distinguish between a particular crop and weeds. The manufacture of *new additives in consumer products* is another area in which genetic engineering is assigned innovative strength; here, genetically engineered enzymes in detergents are among the most important products[8].

The keenest interest of the chemical industry, however, has been placed from the

[8] In processes, enzymes have considerable potential as biological catalysts, although they are restricted to low-temperature fermentation processes. Biotechnologically produced enzymes are already used for multifarious ends of which detergents is only one example. With the help of genetic engineering it will be possible to substitute chemical synthesis increasingly by biochemical, that is enzymic synthesis with the advantage that the reactions take place in normal temperatures and at atmospheric pressure.

outset, and is still placed, in the application of genetic engineering in the *pharmaceutical sector*. In some cases, early hopes and expectations based on the techniques in this sector have met with temporary disappointments or deferrals - for example anticipations that rDNA produced interferon might provide a general cure for cancer (Bundesministerium für Gesundheit 1993: 11). Nonetheless pharmaceuticals (drugs and human health care) is by far the biggest field of application of modern biotechnologies (this holds true for the German chemical industry as well as for the chemical industry of the whole Western world). The main activities of genetic engineering research and production in the pharmaceutical sector are in the areas of therapy, prophylaxis and medicinal diagnostics. While in the plant breeding sector, into which genetic engineering was introduced relatively recently, the technology's commercial exploitation is still being awaited - no product so far has been introduced to the market - a number of pharmaceutical products made with the help of the new technology have already entered the market.

In the pharmaceutical sector, genetic engineering in the course of the 1990s has clearly surpassed the status of a »niche technology« (Dolata 1997: 14). Despite these remarkable economic dynamics, the use of genetic engineering techniques in pharmaceutical research and production is characterized by astonishing ambivalences. The predominant portion of the marketed recombinant therapeutics and diagnostica still have a substitutive rather than innovative character. That means, genetically engineered products such as insulin, blood clotting Factor VIII preparations, growth hormones or hepatitis-B-vaccines substitute and improve preparations already on the market and produced with traditional techniques. On the other hand, the development of really new products up to now has remained limited to a few exceptions such as recombinant erythropoietin (EPO), a haematogen hormone. This does not mean, however, that the use of genetic engineering in the pharmaceutical sector still is not a profitable business. The first recombinant products of some of the German chemical enterprises today prove lucrative. The products' sale yields a significant part of the turnover of these companies and has already retrieved the high expenses for research and development (Ibid). At the international level, in fact, some of the marketed products meanwhile are counted among the so-called »blockbusters«.

In other fields of application, the first commercial breakthroughs still are missing: On the basis of the present state of research in the agricultural sector, economically utilizable

results on a larger scale should be expected only in the medium or long-term[9]; in the area of bulk chemical production, decisive economic breakthroughs are not in the offing at all (Dolata 1995: 20).

Indeed, the general rate of introduction of genetic engineering products (world-wide and with regard to all industries involved) has been much slower and the general rate of commercialization much lower than predicted in the early 1980s. At that time, particularly promoters of biotechnology-based companies competitively and inevitably over-emphasized the »dramatic significance« and supposedly imminent commercial opportunities which would result from the revolutionary widespread diffusion of the new technology. In view of the developments since then, the initial euphoria has given way to more sober (and realistic) assessments (Green & Yoxen 1990b: 4)[10]. A view has emerged that fewer branches of industry than originally anticipated can expect to gain significant commercial advantages from the introduction of genetic engineering and that only very few companies will in fact enjoy a comfortable return on their genetic engineering investments[11].

Despite the fact that genetic engineering has failed to some extent to live up to its early promise and still is not far advanced in its technological and economic life circle, the German chemical industry does not believe that this has taken the edge off the potential of the technology. On the contrary, particularly the giant companies regard genetic engineering as indispensable to future corporate success on the national and international markets; they have accorded it a privileged position in their research and development priorities.

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[9] Research and development activities in the research laboratories of the chemical industry, however, are of considerable scope and the number of field trials with transgenic plants is steadily growing.

[10] The noisy »hype« of the early 1980s is not untypical of the initial stage of scientific-technological innovations; at this stage potentialities and expectations associated with the innovation are often projected to completely exaggerated forecasts, in which retarding aspects, such as imponderabilities and alternatives of the research process, difficulties concerning the introduction of new products and processes or stoppages due to societal opposition and acceptance problems, are underrated or totally overlooked.

[11] Indeed, still today, as Spangenberg (1994: 31) points out, it is a difficult task to make sound economic stocktaking and forecast turnovers. On the one hand, in the case of many genetic engineering activities in basic research it is hardly possible to anticipate which technical and economic relevance these will have in the future. On the other hand, the relevant statistics do not report traditional biotechnology and genetic engineering in clear differentiation, neither for research and development nor for production (Ibid).

3. Technological Leadership at the National Level - »Catch-up Modernization« at the International Level

The multinational chemical enterprises of the Western world hold a leading position worldwide in the development and application of genetic engineering, particularly in the pharmaceutical sector but also in plant breeding (Spangenberg 1994: 32). Likewise the giant German chemical companies play the decisive role in the development and commercialization of genetic engineering at the national level[12]. It is a salient characteristic of the German development that from the outset the private-sector activities in the field of modern biotechnologies have been driven and dominated by the big, established, internationally operating combines of the chemical industry[13]. Newly founded biotechnology firms, in the United States initially the driving force of the bio- and gene technology development[14], one could hardly find in Germany in the beginning. After a small wave of foundations in the mid 1980s, these firms have remained of minor economic importance[15].

The core group of companies involved in research and/or production in the field of

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[12] To correctly conceive of the German chemical industry's role in the commercial exploitation of genetic engineering, it is important to recall that the production of pharmaceutical products is in substance as well as economically part of the chemical industry. In Germany it amounts to about fourteen to fifteen percent of the total production value of the industrial sector. The pharmaceutical production is highly concentrated and usually an integral part of the (substantially broader) product line of the big chemical companies such as Bayer, BASF, and Hoechst. It is also important to note that the major German chemical companies are among the twelve agrochemicals producers with the biggest sales rate in the world and produce between five and thirteen per cent of their total sales in the agricultural sector. As such, they also conduct big parts of biotechnology and genetic engineering oriented research and development in the field of agrochemicals (Dolata 1991: 25).

[13] There has been another decisive driving force: the national government. By acting as a co-ordinating *Klammer* of emerging research networks and via the drawing up of multi-year research and development programmes, it has exercised a certain amount of influence on the pace of technological development and industrial involvement.

[14] In the United States, early commercialization in the late 1970s was accompanied by a mushrooming of these small venture capital companies, most of which were dealing almost exclusively with research rather than with development, production, marketing, etc., and the main function of which was to accelerate the transition from basic research to industrial production. In the US these firms decisively stimulated scientific and technological development in the field of modern biotechnologies. Today, however, also here the technological development has come to be dominated by large transnational corporations. The innovative, small biotechnology firms have formed an alliance with large pharmaceutical and chemical corporations that have entered the biotechnology field to establish the Biotechnology Industries Association (see Baark & Jamison 1990: 41).

[15] Besides specialty products these firms concentrate on research under contract and *Serviceleistungen* (examples are the firms Diagen, Orphegen or Progen). With the exception of Sweden and Great Britain, newly founded biotechnology firms in other western European countries have played and continue to play only a minor role.

modern biotechnologies in Germany includes - besides the three chemical giants BASF (via its pharmaceuticals-subsidiary Knoll), Bayer, and Hoechst (with the French subsidiary Roussel-Uclaf)[16] - on the one hand the big chemical companies Schering, Boehringer Ingelheim and Boehringer Mannheim[17]; like the three giants these companies in the course of the 1980s set up or extended their own biotechnical working teams and departments. On the other, it comprises a number of established medium-size enterprises concentrating their activities on the pharmaceutical sector where they usually serve market niches (e.g., Biotest and Dr. Rentschler), complemented by the Kleinwanzlebener Saatzucht (KWS) which is the only larger enterprise of the German plant breeding and seeds industry that occupies a special position in the field of modern biotechnologies (Dolata 1995: 101).

Thus, in Germany, it can be noted, the big companies exploring and applying the new technology's potential belong to the chemical industry. With their decision - partly taken in the early 1980s, partly in the second half of the 1980s - to start to extensively qualify their know-how in the area of modern biotechnologies and to firmly establish their starting position in the struggle for future markets, a marked priority-setting occurred in Germany in favor of modern biotechnologies. With regard to the overall *strategies* of these big firms, the studies of Dolata (1996, 1995, 1994, 1991) have pointed out three main particularities: First, (with the exception of Boehringer Mannheim) the companies do not belong to the early pioneers. Especially in comparison to their US competitors, they have entered relatively late into the genetic engineering field[18]. The companies' policies of reorientation and concentration in the course of the 1980s on a technology field that for a long time had been widely neglected, Dolata denotes as "catch-up modernization" (*nachholende Modernisierung*, Dolata 1991: 33). According to the author these policies indicate a (late) correction of course, which was based on the fear of »missing the boat« in the sense of a trend-setting technological innovation rather than the expectation of imminent gains in a new field of expansion (Dolata 1991:

[16] The German big three are the three largest chemical companies (followed by the UK's ICI) of the nine EU based firms which belong to the world's fifteen largest chemical companies (Green & Yoxen 1990a: 478).

[17] With the exception of Knoll all of these companies belong to the fifty pharmaceutical companies with the biggest sales rate in the world.

[18] Already in 1982, only eight years after the first publication of a successful genetic modification, the US multinational Eli Lilly started with the industrial production of the first genetic engineering product, human insulin (on the basis of a license of the biotechnology company Genentech).

31ff.). Since then the big firms have undertaken a great endeavor to catch up with international technological development and to improve their starting position with regard to the decisive future markets - especially with regard to the US market. This points to the other two particularities in terms of strategy. These are, on the one hand, the *resort to research resources and know-how of the United States* which results in a range of US-commitments and a strong dependence on US-patents. Closely linked to this is, on the other hand, the focus of all entrepreneurial strategic approaches on an *international extension and differentiation of research and development activities*. These take the form of innumerable co-operations particularly with US biotechnology firms and research facilities, specific buying-ups and new company-owned research centers in the United States and increasingly also in Japan. Possibly no innovation before genetic engineering has been driven so intensively on the basis of worldwide strategies[19] (for an overview of the international activities of the big German chemical companies see table 2 by Dolata 1994).

This international strategy, Dolata points out, is primarily aimed at gaining a foothold in the locality of the leading research centers of the new technology, worldwide tracing and acquisition of know-how as well as being positioned in the main markets of the competitors if possible with the whole chain of research, development, production, and marketing (Dolata 1995: 23-24). It forms part of a more general process of internationalization of big industry, a process which in the mid 1990s is discussed under the heading of »globalization«[20]. According to Dolata, the frequently advanced assertion that the numerous co-operations, participations, buying-ups and investments particularly in the United States would be linked to a significant drain of genetic engineering research and production from Germany up to the present cannot be born out. National capacities would not be reduced to the advantage of

[19] Dolata uses the term "regional duality" (regionale Dualität, Dolata 1991: 19-20) to describe this strategic orientation which is distinctive of big industry's involvement in most western European countries. "Regional duality" refers to the fact that, on the one hand, the companies are involved in multifarious ways in technology related development in their home countries: They participate in the drafting of national research and development programmes and avail of the supportive measures of their governments; they are integrated in the setting up of national research complexes and expand their gene technological research and production basis at these traditional business locations - and, on the other hand, they are engaged in the setting up a research and production infrastructure abroad.

[20] It is Dolata's main thesis that the biggest part of the chemical-pharmaceutical industry's genetic engineering commitment abroad is a consequence of internationally oriented corporate strategies and *not* the result of an unacceptable research and production environment at home. The author argues against the popular argument that this global commitment would be a well-considered flight from tedious German approval procedures, overdrawn bureaucracy and public participation (Dolata 1995: 24).

capacities abroad but the extensions abroad would be added to the national capacities. The research priorities and competences, however, would be redistributed at the global level, which would inevitably relativize the importance of the domestic centers (Dolata 1995: 22).

To recapitulate, in Germany the innovation dynamics in the area of modern biotechnologies from the outset have been determined by the big companies of the chemical industry. Genetic engineering offers this industrial sector considerable innovative scope - particularly in the pharmaceutical and plant breeding sector - and since the early 1980s the industry has been seizing this opportunity. It does not only invest in corresponding research, development and production at the national level but expands research and production capacities world-wide.

In what follows the international level is left aside. The next chapter looks at the *national political and socio-political context* in which the chemical industry has been seeking to capitalize on the new technology. How supportive or how critical has this context been?

table 2: The German Chemical Industry's International Genetic Engineering Activities

Konzern	Umsatz Konzern 1993 (Mrd. DM)	davon: Pharma/ Gesundheit (Mrd. DM)	F&E-Aufwand 1993 (Mrd. DM)	davon: Pharma/ Gesundheit (in %)	F&E 1993 (Mrd. DM)	Forschungs- und Produktionsverbeben	Forschungs- und Produktionsorte	wichtige Kooperationspartner
Bayer	41,0	9,6	3,2	44	0,1	Faktor VIII (Kogenat), TNF (Tumor-Nekrose Faktor), Prulastin, Gentherapie zur Behandlung der Hämophilie A, Diagnostika, Pflanzenschutz	a. in Deutschland: -Leverkusen: wissenschaftliches Zentrallabor -Wuppertal: Pharmaforschungszentrum -Monheim: Pflanzenschutzzentrum b. in den USA: -West Haven: Pharmaforschungszentrum/ 81-16chter Molecular Diagnostics/Therapeutics -Berkley: Pharmaforschung und -produktion (Faktor VIII) c. in Japan: -Yuki City: landwirtschaftl. Forschungszentrum -Kyoto: Pharmaforschungszentrum (in Bau	a. in Deutschland: - Institut für Genetik, Universität Köln - Max Planck Institut für Züchtungsforschung, Köln - Gencentrum Köln - Hoechst (AIDS Forschung) - verschiedene Saatgutfirmen b. in Europa: - Pharmaceutical Proteins, Schottland c. in den USA: - Yale University, West Haven - Massachusetts Institute of Technology, Cambridge - Rochester University, New York - Chiron - Celltech - Genetic Systems - Viagene
Hoechst	46,0	11,3	3,0	62	keine Angaben	Humaninsulin, EPO (Erythropoietin), Hirudin, GM-CSF (regt die Bildung weißer Blutkörperchen an), Pflanzenschutz, Tierimpfstoffe	a. in Deutschland: -Frankfurt/M.: Zentralforschung, Insulin-Produktion -Behringwerke, Marburg: EPO-Entwicklung b. in Frankreich: -Roussel-Uclaf, Paris: Hirudin-Entwicklung c. in Japan: -Kawagoe: Pharmaforschungszentrum d. in Australien: -Biotech Australia: Tierimpfstoffe e. in den USA: -Somerville: Institut für Molekularbiologie	a. in Deutschland: - Gencentrum München - Gemeinschaftsunternehmen mit Schering: Pflanzenschutz - Bayer (AIDS Forschung) b. in den USA: - Massachusetts General Hospital, Boston - Biogen - Chiron - Genentech - Genex - Immunex - Synsre - Integrated Genetics
BASF	40,6	2,0	1,8	18	keine Angaben	TNF (Entwicklungsarbeiten 1993 eingestellt), Thrombosen-Prävention	a. in Deutschland: -Ludwigshafen: Hauptlaboratorium BASF/ Pharmaforschung Knoll b. in den USA: -BASF Bioresearch Corp., Boston: Pharmaforschungszentrum	a. in Deutschland: - Zentrum für molekulare Biologie, Universität Heidelberg - Max-Planck-Institut für Medizinische Forschung, Heidelberg
Schering	6,4	4,1	1,0	81	0,07	beta Interferon (Betaseron)	a. in Deutschland: -Berlin: Institut für Zell- und Molekularbiologie b. in den USA: -Berlex Biosciences, Richmond: pharmazeutisches Forschungszentrum	a. in Deutschland: - Gemeinschaftsunternehmen mit Hoechst: Pflanzenschutz - Institut für gentechnologische Forschung, Berlin (bis 1996) b. in den USA: - Zenagen
Boehringer Ingelheim	6,7	4,8	1,0	90	keine Angaben	t-PA (Actilyse; löst Blutgerinnsel)	a. in Deutschland: -Dr. Karl Thomae, Biberach: t-PA-Produktion b. in Österreich: -Forschungsinstitut für Molekulare Pathologie, Wien -Bender & Co., Wien	a. in den USA: - Genentech b. in Österreich: - Universität Wien
Boehringer Mannheim (Gruppe Deutschland)	2,3	2,0	0,6		0,1	Diagnostica, EPO (Recormon), t-PA	a. in Deutschland: -Penzberg: bio- und gentechnisches Forschungszentrum, Produktion von EPO	a. in Deutschland: - Max Planck Institut für Biochemie, Martinsried - Gencentrum München - Universität München - Universität Regensburg b. in den USA: - Genetics Institute - Protein Design Labs - CellPro - Ribi

Quelle: U. Delata, Internationales Innovationsmanagement. Die deutsche Pharmaindustrie und die Gentechnik, Hamburg 1994, S.341

II. THE POLITICAL ENVIRONMENT

It goes without saying that the chemical industry's interest in the commercialization of genetic engineering is linked to its desire for a favorable political and public climate in which this objective can be successfully pursued. As the present chapter will show, this wish, particularly in the late 1980s and early 1990s, was fulfilled only in part - at least from the perspective of the industrial actor. Covering the period from the mid 1970s - when the chemical industry entered into »first contacts« with the new technology - until the mid 1990s - when rDNA technology had become firmly established in the sector - the chapter points out the key factors of the sector's political environment concerning the development, application, and exploitation of genetic engineering. These key factors are, first, *regulatory policies* comprising the proposal bill of 1979, the subjection of genetic engineering research and production under the control of the Federal Emissions Act in 1988, and the Genetic Engineering Act of 1990; second, *parliamentary scrutiny* due to a technology-critical newcomer to the parliamentary arena - the Green Party - and the establishment of a Commission of Inquiry (*Enquête-Kommission*) dealing with the prospects and risks of the new technology; third, *social protest* at the local and supraregional level; and fourth, a *critical mass media discourse*.

Among these factors, the chapter shall show, the party Die Grünen and civil protest at the local level have played a special role in challenging the chemical industry at the political, social and moral levels: While the transformation of the rDNA issue from a technical issue into a political and (highly moral) protest issue was carried out to a great extent by the technology-critical policy of the movement-related parliamentary newcomer (pursued at the parliamentary and social levels), legislation was significantly driven by local protest against the construction of genetic engineering facilities in the chemical industry. The exposition generally focuses on *civil protest actors*; these actors are recognized as the principal technology opponent and major challenger of chemical enterprises engaged in the new technology. The subsequent chapter will identify this political factor and the others stated above - which influencing each other make up the »external politicization« of the chemical industry - as the major determinants of the sector's political activities - that is, of the sector's »internal politicization« - in the German rDNA debate.

1. Parliamentary Scrutiny and Regulatory Policies

Looking back on the process of politicization of the genetic engineering issue in Germany, this chapter shall demonstrate, first, that the chief initiative for a lasting transformation of a technical issue into a political issue did not come from the extra-parliamentary but from the parliamentary sector - largely due to the Green's entry into that sector. As distinguished from the nuclear energy issue for which the anti-nuclear energy movement had the »monopoly of sensitization« before it was put on the systemic political agenda and had become a mainstream issue, there was no such exclusivity for protest actors in the case of the rDNA issue. This is what Gill refers to when he states that it would be "eigenartig ..., daß der Meinungsbildungsprozeß genau anders herum ablief als üblich" (Gill 1991a: 430). Whereas usually, as the author points out, an issue comes into existence somewhere in society, is placed by activists onto the media and public agenda, and then as a reaction to the challenge of public opinion is taken up by a political party and thus reaches parliament only late, in the case of the rDNA issue it was parliament which translated the issue into a political and public agenda item (Ibid.). The role of the (extra-parliamentary) activists is restricted to keeping the issue on these agendas; to play this role, however, implies a real endeavor.

In the process of lawmaking, on the other hand, parliament played only a minor role. The chapter, secondly, argues that legislation on genetic engineering was set off in the final analysis by extra-parliamentary actors, namely local protest groups, the Bundesrat and the highest administrative court in one of the Länder, the Administrative Court of Hesse.

The principal concern of the present chapter is to point out that the societal controversy about rDNA technology in Germany shows the effects of a process that to some extent is taking place in all highly industrialized countries of the Western world and has accelerated since the turn of the 1980s: The diffusion of the concern about *technological risk* into the political and legal system. It is due to this process that the established political and legal institutions (and not merely civil protest actors) in the German rDNA debate present a real political challenge to the chemical industry.

1.1 BMFT-Led Corporatist Negotiations: A First Approach to Legislation Peters Out

In Germany a first approach to a broader politicization of the rDNA issue occurred in the late 1970s (at a time of the very first public and private commitment to the new genetic engineering techniques) in the arena of institutionalized politics. This approach consisted of the subjection of genetic engineering research and development to safety guidelines and subsequent corporatist negotiations about a legislative regulation of rDNA technology.

The national regulatory and safety debate was closely linked with the events which took place in the United States at that time. In July 1974, eleven leading American scientists, involved in recombinant DNA research, called for a worldwide moratorium on specific forms of recombinant experiments thought by the group to be potentially hazardous, and requested an international conference on the potential biohazards of such research. (It is worth noting that such a moratorium on a particular form of scientific research is probably unique in the history of science.) Seven months later in February 1975, an international conference was held at Asilomar, California. The conference concluded that most work involving recombinant DNA research could continue with appropriate safeguards which took the form of physical and biological containment. The following year, the American National Institutes of Health (NIH) turned the rough plans laid out at Asilomar into specific detailed guidelines for recombinant DNA research. The American scientists' call for a temporary halt to experiments initiated a debate about technical safety matters and the appropriate regulation of genetic modification experiments not only in the United States but in several western European countries. Most countries which support recombinant DNA research, such as Germany, adopted some form of guideline more or less closely related to those of the NIH[1].

Seen from an international perspective it was thus the scientific community itself which gave birth to the rDNA issue and put it onto the political agenda; seen from the national perspective the driving forces in the transformation of a previously technical issue into a regulatory issue at this time was the executive in the form of the Federal Ministry for Research and Technology (Bundesministerium für Forschung und Technologie, BMFT[2]) on

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[1] The German genetic engineering guidelines were revised four times (the last time in May 1986; Der Bundesminister für Forschung und Technologie 1986).

[2] The Federal Ministry for Research and Technology (BMFT) has been recently extended into the Federal Ministry for Education, Science, Research and Technology (BMBF).

the one hand, and the labor unions on the other.

In 1978, the German Federal government issued the Guidelines on Protection From Dangers From Nucleic Acids Recombined in Vitro (Richtlinien zum Schutz vor Gefahren durch in-vitro neukombinierte Nukleinsäuren). These rDNA safety guidelines - closely patterned on those developed by the NIH - introduced a risk evaluation system for planned genetic engineering experiments. The evaluation procedure was institutionalized with a Central Commission for Biological Safety (Zentrale Kommission für die Biologische Sicherheit, ZKBS) located at the Federal Health Office (Bundesgesundheitsamt, BGA) in Berlin[3]. The guidelines' range of validity, however, was restricted. It merely covered projects carried out with federal funds; hence the guidelines were not binding for privately supported research in or outside industry or for university research funded by Länder governments. Relevant for this type of research and development were laws and *Verordnungen* applied only analogously to genetic engineering procedures.

The guidelines' limited range of validity, however, did not remain uncriticized. The labor unions in particular strongly argued for more stringent and generally binding regulation of rDNA research and development. According to them, a law was needed, on the one hand, to place the government's regulatory efforts on an adequate legal basis and, on the other, to ensure that workers could be protected against the risks emanating from genetic engineering research regardless of their place of employment. Responding to these demands from its powerful labor constituency, BMFT drew up a bill in 1979 authorizing the Federal government to regulate genetic research in all sectors, both public and private (Jasanoff 1985: 32). In September 1979, BMFT convened a non-public hearing of German and foreign experts to discuss the proposal to give the rDNA guidelines statutory force (as well as more theoretical questions about scientific autonomy and the likely impacts of full-scale commercial utilization of genetic engineering). The German participants in this first political debate on

[3] The commission which represents a plurality of social interests as well as different areas of technical expertise was assigned the task of advise the Federal government and the Länder as well as the registration office for gene technological experiments at the Federal Health Office with regard to the assessment of safety issues in the field of genetic engineering.

the "Chancen und Gefahren der Genforschung"[4] were representatives from large organizations with an institutional interest in genetic engineering research policy. In this respect, as Jasanoff points out, the German contingent constituted a "typical negotiating forum for corporatist decision-making, providing opportunities for major interest groups to bargain with each other, but excluding marginal or extreme viewpoints" (Jasanoff 1985: 32/33). The meeting aroused a great deal of negative comment on the BMFT proposal; indeed, it met with massive opposition from representatives of science and industry. Their main argument against legislation was an (alleged) international shift in risk evaluation towards the view that the riskiness of the new techniques had originally been greatly overestimated; a phenomenon which they saw expressed by the recently relaxed NIH-guidelines[5]. Having generated a substantial record against the proposed statute, the Research and Technology Ministry was able to drop the bill, to the satisfaction of both the chemical-pharmaceutical industry and the research community.[6]

However, this action could have elicited significantly more opposition, particularly from the labor unions, if two major sectors of the research community - private industry and the universities - had not agreed voluntarily to abide by the government guidelines. The lead in mobilizing industry support for the guidelines was taken by the Federation of the Pharmaceutical Industry (Bundesverband der Pharmazeutischen Industrie, BPI). The trade association employed the threat of legislation in order to persuade its members that voluntary

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[4] "Chancen und Gefahren der Genforschung" (Opportunities and Hazards of Genetic Research) was the title of the hearing; for proceedings and documents concerning the hearing, see Der Bundesminister für Forschung und Technologie 1980.

[5] The first revision of the NIH-guidelines took place in January 1979. Foremost in relaxing regulation, it politically institutionalized the scientific community's "paradigm change" (Sibatani 1986: 39) which had shifted the burden of proof from those assuming rDNA technology as being safe to those who viewed it as being imminently hazardous. An American statement on proposed German legislation at the government hearing demonstrates the profoundness of this paradigm change: "One colleague told me: Is this a joke? Legislation? Don't they know in Bonn that all the legislative efforts were abandoned in the United States for almost two years? Tell them that the issue is dead and the concerns are out of date." (Szybalski 1980: 299)

[6] Still, the international hearing did not lack contributions expressing substantial concern about the use of the new technology. The participant who most strongly advocated stringent regulation was the American biochemist Erwin Chargaff. Chargaff, one of the founding fathers of molecular biology, is the firmest opponent of genetic engineering in the United States' scientific community. Since the mid 1970s, with forceful rhetorics and apocalyptical scenarios, the scientist has been denouncing the new technology as an outrage to nature unparalleled in previous history: "The two greatest deeds - and probably misdeeds - in my time have been the splitting of the atom and the discovery of a way to manipulate the genetic apparatus. When Dr. Otto Hahn made his tragic discovery, he is reported to have exclaimed: 'God cannot have wanted that!' Well, maybe it was the devil." (Chargaff 1977: 32, quoted in Radkau 1988: 336)

compliance with the more flexible guidelines would be to choose the lesser of two evils (Jasanoff 1985: 33). The Länder governments, at the same time, agreed to extend the guidelines to the state-controlled university system; that way arbitrary differences in the standard of care expected of academic researchers employing genetic engineering techniques was to be precluded.

Among the federal and state parliamentarians, it can be noted, the hearing and its subjects generally met with a low profile. The German public hardly took any notice of the event. In short, the regulatory debate was neither placed on the main political agenda nor did it enter the public arena, and in the political »side arena« in which it took place it soon fell into oblivion.

1.2 The Ethical Discourse of the Greens: Setting off an Extensive and Lasting Politicization of the rDNA Issue

It seems fair to state that, up to the mid 1980s, the German parliamentarians and the general public displayed remarkably little interest in the novel biological techniques (Radkau 1988: 340). The American events (if noticed) presumably had a reassuring rather than alarming effect. With the international scientific consent of Asilomar the rDNA issue - restricted by the participating scientists to safety risks associated with the techniques' use in research and development and designated as a technical problem to be resolved on technical grounds[7] - seemed thrashed out and its resolution with the Federal rDNA guidelines and the Central Commission for Biological Safety at the national level adequately institutionalized. In the late 1970s and early 1980s, the genetic engineering issue in Germany presents itself as a, so to speak, »imported« safety problem with a pre-produced technical solution.

It was only in 1984 (after more than a decade of federal support for modern biotechnologies), when Parliament at the request of the Green and the Social Democratic Parties resolved to set up the Bundestag Commission of Inquiry on the Opportunities and Risks of Genetic

[7] Wright (1978) has determined *technicalization* as the major means of issue definition of the Anglo-Saxon molecular biology community in the mid 1970s; the aim pursued by technicalization was to secure self-regulation and preclude outside-regulation.

Engineering (Enquête-Kommission "Chancen und Risiken der Gentechnologie", see point 1.3), that the technology became institutionalized on the systemic political agenda[8] (at about the same time the rDNA issue was taken up by extra-parliamentary protest actors, see point 2).

The structural basis for a persistent politicization of rDNA technology had been laid with the entrance of the *Greens* into Parliament in 1983[9]. In the parliamentary committee of research and technology, the new political party had from the start declared genetic engineering one of its main issues of interest. Considering that until that time modern biotechnologies had not been the issue of an ongoing political or scientific discussion, this represented a politically vital decision. It was based on the assumption that rDNA research and application would have two adverse effects against which the Federal guidelines could not give protection: First, ecological and human health problems of unpredictable proportions; and second, an irresponsible disregard for alternative, non-technical, that is social and political solutions to those problems in the envisaged fields of application that were social and political rather than technical problems (Schramm 1988: 39).

Yet, the first Green position concerning genetic engineering which was formulated in 1984 in the context of a parliamentary interpellation (große Anfrage; Bundestagsdrucksache 10/1153) and consisted of a *fundamental rejection of the advancement of rDNA technology* was less based on these foremost political rationales than on *ethical grounds*. Ethical perspectives had been provided by a hearing on ethical and legal questions concerning the application of cell biological and gene technological methods to humans organized by the Federal Research and Technology Ministry in the autumn of 1983. The line of reasoning of participating critical ethics, such as the conservative philosopher Reinhard Löw[10], had exerted strong influence on the opinion-formation of Green parliamentarians - as it seemed at least a stronger influence than the expert knowledge of critical biologists affiliated with the party (Schramm 1988: 40). As Schramm observed,

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[8] The concept of "systemic agenda" is borrowed from Cobb and Elder who define this political agenda as consisting of "*all issues that are commonly perceived by members of the political community as meriting public attention and as involving matters within the legitimate jurisdiction of existing governmental authority*" (Cobb & Elder 1983: 85; emphasis in original).

[9] The thesis that the Green Party has played a special role in the politicization of the genetic engineering issue has been defended by Schramm (1988).

[10] For Löw's moral philosophical assessment of genetic engineering see Löw (1985).

> Die Ethik blendete so, daß von den Einschätzungen der wissenschaftlichen Gewährsleute nur die Skepsis an den zu einfachen Modellen der Gentechnologie und damit auch an deren Machbarkeitsansprüchen aufgegriffen wurden. (Schramm 1988: 40)

It was the conservative non-interference ethics, as advocated by the American biochemist Chargaff[11], and feminist and science-critical argumentation - the wording of which, as Schramm puts it, suited the formulation of a rigorous ethical opposition to the "seduction by the feasible" (Verführung durch das Machbare", Ibid.) - which provided the main grounds upon which the 1984 Green position was built: The new techniques were interpreted as entailing a qualitative change in the nature of scientific inquiry which would render possible »man's« total manipulation and subjugation of nature. The novelty in scientific inquiry was determined as a highly interactive approach to nature, inherent in which was the potential to genetically *reconstruct* living beings. It was deemed implausible that a technology which interfered in such »nature adverse« (natur-widrig) and, therefore, »hard« way in genetic material could be employed in a beneficial way[12]. Genetic engineering as well as reproduction technologies were rejected primarily on deontological, non-utilitarian grounds attributing all life-forms not only a right to exist but a dignity all of their own which in its turn was understood as the prime criterium for man's intercourse with nature. Rather than safety, political, ecological and social reasons it was the integrity and goodness of the »natural« defined as a moral norm for human behavior which formed the basis of the declaration of technology opposition.

The political and social importance ascribed to the new technologies was demonstrated by the establishment of a Federal Working Group on Genetic Engineering and Reproduction Technologies (Bundesarbeitsgemeinschaft Gentechnologie und Fortpflanzungstechnologie, BAG) in May 1984. The working group's principal task was defined as making evident the lack of legitimacy of government and industrial research policy in these technology fields; the main strategy to fulfill this task consisted of the representation of the ethical reprehensibleness

[11] According to Chargaff genetic manipulation represents more of an ethical problem than one of public health, and the "principal question to be answered" was "whether we have the right to put an additional fearful load on generations that are not yet born" (Chargaff 1976: 938).

[12] For an assessment of genetic engineering as »hard science and technology« see von Gleich (1986, 1987). Von Gleich has been a scientific collaborator with the first Green parliamentary group.

of the new technologies.

The Greens' technology policy proved successful insofar as it had a triggering effect for placing the rDNA issue on the systemic agenda (moreover, it gave rise to intensifying discussions in the social movement sector, see point 2.). The party's decision, first, to declare genetic engineering one of the main points of emphasis of its parliamentary work and, second, to take up a position of unequivocal opposition on mostly ethical grounds to the technology is likely to have put significant pressure on the established parties to deal more intensely with the subject matter. It is the subsequent increased activity of these parties in the field which indicates this pressure: The Parliamentary Social Democratic Party organized a number of expert discussions; in 1984, the Federal Research and Law ministry established the Working Group In-Vitro Fertilization, Genome Analysis and Gene Therapy, the so-called Benda-Commission[13] (Bundesminister für Forschung und Technologie & Bundesminister der Justiz 1985), which was to deal with the ethical and legal questions of reproduction technologies and the application of genetic engineering techniques to humans; in the same year, finally, the Parliament decided to set up a Bundestag Commission of Inquiry on the Opportunities and Risks of Genetic Engineering.

With regard to the political system as a whole, there is, besides the moral challenge of the ethically-grounded position, a heightened sensitivity regarding the ambiguity and the social conflict potential of technological progress which is likely to have constituted the basis on which the pressure of the Greens could develop; the modern biotechnologies, so to speak, provided the opportunity to avoid the mistakes which had been made in the debate about nuclear energy. In the special case of the Social Democrats, it seems reasonable to assume that it was, in particular, the challenge of a new rival on the left which generated the motivation to act on the issue. The rise of the Greens confronted the Social Democrats with the societal attractiveness of »new politics values« including the quality of life value of clean and sustainable technologies. The decision of the SPD to make a request for a Bundestag commission is likely in part to have been a response to this new intra-parliamentary challenge. It was to forestall an exclusive »occupation« of the rDNA issue by the Greens.

[13] Ernst Benda, former president of the Federal Constitutional Court, took over the chairmanship of the working group.

1.3 The Parliamentary Commission of Inquiry: Transforming a Political Issue into a Public Issue

With the appointment of a parliamentary commission of inquiry on the prospects and risks of genetic engineering in the summer of 1984, the rDNA issue was definitively placed on the systemic political agenda. The Commission's appointment was jointly supported by the opposition and the government coalition parties.

As alluded to above, the support of the Commission's establishment across party lines has to be seen against the background, first, of the technology-political challenge that the Greens' entry into the parliamentary arena meant to the established parties, and second, of the negative experiences of the nuclear energy debate of the 1970. In retrospect, the polarization of society into pro- and anti-nuclear energy camps for large parts of the political community presented itself essentially as the result of a political failure to anticipate and forestall social conflict resulting from both new dimensions of and increased sensitivity as regards technology-induced risk and uncertainty. According to this view, prevention of a similar development in the case of modern biotechnologies required a technology assessment in these terms at an early stage of technology implementation. Risk analysis and decision-making based on these grounds at a point in time at which genetic engineering was not yet fully institutionalized[14] and before extensive public debate had arisen[15] was considered the appropriate political strategy to avoid another technical controversy; and the Enquête-

[14] However, in 1984 there existed already considerable public and private commitment to the technology in the form of significant investments in genetic engineering research and research organization. At this point in time, both the state and the private sector had assigned the new technology the importance of a »key technology« for the future industrial prosperity of the Federal Republic and for its international competitiveness. The triggering event for a larger public and private commitment had been the first major investment in genetic engineering techniques by the chemical enterprise Hoechst. The decision of the company in 1981 to share in the establishment of a new department of microbiology at the Massachusetts General Hospital in Boston with a financial contribution of $ 70 million had rapidly led to massive support from state and industry for technology development in Germany. Since then, the focus of support has been on projects and undertakings likely to bring about a closer link and co-operation between fundamental research and industrial application, that is a strengthening of application-oriented basic research. The most important example to state here is the creation of four national genetic centers (in Heidelberg, Cologne, Berlin, and Munich), with the participation of the major chemical companies (respectively BASF, Bayer, Schering, and Hoechst) constituting a new form of institutionalization of science. For a comprehensive analysis of this preliminary stage of commercialization, see Hack & Hack (1985).

[15] In 1984 there was no unfavorable public opinion to put pressure on the parliament to act on the novel techniques. Social advocacy groups had not yet taken up the subject, and public discussions were limited to small academic and Green-associated circles.

Kommission was deemed a vital instrument of such »proactive« technology policy (Catenhusen 1988: 361)[16].

In the light of the nuclear energy controversy the Commission was assigned yet another function, particularly by the opposition parties: to re-establish the shattered confidence in the willingness and cognitive and practical competence of the modern parliamentary system to exert influence on the pace and direction of scientific and technological development and to initiate decisions regarding the extent to which risks associated with this development are tolerable for society. In this sense, the Enquête-Kommission was not only considered a particularly appropriate source of information for both parliament and the public; furthermore, it was understood as a suitable institutional instrument to keep informed on and control over government policy on the novel technology.

The Commission of Inquiry on the Opportunities and Risks of Genetic Engineering (in the following referred to as the Commission) - in which also a representative of the chemical industry participated[17] - actually constituted the first parliamentary committee in the world to attempt to carry out a comprehensive assessment of the novel genetic engineering techniques. Based on the consent of the Commission majority of Social and Christian Democrats, the Commission's brief was to define and evaluate the prospects and risks of the technology as used in the principle applications then emerging - health care, food, raw materials, energy, and environmental protection - with particular emphasis on economic, ecological, legal, social, ethical, and safety aspects, and to make recommendations for concrete political actions to be

[16] However, as Gill (1991a: 413-417) exposes in his account of the commission's appointment debates, this strategy was defined very differently by the political parties. While the Social Democrats defined it primarily as a strategy of building consensus on the technology, the Christian Democrats understood it foremost as a strategy of promoting political and public acceptance of the technology. The Green Party, in contrast, defining societal controversy as an integral part of a democratic shaping of technology development, employed the commission as an instrument to mobilize political and public opposition to the technology.

[17] Industry was represented by the then chairman of the board of the Knoll AG, a subsidiary of the chemical company BASF. Enquête-Kommissionen are »mixed« commissions. That means, they are composed of members of parliament of the different political parties and »experts« who include independent (theoretically at least) scientific experts and experts of »societal practice«. The latter usually are representatives of industry, trade unions and the law and, since quite recently, sometimes also representatives of the environmental movement. They are distinguished from more traditional forms of parliamentary policy advising (such as the fact-finding committee, Untersuchungsausschuß) in so far as they assign equal status to parliamentary and non-parliamentary commission members when it comes to voting on decisions. The Enquête-Kommission which is one of the most intensive form of parliamentary policy advising in Germany in the course of the 1980s advanced to the special form of parliamentary treatment of specific technologies.

taken by parliament (Catenhusen & Neumeister 1987: 1-2)[18].

The working results of the Commission comprised, besides an extensive exposition of the scientific, political and legal relevance of the technology at issue, 150 recommendations ranging from proposals for supporting research to recommendations for legislative measures[19]. From the point of view of danger aversion the following four proposals for regulation shall be emphasized: First, the Commission proposed that germ line gene therapy be prohibited by law. Second, it recommended five-year-bans on some of the experiments releasing genetically engineered organisms into the environment. Third, the Commission proposed that genetic engineering research projects should not be carried out in military establishments or financed by the defence budget. And fourth, the Commission recommended to give the Federal rDNA guidelines statutory force and thus make them generally binding also for the use of genetic engineering in private industry (Catenhusen 1988: 362).

The Commission's final report which recorded these and the other recommendations was approved by all of the commission members except the representative of the Greens. According to the Commission's chairman, the consent reached could have hardly been expected in view of experiences with other technology debates in Germany (Catenhusen 1988: 362). The sociologist of science, van den Daele, who sat on the Commission, characterized the Commission's work as that of a "Große Koalition" (van den Daele 1987: 43). According to van den Daele, this »Great Coalition« did not simply arise from spontaneous agreement on the subject. Instead, it was the result of a self-built ability to compromise, of the pressure of time under which the work had been carried out, and finally, of the dominating interest to secure for the jointly advocated recommendations the best chance of enforcement by parliament (Ibid.). Besides these factors, the timing of the Commission appointment - before extensive public debate had developed and before the established political parties had adopted a position on the new technology - is likely to have played a beneficial role in consensus-building (Catenhusen 1988: 362).

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[18] The Green Party proposed to define the Commission's task as the prohibition of the technology with exception proviso (Bundestagsdrucksache 10/1388). When it became clear in the course of the appointment debates that this definition was unacceptable for the Commission majority, the party devoted itself to the mobilization of the public by the »production of dissent« and declared the work in the commission as a means to that end (Gill 1991a: 415) (see point 2.1.1).

[19] The Commission completed its work in December of 1986.

The Greens who refused to approve the report of the majority advanced their position and political recommendations in a minority vote (Catenhusen & Neumeister 1987: 314-357). This requested no absolute ban on the technology but a research moratorium for several years. The moratorium was declared necessary to compare the strategies of problem-solution offered by genetic engineering with diverse alternatives for the handling of pressing ecological, technical, societal, and health problems in order to identify the ecologically, socially, and ethically most appropriate strategies (Ibid.: 320).

The work of the Enquête-Kommission firmly established the rDNA issue on the parliamentary agenda[20]. Yet it did not exert real influence on government policy on the technology. The Commission's proposal to subject the technology to safety guidelines with statutory force, for instance, was put into practice in July 1990 when the Genetic Engineering Act entered into force. Parliament, however, played only a minor role in this matter. The decisive actors, as the next subchapter will argue, were citizens' action committees, the Bundesrat and the Administrative Court of the Land of Hesse (Gill 1991a: 428).

While the Commission's work did not prove very effective in the political arena, it had a major stimulating as well as structuring effect on public debate. During the working life of the Commission, the public debate on rDNA technology widened considerably, amongst others in the churches, in the environmental movement and in the women's movement. It was the publication of the Commission's final report in January 1987, however, that caused the *real breakthrough of the genetic engineering issue onto the media and general public agenda* (Ruhrmann et al. 1992: 63)[21]. The major frame in which the issue has since then been »packaged« is the Commission's popular »translation« of the ambiguity of the development of modern biotechnologies: The opportunities and risks of genetic engineering. Gill provides a pointed description of these effects on public discourse:

> Im Gegensatz zu seiner technologiepolitischen Wirkungslosigkeit war der Bericht in der Öffentlichkeit sehr erfolgreich: Wie ein Ohrwurm, den man morgens am Radio

[20] In October 1989, almost three years after the report's publication, the parliamentary committees submitted their resolution proposal (Bundestagsdrucksache 11/5320) on the recommendations of the Enquete-Kommission. Supported by the majority of the Parliamentary Government Parties, the resolution concurred on most points with the proposals of the Commission report.

[21] Radkau points to the fact that, in quantitative terms, the report's mass media response even bettered the press response to the report of the first Enquête-Kommission on future nuclear energy policy (Radkau 1988: 344).

> gehört hat und den ganzen Tag unwillkürlich weitersummt, schwirrt die Rede von "Chancen und Risiken" seither durch die Lande. (Gill 1991a: 429)

On the one hand, it seems reasonable to assume that the Commission's work had a reassuring effect on the German public. The Commission's mere existence can be expected to have given the impression that the new technology was under political control. On the other hand, it clearly created a public climate that was rather critical of the development and exploitation of genetic engineering. Despite the fact that the public discourse it initiated was, so to speak, well-balanced, since it was structured according to the risk-opportunity dichotomy, it unquestionably not only increased the visibility of the issue of risk and uncertainty but significantly widened the scope of public risk discourse.

1.4 The Administrative Court of Hesse: Motor of a Precipitated Process of Lawgiving

The regulatory policy proposals of the Enquête-Kommission gave fresh impetus to the policy debate on a legislative regulation of genetic engineering research and production. This debate was brought to an end in the spring of 1990 when the Genetic Engineering Act was adopted by the German Parliament[22]. However, as has been already mentioned above, it was not parliament which in the final analysis set off legislation but extra-parliamentary actors: namely citizens' action committees, the Bundesrat and the highest administrative court in one of the Länder, the Administrative Court of Hesse.

On the initiative of the state of Hesse, which searched for a legal basis to approve the production of genetically engineered human insulin by the chemical enterprise Hoechst, the

[22] The Act for the Regulation of Questions Concerning Gene Technology (Gesetz zur Regelung von Fragen der Gentechnik, Bundestagsdrucksache 11/6778) came into force on 1 July 1990. It covers all genetic engineering work including the work with genetically engineered organisms in genetic installations, deliberate release, and the distribution (Inverkehrbringen) of genetically engineered organisms. The Act was designed to widely adapt to the two EU guidelines which were adopted in April of the same year: The Council Directive of 23 April 1990 on the contained use of genetically modified micro-organisms (90/219/EEC, Official Journal L117 8.5.1990) and the Council Directive of 23 April 1990 on the deliberate release into the environment of genetically modified organisms (90/220/EEC, Ibid.). The Act does not cover gene diagnostics or gene therapy with humans; the whole field of application of genetic engineering to humans is excluded from the law. This field of application comes under the Act for the Protection of Embryos (Gesetz zum Schutz von Embryonen, Bundestagsdrucksache 11/8057) which came into effect on 1 January 1991.

Bundesrat, in September 1988, by legal regulations (Rechtsverordnungen) had put genetic engineering research and production partly under the control of the Federal Emissions Act (Bundesimmissionsschutzgesetz, BImSchG). This meant that the decision on the licensing of production facilities using rDNA technology required a *public hearing*[23]. The numerous objections voiced in the context of these public participation procedures thereupon brought to a halt nearly all major industrial genetic engineering projects in Germany (European Chemical News, 8.5.1989, Handelsblatt, 10.10.1989). Until the second half of 1990 - that is until the Genetic Engineering Law's enactment - not one licensing procedure could be completed this way. Referring to the difficulties with the insulin plant, the then head of pharmaceutical resarch for Hoechst in an interview with the magazine *Science* stated:

> At the moment, we are reluctant to invest more in genetic technology, at least on the production side, here in Germany. We must know that if we build a plan, it can be completed and put into use within a specific period of time; at present, we have a legal situation which causes major delays, because of the requirement for a public hearing before permission to build and operate a production plant is granted. (Ernst-Günter Afting, see Dickson 1989: 1252)

In November 1989, finally, the Administrative Court of Hesse decided to stop the further construction of the Hoechst plant (Handelsblatt, 8.11.1989). With this decision, the Court ruled in favor of the citizens' action committee "Hoechster Schnüffler un' Maagucker" (which for more than one and a half decades has acted as the »watchdog« of the Hoechst company with regard to safety and environmental issues). This group of local activists appealed in February 1989, after two years of legal struggle, against the *Sofortvollzug* for the construction and operation of Hoechst's insulin plant which had been ruled by the Administrative Court of Frankfurt[24]. The Administrative Court of Hesse as the superior authority not only decided against the plant's further construction but made new approval conditional on an *adequate legal basis*. A technology with far-reaching and, moreover, still disputed consequences for man and environment required a legal basis before it could be commercially used; the existing laws for danger aversion in view of these unsettled issues would form an insufficient legal basis for the granting of permission (Handelsblatt, 8.11.1989). As long as legislation did not

[23] A public hearing was required under the terms of the fourth amendment to the Federal Emissions Act which came into effect on 1 September 1988.

[24] The local protesters argued that nature- and health-hazards would emanate from the insulin plant.

expressly permit the use of genetic engineering, the Court concluded, genetic engineering facilities could not be constructed and operated, independent of the evaluation of their dangerousness in the individual case (Die Zeit, 17.11.1989, p. 41). As other Länder followed the example of Hesse, the Court decision brought about a quasi-blockade of the industrial use of genetic engineering.

This quasi-blockade of the implementation of what government and industry considered a new key technology pressed for political action. Faced with a more and more impatient industry demanding legal certainty for the technology's commercialization, the political decision-makers responded with a rapid revision of the first draft law (Referentenentwurf) which in the Spring of 1989 had been rejected by the *Länder* with more than 250 amendments. Despite harsh criticism from the parliamentary opposition, the revised bill passed parliament on 29 March 1990. The outcome of this precipitated process of lawgiving met with substantial political and public criticism[25]. The main point of criticism was that the revised bill was favoring industry's interests too much. As the parliamentary opposition argued, this bias, most clearly expressed by the purpose of the Law, would contribute to an undifferentiated approval of the technology at issue (Handelsblatt 21.3.1990).

To put it in Theisen's terms, the Law circumvented the "Dilemma zwischen industriegesellschaftlichen Expansionsansprüchen und risikogesellschaftlichen Sicherheitsansprüchen" (Theisen 1993: 81) by integrating both objectives. The purpose of the Law is twofold: On the one hand, it aims to protect man and the environment against potential dangers emanating from the use of genetic engineering; on the other, it is intended to secure a legal framework for the advancement of the technology. The Genetic Engineering Act thus presented not merely an expression of the state's obligation for danger precaution; at the same time it presented a clear political commitment to the disputed technology[26].

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[25] The Social Democrats reproached the parliamentary group of the government coalition for a "fieberhafte Flickschusterei" (feverish patchwork, Handelsblatt, 27.3.1990) in the genetic engineering committee. The objective behind this great haste, the Social Democrats argued, would have been to gain the support of the CDU/CSU governed Länder and rush the bill through the Bundesrat before the forthcoming elections of the Land of Lower Saxony could have brought about a change of the ratio of representation in the Bundesrat to the advantage of the SPD and that way revived discussion on the technology.

[26] This political decision in favor of the technology, as von Schomberg points out, was reflected by a change in argumentative strategy at the governmental level. To borrow von Schomberg's terms, the argumentative strategy of a "Nein-Aber Politik" which gives priority to the technology's risks and argues for a restrictive

Consequently, the Law was predominantly rejected by the technology's protesters, while on the side of industry it widely met with a positive response. For the time being it complied with the needs and interests of this actor as it removed legal uncertainty regarding the technology's use the detrimental effects of which had made themselves unpleasantly felt.

Actually, the new Law considerably eased the way for companies to obtain approval for production processes. By limiting the public hearing requirement to high risk projects, the Law largely removed the public participation hurdle. As most systems envisaged for production fell under the lowest safety level defined by the Law, applications did not need to come before a public hearing as was the case under the Federal Emissions Act[27]. Thus, it was not surprising that industry, which until then had vigorously argued against any form of legislation, welcomed the new Law - at least at this point in time[28].

The political decision to provide a legal framework for genetic engineering research and production generally initiated a down-swing phase in technical controversy. While the economic actors for the time being saw their interests safeguarded, the technology protesters reacted first and foremost with frustration and resignation. Legislation primarily had a de-motivating and de-mobilizing effect on these social actors. With the Law the question of whether genetic engineering should or should not proceed had essentially become moot. The still prominent objective of an absolute ban on modern biotechnologies had turned into a non-realizable demand. Nonetheless, as the subsequent chapter will show, the protest actors remained active in attempting to keep the issue on the public and political agenda.

The regulatory debate temporarily came to life again in the autumn of 1992 when parliament proposed a resolution on changes of the Genetic Engineering Act designed to ease some of the Act's restrictions. The request was supported by a majority of the coalition

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regulation of research and market increasingly was superseded by the argumentative strategy of a "Ja-Aber Politik" giving priority to the technology's social and economic prospects and arguing that restrictions should be exceptional and only be made in those cases in which there are clear hazards to human health or the environment (von Schomberg 1992: 52).

[27] The mere existence of the law removed the legal objection to Hoechst's production system for recombinant insulin.

[28] Until then a special law on rDNA technology had been rejected on the grounds that rigid regulations would adversely affect the industrial "Innovationsdynamik" (dynamics of innovation, Frankfurter Rundschau, 17.12.1987) as put forward by a representative of the chemical industry at a conference in the Evangelische Akademie Tutzing on the state of discussion concerning the final report of the commission of inquiry.

parties and the parliamentary opposition. This event must be seen against the background of an insistent and pressing criticism of both research and industry against the new Law as it had been voiced during the first months after the Law's enactment; in fact, industry's contentment with the new Law had not lasted very long. A public hearing on the implementation of the Genetic Engineering Act organized by the Committee for Research, Technology and Technology Impact Assessment and the Committee for Health of the Bundestag on 12 February 1992, for instance, was taken as an occasion to thoroughly put forward criticism and objections. The focus of criticism advanced at the hearing was on overbureaucratic implementing regulations (Durchführungsverordnungen) which had entered into force shortly after the Act itself[29]. Long delays, compliance costs and the obligations of documentation were considered severe shortcomings. In short, the bureaucratic and restrictive character of the Genetic Engineering Act was defined as being anti-science and opposed to innovation (*Handelsblatt* 13/2/1992).

On 1 January 1994, the revised Law came into effect (Bundestagsdrucksache 720/93). For the benefit of science and industry the amendments provide for a streamlining of the regulatory process. One important amendment refers to public participation. This is once more restricted: Under the revised Law decisions on the release of genetically engineered organisms into the environment are to be taken after a written hearing procedure; unlike the initial Law the revised Law does not provide for an oral hearing[30]. The rationale on which government justified deregulation was that since the initial Law's enactment experience with the handling of genetically engineered organisms would have greatly increased; the originally assumed risks in dealing with the new technology would have partly not proved to be true (Bundesministerium für Gesundheit 1993: 24).

So far I have expounded the political challenge that the chemical industry has faced in terms of *public exposure by the established political and legal institutions*. The political challenge that civil protest actors have presented to industry I have indicated by pointing out the role citizens' action committees have played in the process of lawmaking. The next chapter

[29] The enforcement of these provisions is not carried out federally but by 50 different regional authorities (Regierungsbezirke).

[30] For a discussion of this amendment with regard to present environmental and technology law see Bora (1994).

demonstrates in more detail the role that local protest groups have played in publicly exposing the industrial sector. It argues that citizens' action committees protesting against industrial applications of genetic engineering form part of a network of technology protest acting at the local, national, and European level. This protest network, the chapter shall show, has brought significant pressure to bear on the chemical industry.

2. Collective Protest

It is a peculiarity of the German genetic engineering controversy that societal criticism of the technology - appearing on the public stage at about the time when the Enquête-Kommission was set in - developed into much more intense and extensive collective protest than in comparable western European countries. As in the case of the peaceful use of nuclear energy, collective protest does not merely relate to safety issues; instead, it also refers to the ethical admissibility of the technology as such and socially, politically and culturally undesirable developments which could emanate from or be accelerated by the technology's use. Possibly the most salient characteristic of technology protest in Germany is the persistence of ethically motivated fundamentalist opposition to the technology as such. This fundamentalist opposition has prevented genetic engineering from »getting lost« as an independent topic in the regulatory problems of the different fields of application. However, the fundamentalist discourse, with moral (foremost *gesinnungsethische*) qualms as its main argumentative basis, has increasingly lessened in importance in the course of controversy. They have given way to a specialized and sectoralized discourse on risk advancing equally moral (*gesinnungs-* and *verantwortungsethische*), political and scientific argumentation.

This chapter identifies the collectivity of initiatives, groups and organizations protesting against the technology as such or against specific applications of it as the most radical and most tenacious political challenger of the chemical industry in the German rDNA debate. It has brought significant pressure to bear on the industrial sector directly by impeding concrete genetic engineering projects and, indirectly, through public opinion-formation, that is, the creation of an unfavorable public climate for the technology's commercialization. The chapter is organized as follows: The first two sections take a *historical perspective* and depict the formative stage of collective protest. They point out the special role that the Greens have

played in this initial phase of collective protest and the circumstances that forestalled the formation of an »anti-genetic engineering movement« towards which the Greens' attempts at mobilization were geared.

Then, a *structure-related portrayal* of collective protest as it has developed in the last decade is provided in three sections. The first of these sections determines the *network structure* of collective protest and its *twofold focus on the local and supraregional level* as its most salient characteristics in terms of general structure. The other two sections provide a description of *protest practice*. While, firstly, *nation-wide campaigning on single issues* are determined as the most important type of protest action at the surpraregional level, secondly *the seizing of administratively regulated rights for participation and objection and symbolic single actions* are identified as the major types of protest action at the local level.

The subsequent section expounds the above mentioned *shift in argumentation* from a predominantly fundamentalist-ethical protest discourse to a *specialized and sectoralized risk discourse with fundamentalist elements* criticizing rDNA technology equally on moral, political and scientific grounds. The last section of this chapter, finally, points out *industry as a special target* of both the ethically motivated fundamentalist discourse and the specialized risk discourse at both the local and the surpraregional level.

2.1 The Formative Stage

While in 1984, a debate over genetic engineering in terms of opportunities and risks started off in the parliamentary Commission of Inquiry, a *fundamentalist discourse* on the new technology commenced in the so-called »new social movement sector«. In the mid 1980s, the political actor that decisively encouraged extra-parliamentary protest to develop and accelerated the dynamic of protest discourse was the Green party. The social actor that most strongly responded to the Greens' effort at mobilization was the feminist wing of the women's movement.

2.1.1 The Making of a Counter-Issue: Genetic Engineering as the Declaration of War on Women, Nature, and Exploited Peoples

It was the Green institution of the *Bundesarbeitsgemeinschaft Gentechnologie and Fortpflanzungstechnologie* (BAG) from which the first attempts at protest mobilization emanated. With the Federal Working Group the Greens had established an organizational and discursive context for critical expertise on and assessment of genetic and reproduction technologies. Originally, the BAG's primary task had been defined as advising and assisting the Greens' parliamentary party with respect to its work in the Commission of Inquiry. It soon had become clear, however, that there was little chance of mobilizing support for the Green policy on the new technology in this parliamentary forum. In line with its general policy the Green party had deliberately narrowed down its technology-political focus exclusively to the fundamental and radical. It demanded prohibition of the new technology with exception proviso. The technology evaluation perspective of the Commission majority dissociated itself decisively from the Green point of view. It excluded the question of *whether* genetic engineering should be employed at all by society from parliamentary discourse and thrust the ethically based problem definition of the threat of a »total subjugation of nature« into the background. In view of the Commission's technology-induced approach and the clear consent-orientation of the established parties, the jointly pursued strategy of Hickel, Jansen[31] and the BAG became to see the work in the commission as a means of stirring up public debate and the BAG's primary task to encourage the formation of extra-parliamentary collective protest. Recruiting its members from the, at that time, still rather small spectrum of left, green and green-associated critics, the BAG constituted the first condensating point of social opposition within a major organizational framework. From this node the Greens started doing mobilization work[32]. This endeavor was significantly facilitated by the party's then proximity

[31] The Green parliamentarian Erika Hickel sat on the Enquête-Kommission, Sarah Jansen was Hickel's scientific collaborator.

[32] In the first half of the 1980s, the Greens generally were the driving force, target, discussion forum, and pool of ideas for proposals designed to produce a transformation of technology development as part of a »new politics«.

to new social movement activists[33] and the organizational resources of its party apparatus.

Mobilization was especially successful with parts of the *women's movement*. The reasons for this are, first, the strong personal contacts between members of the BAG and activists of this social movement which made it easy to establish further contacts with affiliated groups and individuals. Then, with the political analysis of the rDNA issue in terms of a combination of a »Greenist« notion of nature as man's partner[34], basic criticism of science and feminist criticism, a high resonance was assured within an important branch of the women's movement, the *feminist wing*. Consent could easily be mobilized, for instance, with the Gen-Archiv Essen, a newly formed archive of modern biotechnologies focusing on reproduction technologies and with a special emphasis on the new technologies as a women's issue[35].

In addition to this ideological bond it was, third, the thematic linkage of genetic and reproduction technology - as made manifest by the title of the Federal Working Group - which facilitated consent mobilization. The condemnation of both technologies on equal grounds guaranteed the attention and encouraged the accord of the many groups and individuals involved in critical discussion on the steadily developing reproductive technologies. Among the recent developments in the life sciences, it was these techniques upon which the critical discourse of the women's movement so far had concentrated. The

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[33] The Greens as a political party arose directly from the activities of the diverse social movements that came together in the late 1970s, notably the anti-nuclear and environmental movement, citizens' initiatives, and other alternative networks; for a comprehensive historical and political analysis of the German Greens, see Wiesenthal (1993).

[34] For a reflection on a Green concept of nature that views nature as "Partner" rather than as "Grenze", see von Gleich (1984).

[35] The archive which developed from feminist-orientated discussion circles on the so-called »new technologies« radically opposes modern biotechnologies based foremost on a fundamental criticism of modern science. It denounces the dominant mechanistic-technical idea of man and nature and the methodic reductionism of the natural sciences. The archive's scientific ideal emphasized respect for nature and naturalness and was built on an orgasmic, evolutionary notion of nature. On the basis of this ideal, genetic engineering, determined as the search for general laws at the molecular level for the explanation, optimization, and improved exploitation of life, is condemned as the *radicalization of the dominant scientific paradigm*. This paradigm viewed the organism as a machine within which individual parts can be combined, exchanged, and replaced and nature as an immense spare parts store, as a reservoir for future combinations: "Ohne die Annahme, daß Mensch gleich Maschine and krank gleich Schraube defekt, ohne die Vorstellung, daß Krankes durch Ersatzteile auswechselbar ist, hätten sich die Fragestellungen and Arbeitsweise der Gentechnologie nicht entwickeln können" (Gen-Archiv Essen, self-portrayal folder). The archive's stated aims are to demystify the opposed technologies, to make them clear and intelligible to all lay people and to impede their aspired societal acceptance (Ibid.). Since 1984, the archive continues its work, gathers, and provides information about genetic and reproduction technologies.

rDNA issue in this discursive context had not played an important role yet[36]. This changed, however, with the Greens' pronouncement of a technology position that embedded the two technologies into the same technology-critical argumentative framework. Wide parts of the feminist wing responded to this junction with belligerent elan and promptly made it part of their cause. For instance, "raising public awareness about contraceptive and reproductive technologies and genetic engineering and the ways in which they are linked" became the explicit goal of the Feminist International Network of Resistance to Reproductive and Genetic Engineering (FINRRAGE; self-portrayal folder) and its national contact in Germany. The former Feminist International Network on the New Reproductive Technologies (FINNRET), founded in 1984, accentuated the importance it ascribed to this aim by changing the network's name into a statement of protest as regards both technologies (in 1985, on the occasion of a conference in Sweden[37]).

The mobilizing strength of the thematic linkage became clear with the first international conference on "Frauen gegen Gen- and Reproduktionstechnologie" (Bonn, April 1985). With the participation of some 2.000 instead of the expected 400 women (Schramm 1988: 40) the

[36] At that time, only a small circle of biologists, affiliated with the women's movement and with the science and technology critical journal *Wechselwirkung*, had already made some effort to trigger the debate on potential applications of genetic engineering, particularly on applications to humans. The Gen-Archiv Essen had just started to do work on the whole range of modern biotechnologies with a clear preference for the modern reproductive technologies.

[37] The grass-roots organization with associates in more than 35 countries defines the rDNA issue primarily as one of social inequality resulting from an evaluation of life on the basis of its genetic composition. According to FINRRAGE, genetic engineering is *eugenic* in its innermost nature in that it constitutes distinctions between »good« genes and »bad« genes. The new technology, the feminist argumentation goes, would fit a politically dominant ideology of eugenics employed to justify patriarchal, industrial, and racist domination over living beings and social groups. "In this ideology human beings are viewed as inherently inferior or superior. This leads to degradation, discrimination and elimination of oppressed groups; be they women, disabled, people of certain colors, races, religions, class, or caste. Similarly, traits of animals and plants are arbitrarily valued as being desirable or undesirable and become subject to genetic manipulation. Eugenics justifies the political strategy used by those in power to divide and rule" (FINRRAGE 1989 - The quotation is part of a declaration adopted at the international conference on Reproductive and Genetic Engineering and Women; the conference which took place in Comilla, Bangladesh, in 1989 was jointly organized by FINRRAGE and UBINIG, Policy Research for Development Alternative, Dhaka, Bangladesh). The work of FINRRAGE activists in the different countries consists of a wide action repertoire including critical research, provision of information for the public and the media via seminars, publications, interviews, etc., lobbying, consultation, and self-help groups. For the organization of national, continental, and international conferences, FINRRAGE co-operates with different local, national, and supra-national organizations. A feminist hearing on genetic and reproductive technologies in the European Parliament in Brussels (6,7 March 1986) organized by the women's section of the Green Alternative European Link (GRAEL) in co-operation with FINRRAGE represents one landmark of political opinion-formation on modern biotechnologies at the European level.

"Aktionskonferenz" (Frauen gegen Gen- and Reproduktionstechnologie, folder) jointly organized by feminist scientists (around the journal Beiträge zur feministischen Theorie and Praxis) and the Greens' working group on Women's Policy represents one of the first landmarks of critical public debate on modern biotechnologies.

The congress confirmed that part of the Greens and the women's movement unequivocally rejected the novel techniques. Its final resolution propagated definitive opposition to a technology development that was interpreted as a "declaration of war on women, nature and exploited peoples"[38]. The linkage of environmental, Third World and women's issues was made possible by a feminist theoretical approach which conceives of industrial capitalism and modern science as tools of the male "techno-patriarchate" to not only exploit natural resources, but life as such, be it the female body or peoples of other societies. In this interpretive framework, genetic engineering became the peak of male hubris of domination of nature. Moreover, as it would treat all living beings - microorganisms, plants, animals and humans - as inefficient or outright defective and in need of technical »optimization«, it was denied value-neutrality and accused of an inherent eugenic tendency[39]. On these grounds the claim was raised that the technology as such was to be rejected, without there being a need to consider the question of how, by whom, and for what purposes it might be used. The congress thus established a Green/feminist technology opposition which rejected genetic engineering not on the balance of the potential benefits and risks in the different fields of application - a discussion which had not really started off at that time in the German public - but primarily on deontological, non-utilitarian grounds attributing all life-forms not only a right to exist but a dignity all of their own which was made the prime criterium for man's intercourse with nature.

The Green/feminist definition of the rDNA issue on the grounds of a value-charged view of »nature« and »naturalness« was well suited to attracting the attention of a whole range of

[38] Literally the statement says: "Für uns Frauen, für die Natur and für die ausgebeuteten Völker bedeutet diese Entwicklung eine Kriegserklärung". The quotation is taken from a reprint of the conference resolution which called for the second congress of Women against Gene- and Reproduction Technologies which took place in October 1988 (Frauen gegen Gen- and Reproduktionstechnologie, folder).

[39] The resolution denounces the technology development at issue as the "Fortsetzung sexistischer, rassistischer and letztlich faschistischer Auslese- and Ausmerze-Politik, diesmal jedoch im Weltmaßstab ..." (Frauen gegen Gen- and Reproduktionstechnologie, folder).

groups and organizations - especially of the environmental movement - which since the establishment of the Enquête-Kommission had increasingly become watchful of the new technologies. However, as the next section will demonstrate, while the conceptualization of genetic engineering as an intrinsicly amoral technology greatly facilitated political consciousness-raising, it was not sufficient to unite the various technology critical groups into an »anti-genetic engineering« mass movement.

2.1.2 Limits to Joining Forces

On the initiative of the Greens in the course of 1985 two major attempts were undertaken to form a nation-wide alliance against genetic engineering research and development[40]. Both attempts failed as the motley mix of activists affiliated to various groups and organizations of the new social movement sector "talked at cross-purposes" (Bernhard 1992) at the »strategy meetings«. The attempts failed because the activists' criticism was directed at very different fields of application of the cross-sectional technology at issue and based on very different grounds and motives. The different critical approaches were impossible to unite under an overall common approach and action objective. Besides the technology's cross-sectional quality it surely was the fundamentally critical stance of the meetings' initiator which was a handicap to these attempts at joining forces. It only allowed for the formation of a coalition of fundamentalists clearly opposed to the technology's moral ambiguity (resulting from its cross-sectional quality).

2.1.2.1 The Cross-Sectional Quality of Genetic Engineering

The activists brought together at the two meetings were not solely radical opponents of the technology in question; instead, they included representatives of organizations and groups whose criticism centered on specific forms of application corresponding with their specific

[40] This information is based on an interview with Jörg Bernhard (1992); Bernhard then was spokesperson for the working group Bio- and Gentechnologie of the environmental organization Bund für Umwelt and Naturschutz Deutschland (BUND).

organizational or group programmatics. Basic concerns about a further denaturalization of nature and a reductionist image of life thus stood side by side with a selective problem perception: Representatives of environmental organizations wished to discuss the potential *ecological consequences* of an unintended or deliberate release of genetically manipulated organisms into the environment. They expressed concern about the possibility of ecological disruption including alteration to global cycling of nutrients and reduction in local and global genetic diversity. While the principal claim of these activists was to research into the risks of environmental releases, representatives of consumer organizations advanced concern about lacking knowledge about the *health risks* emanating from the introduction of genetic engineering techniques into the production chain of consumer products. The criticism of adherents of alternative agriculture, in its turn, focused on the production of new high-efficiency-varieties and »super-cows« feared to *encourage the use of agrochemicals and the supplanting of smaller firms*. Activists of Third World groups were troubled about the possibility of modern biotechnologies giving multinational companies greater economic control and exacerbating *economic inequities among nations*, whereas participants affiliated to animal welfare groups stated opposition to the production of transgenic animals, as it could affect the sensitivity of these animals to certain diseases, thus increasing *animal suffering*. Supporters of initiatives of handicapped people, finally, expressed disquiet that the developments in human genetics could aggravate *discrimination against disabled people* and put *social pressure on prospective parents*, especially women[41].

Evidently, these divergent types of criticism did not provide the most favorable basis for alliance-building. In any case, the technology's cross-sectional quality is likely to have worked against the mobilization of a general and sufficiently unambivalent moral opposition to the technology as such (van den Daele 1990: 37). The main reason why the represented groups did not unite in an anti-genetic-engineering movement - towards which the interests of the Green/feminist coalition were directed - can be assumed to lie in this circumstance. To put it crassly, it is a more pleasant idea to protest against a special form of power production

[41] In 1980, the issue of genetic counselling was taken up by a newly formed movement of handicapped people (the movement calls itself "Krüppelbewegung"). The movement protests against the application of prenatal diagnosis, genetic screening, and genetic counselling, as it is understood as a bias and discrimination against disabled people (Kaiser 1990: 86).

than to argue for a ban on a technology that is thought widely to promise to accelerate the progress of research on two scourges of civilization, AIDS and cancer. Such thoughts are likely to have guided especially those organizations with a formal membership and a participatory orientation not allowing them to advocate a position that dissociated them too far from the mainstream. The approach of the parliamentary commission, at least, can be assumed to have fostered reservedness as regards public commitment to radical technology opposition; by assessing the technology on the balance of opportunities and risks in each of the then expected major fields of application, the Commission's work significantly increased the ambivalence of the subject.

What the two attempts at joining forces did reveal was the main "ditch" ("Graben", Bernhard 1992) between the extraparliamentary groups and organizations which had decided to enter the critical discourse on genetic engineering. On the one hand, there were the more formalized environmental and consumer organizations. Though taking a highly critical stance, they rejected a concentration on a fundamentalist discourse; instead, they favored a more specialized approach with fundamentalist elements[42]. On the other hand, there were the feminist initiatives. Without a formal membership and larger interest in established politics and a clear priority for political consciousness-raising, these groups saw no difficulties in propagating a radical minority position. They focused on fundamentalist reasoning and got ideological support from the Green party.

The new social movement related party increasingly became aware of the fact that its attempts at mobilizing consent for a radical-oppositional position outside the feminist movement was not proving very successful. Nonetheless, it decided to institutionalize the position to which it had itself committed with its first official statement on the technology at the parliamentary level; institutionalization occurred in the form of the *Hagener resolution.*

2.1.2.2 The Trap of Fundamentalism

The resolution on genetic engineering adopted at the Greens' eighth Federal Assembly in

[42] Indeed, the organizations' programs and proclamations usually contain, besides comprehensive specialized criticism, the note that there were also good reasons to reject the technology on fundamental grounds.

February 1986 in Hagen began with a dramatic and fearful scenario: "Mit der rasanten Entwicklung der Gen- and Fortpflanzungstechniken droht die Menschenzüchtung in naher Zukunft Realität zu werden" (quoted after Schramm 1988: 41). It concluded with a rigorous policy definition that demanded an immediate stop to any genetic engineering research, development, and application. This was the only way, it was stated, in which the "Einstieg in das Zeitalter der Gentechnik" (Ibid.) could be permanently prevented. It was a policy definition reminiscent of the Greens' position on nuclear energy[43]. By contrast, the Green position on modern biotechnologies, however, was based neither on a preceding intense intra-party or public debate, nor, as I have pointed out, on a broad consent at the extra-parliamentary level. This basis was yet to be formed and the eighth assembly at Hagen was to be a significant step towards this aim. It primarily was to function as a mobilizing event.

Mobilization, however, did not prove very effective. As a consequence, the resolution of Hagen became to be widely viewed as "recht unglücklich" (Ruprecht 1991[44]). For the work in the Enquête-Kommission it meant that the Green representatives definitely had adopted the role of the »naysayer on principle« and, as Schramm puts it with a flowery statement, despite of all their sensible questions were denied the court jester role and sent to Coventry (Schramm 1988: 42[45]). The possibility of credibly criticizing and changing the position of the Commission majority in the joint working context was hardly existent anymore. The dilemma that the Greens faced (which is the typical dilemma of movement-related parties consisting of fundamentalist orientations and pragmatic constraints) consisted of at the same time having to adequately defend the "absolute moratorium" (Ibid.) in order to preserve the political support of the grass-roots membership and to continue to be open to the experts' opinion in order to preserve political justification for the continuing work in the Commission. For the Party's minority vote which had been announced soon after the Commission had taken up its work, it meant the difficulty of finding a form that was credible in terms of content, without dissociating itself too clearly from the Hagener resolution with

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[43] As Wiesenthal points out, "catastrophic scenarios, apocalyptic forecasts, and an impassioned critique of civilization and capitalism were ... marked features of the 'philosophy' of the early Greens" (Wiesenthal 1993: 204).

[44] Christoph Ruprecht then was spokesperson for the Green Federal Working Group on Genetic Engineering and Reproduction Technologies.

[45] Literally: "Endgültig nach dem Hagener Beschluß wurde den Grünen-Vertretern trotz aller sinnvollen Fragen die Hofnarren-Rolle aberkannt and die Trotzecke zugewiesen".

its demand of a complete stop to genetic engineering development[46].

At the social level, the attempts at mobilization through exaggerated diagnosis and catastrophic scenarios had by no means been unsuccessful - at least at the outset. Yet, continuing mobilization could not equally successfully build on these first successes. As a result, the question of whether the response to a cross-sectional technology could consist of the plain demand for an all-embracing prohibition became more and more conflictual. Concerns grew that people might interpret the resolution of Hagen either as a refusal to co-operate in any way, as the inability to intervene in the political decision-making process (as these processes, always specialized, would remain untouched by the abstract generality of the Greens' position) - or as proof of green self-centeredness and detachment from reality; there was the fear of the party's political isolation in the rDNA debate. In short, the party consent surrounding the exigency of the technology's ban began to crumble[47].

Today, after more than two decades of genetic engineering policy, the technology still presents an issue in Green politics[48]. However, with the alliance with the Bündnis 90 party, which allowed for indirect representation in the Bundestag but implied the setting up of a different political agenda with newly weighted topics, the issue's importance has largely shifted to the Länder and to the European parliamentary level. While attempts at extra-parliamentary mobilization have clearly decreased, internal party struggles on the political effectiveness of radical criticism and resolute rejection in the course of controversy have continuously increased.

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[46] The form eventually chosen was a minority vote that requested no absolute ban but a research moratorium of several years.

[47] This became clear, for instance, in an interview of the magazine *Science* with Bärbel Rust, then parliamentary representative of the Green Party: "As for the Greens, Rust says that their previous hard-line opposition to all forms of genetic engineering has recently been softening. Officially, the party is still demanding that a moratorium be placed on all industrial uses of genetic engineering until more is known about the potential risks. But, says Rust, 'personally I would not be against certain applications, for example research for a vaccine against AIDS or into the treatment of cancer'." (Dickson 1989: 1252)

[48] In an interview in 1991, Christoph Ruprecht denoted the issue a Green "millennium topic" (Ruprecht 1991).

2.1.3 The Networking Approach

In 1986, after the Resolution of Hagen, the uneasiness about the Green fundamentalist approach »materialized« with the foundation of a small non-governmental organization, the *Gen-Ethisches Netzwerk* (GeN). Benedikt Härlin, one of the founders of the network[49], then Member of the European Parliament (MEP) for the Greens and rapporteur of the committee on energy, research, and technology of the European Parliament, criticized the decisions made at Hagen as follows:

> Die waren so eng, daß man nur noch ein fundamentales Nein sagen durfte. And damit kann man keine Politik machen. Keine Bündnisse eingehen. And man soll auch nicht alles verbieten. (Härlin in Die Zeit, 15.4.1988, p.49)

The newly formed organization, instead, did not adopt formal positions on whether or to what extent the technology at issue should be developed and used. Interviewed by the magazine Biotech Europe, members of GeN admitted that "as a part of a democratic movement, they each spoke as individuals, and that indeed, there were many shades of opinion from 'completely against biotechnology' to 'proceed with caution'" (Biotech Europe, Vol. 6, No. 1., 1989, p.17). The refusal to make a declaration of principle must be understood as partly a result of democratic principles, and partly as the attempt to work against the »fundamentalist self-blockade« of the Greens in genetic engineering politics. Härlin bluntly pointed to the latter motive stating that the network's principal aim was "über die Fronten hinwegzukommen, auch über die Doofen-Fronten: hier Befürworter, hier Gegner" (Härlin in Die Zeit, 15.4.1988, p. 49).

While dissociating itself from a radical oppositional stance, the new organization declared itself to be founded on the conviction that genetic engineering would fundamentally change man's relationship with nature and the concern about whether society would master this challenge (GeN, self-portrayal leaflet). In functional terms the organization presented itself

[49] The co-founder, Linda Bullard, belongs to the »prominent personages« of the international rDNA debate. Bullard, who acted as the network's international co-ordinator, worked for some time for the American Foundation of Economic Trends, the director of which is Jeremy Rifkin, the United States' most famous activist opponent of genetic engineering. Bullard established substantial contacts with non-governmental organizations (NGOs) interested in modern biotechnologies in the United States and throughout Europe (in the United States the Washington-based Foundation of Economic Trends represents the GeN).

as a kind of *services undertaking for the generation of information, debates, and alliances* in all fields of the modern biotechnologies' development (Die Zeit, 15.4.1988, p.49). The provision of critical information not or not sufficiently considered and furnished by government and industry was defined as one of the network's major concerns (GeN, self-portrayal leaflet): The GeN was established as a *services enterprise for risk information and risk argumentation* taking into account risks to the natural, moral, and social order.

Underlying the decision to concentrate on information provision and risk communication was the expectation that it was the pressure from an informed public and weight of public critical discourse which presented the most effective tool to promote a more democratic state technology policy[50]. The organizational basis for this aim came to be the Gen-Ethischer Informationsdienst (GID). The GID which had been established by two activists affiliated with the women's and environmental movements was an information service working on the principle of a press agency. The GeN took on the editing of the GID and transformed it into a regularly edited journal on modern biotechnologies providing information on recent developments in science and technology, political regulation, protest politics, and essays on the most relevant topics committed to a technology-critical perspective. Meanwhile, the GeN employs a range of media to spread information including conferences and seminars. These and other informative events often form part of nation-wide issue-related campaigns organized by or carried out with the participation of the network (see point 2.3.1). The politics of campaigning is geared towards what constitutes the organization's second major objective: The building up of a *national network of critical persons, initiatives, organizations and institutions.*

With GeN, an extra-parliamentary node for political mobilization on genetic engineering was created that was explicitly geared towards and organized for the purpose of pursuing a *policy of alliances.* Negating a dogmatic political position as promoted by the Greens, the network founders Härlin and Bullard made the new mobilization base open for sectoralized and specialized debates and that way opened up new opportunities for co-

[50] This expectation was declared to be a realistic one as the technology's use was not considerably advanced yet. Actually, as in the case of the Commission of Inquiry, the time factor contributed to image promotion. While the Commission's chairman liked to emphasize the early institutionalization of genetic engineering as a subject of concern in parliamentary politics, Härlin accentuated the (allegedly) early point in time at which the new social movements took up their »watchdog function«: "Eigentlich sind wir eher untypisch, normalerweise entstehen soziale Bewegungen erst, wenn ein Kind in den Brunnen gefallen ist. Wir sind eher zu früh." (in Die Zeit 15.4.1988, p.49)

ordinating the different critical approaches to the technology at issue under jointly defined action goals. In short, the network's organizational design allowed for action on selective issues and with specific policy goals - action, for instance, in the form of single-issue campaigns. (It is worth noting, however, that the GeN soon came to be considered the most radical extra-parliamentary protest group besides the feminist initiatives and, actually, soon started to cultivate this image; this may be explained, first, by the foremost fundamentalist individual convictions of the network's staff standing from the outset behind the official »non-position«; second, the relatively high fluctuation in the network's staff[51] which increased the rate of radical technology opponents; and third, the emergence of more and more competitors on the protest scene mostly pursuing pragmatic politics which suggested taking up the role of the »incorruptible« to retain a place in the activist limelight.)

Unlike in the case of the nuclear energy issue, the rDNA issue did not produce a protest policy of mass mobilization and demonstration. It generated, instead - as the subsequent sections will demonstrate - a nation-wide protest network that at strategic points in time mobilizes into collective action[52]. Collective protest at the national level is typically triggered by a small number of what may be called network »centers«, organizations which are of special importance to the maintenance of the protest network; the GeN clearly forms one of these centers. Collective protest at the local level, on the other hand, is usually initiated by citizens' action committees.

2.2 Organizational Structure

Fostered by GeN's policy of alliances in the second half of the 1980s, there developed a loosely tied information, contact, and action network which, through public information, scientific expertise and political campaigning, aims at influencing the formation of public opinion as well as political decision-making.

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[51] Both founders of GeN in the meanwhile have left the organization. Bullard has taken up a position at the International Coalition for Development Action in Brussels; the journalist Härlin currently works for Greenpeace.

[52] For an activist discussion on why the issue "bewegt nicht die Massen auf der Straße" (Gill 1990: 39) see Gill (1990) and Göttinger Arbeitskreis gegen Gentechnologie (1991).

This network, which ranges from the local to the national level, consists of a great deal of initiatives, groups and organizations of varying size, structure, scope, and ideological orientation, and different frames and action strategies concerning the issue at stake. Integration of these initiatives, groups, and organizations occurs on the basis of various structural, personal, and issue-related thematic ties.

One salient characteristic of the protest network, as Kaiser (1990: 85-94) explicates, is its *dual structure*. On the one hand, there are *independent local citizens' groups* either founded on the concern about health and environmental hazards that might emanate from specific public or private genetic engineering projects or advancing this concern as part of a broader political program.

On the other hand, there are *supraregional organizations* which, similarly, were either expressly founded on the rDNA issue or have identified specific issues of rDNA technology as important for their overall field of interest and, therefore, have taken up these issues in their programs. The former groups and initiatives which constitute the more radical branch emerged from the organizational context of the anti-nuclear energy movement, on the one hand (e.g., GeN), and the feminist wing of the women's movement, on the other (e.g., Gen-Archiv Essen, national contact of FINRRAGE). The latter organizations are more formalized and professionalized. They include eminent organizations of the environmental movement (such as the Green Party, Öko-Institut Freiburg, Umweltinstitut München, Bund für Umwelt and Naturschutz Deutschland, Deutscher Naturschutzring, and, since recently, Greenpeace) as well as »established« pressure groups concerned with animal welfare, consumer protection, and alternative agriculture (for instance, Deutscher Tierschutzbund, Verbraucher Initiative, Bundesverband Naturkost Naturwaren Einzelhandel, Arbeitsgemeinschaft Bäuerliche Landwirtschaft) (Bradish 1988: 285-291).

Though being part of very different organizational settings, the two "poles" (Kaiser 1990: 90) are strongly interlinked. The supraregional organizations, on the one hand, document, publish, and file the work of local groups, and represent their interests towards a major public and the political institutions. By doing so, they capitalize on the local protest activities insofar as they serve as evidence of an unfavorable public opinion calling for a more restrictive technology policy. On the other hand, the local groups are supplied with scientific expertise, legal advice, relevant information, and issue-related thematic support for the pursuit of their specific protest objectives.

Some of the supraregional organizations occupy the position of »network centers«. They are of special importance to the sustenance of the protest network as they are either active in initiating and/or organizing joint campaigning (esp. GeN[53], Green Party[54], Verbraucher Initiative[55]) or provide the network with particularly important protest capital, such as scientific and legal expertise (esp. Öko-Institut Freiburg[56]), financial and organizational resources (esp. Green Party), or general information on the development, application and critical assessment of the technology at issue (esp. GeN). Despite their special role, none of the organizations takes up a hegemonic position and dominates the processes of opinion-formation and decision-making of collective protest as a whole.

There are two major contexts within which since the second half of the 1980s temporarily stable coalitions of the various initiatives, groups, and organizations have been formed to

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[53] The GeN has acted as co-organizer of the campaign against the recombinant hormone bovine somatotropin ("Kampagne gegen das Rinderwachstumshormon and den Einstieg der Gentechnik in den Tierställen") and co-ordination center of the campaigns "Keine Patente auf Leben" and "Essen aus dem Genlabor? Natürlich nicht!". Currently, it is co-ordinating a campaign against the deliberate release of genetically modified organisms and two campaigns against the application of genetic engineering to humans entitled "Ächtung der Keimbahnmanipulation" and "Genomanalyse - der Gesetzgeber muß handeln!".

[54] According to Ruprecht (1991), the initiatives for the campaign against the recombinant hormone bovine somatotropin (rBST) and the campaign against the patenting of life forms both came from the Green's BAG.

[55] The *Verbraucher Initiative* (VI), founded in 1985, is concerned with all issues concerning ecological consumer protection. In the field of modern biotechnologies, the consumer organization's work has focused on the fight against the use of genetically engineered growth hormones, like rBST, in animal husbandry and the use of genetic engineering techniques in the production of foodstuffs. The VI has acted as the co-ordination center of the anti-rBST-campaign and co-organizer of the campaigns against the patenting of life forms and genetically engineered foodstuffs.

[56] The *Öko-Institut Freiburg*, founded in 1977, has gained its reputation foremost with well-founded critical studies on the safety of nuclear reactors, the disposal of nuclear waste and related problems, and with its work on an alternative energy supply. Its foundation in the context of the controversy about the Wyhl nuclear reactor is repeatedly referred to as the birth of »alternative science«. In 1986, the Institute established a special working group on genetic engineering with the task of directing public attention more intensely to the ecological and social effects of the technology's application to non-human nature. To this end, the organization has been working on the clarification of the different levels of risk involved and the explication of criteria for safety research. Emphasis is placed on the investigation of ecological consequences and risks to human health associated with the deliberate or non-deliberate release of genetically modified organisms as used in industry and agriculture. In the spring of 1986, the Institute, in co-operation with other ecologically orientated organizations, held a public symposium on "Die ungeklärten Gefahrenpotentiale der Gentechnologie" (Kollek, Tappeser & Altner 1986). This conference represents a major landmark of public risk discourse. As an independent research institute the Öko-Institut provides other critics' groups with expert opinions on specific genetic engineering issues. Moreover, it brings its critical expertise to bear in the half-public/half political sphere of commissions like the parliamentary Commission of Inquiry and the Bioethics Commission Rheinland-Pfalz, which called in experts of the research institute.

organize co-ordinated action on selected matters. These are, first, nation-wide single issue campaigns and, second, local protest against specific public and private genetic engineering projects. In the following, these two contexts shall be depicted.[57]

2.3 Protest Practice

The dual structure of collective technology protest does not merely refer to the existence of interconnected local and supraregional network »poles«. It also characterizes the action repertoire of technology protest: Local protest against concrete genetic engineering projects, on the one hand, and nation-wide campaigning on selected technology issues, on the other, represent the core of this action repertoire.

2.3.1 Supraregional Protest and the Politics of Campaigning

Due to their weak strategic location[58], public interest groups have little chance of influencing political decision-making directly. Even if they are conceded formal access to the policy making process, they only rarely have much influence. In January 1994, the DNR put an end to its participation in the Central Commission for Biological Safety (ZKBS). With the Genetic Engineering Act, the ZKBS had been established as a permanent body to judge on the safety of projects. The new law required that the ZKBS's membership be extended by the addition of an expert and his alternate from the environmental organizations; in autumn 1991, two BUND members took over these expert positions[59]. The reason stated for the decision to

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[57] As this short portrayal points out, the basic structure of collective protest in the field of genetic engineering fits the organizational pattern which new social movement theorists have identified as distinctive of their subject of investigation. Neidhardt's pertinent characterization of this pattern as "mobilisierte Netzwerke von Netzwerken" (Neidhardt 1985: 197) is very much to the point also with respect to this protest actor.

[58] An organization occupies a *strong strategic position* if it commands resources - energy, money, food - that are indispensable to the operation of society.

[59] The BUND is a member of the parent organization Deutscher Naturschutzring Bundesverband für Umweltschutz (DNR) which represents about 2,8 million members of organizations in the fields of animal welfare and nature and environmental protection (Löhr 1994: 92). The DNR has a right of proposal for the appointment of the two ZKBS experts in the field of environmental protection. The experts appointed in 1991

give up participation was that it had not been possible to shape the Commission's work to the advantage of environmental protection. The environmental organizations determined the main reasons for this lack of influence as the ZKBS's structural conditions and the strict rules of confidentiality (Löhr 1994: 10).

The chance of influencing corporate decision-making directly are even smaller. Technology protesters may be able to impede and protract specific industrial projects by the legally provided possibility of filing objections or by destructive action (as the next section will show). Rarely, however, have they the possibility of entering into formal negotiations with company representatives enhancing (even though only slightly) the chance of influencing corporate technology policy more directly. In the German rDNA debate, such round tables talks, as they were carried out by the German subsidiary of Unilever and the Wissenschaftszentrum Berlin für Sozialforschung (WZB), still are the exception to the rule.

In view of their limited bargaining power and the fact that the fundamentalist politics of their parliamentary »mouthpiece«[60] in state technology policy did not prove very effective, protest actors in the genetic engineering controversy - as is typical of civil protest actors - have relied on *public opinion* as their primary avenue of pressure. That means, their main protest tool has been *persuasive appeals* designed to influence people's opinion directly via face-to-face communication and/or indirectly in the form of protest documents or by attracting the attention of the mass media. Among the different types of action geared to the mobilization of legitimacy for their cause by gaining popular support, *campaigning* on selected issues at a nation-wide level is the most elaborate[61]. The struggle for the public's attention through the media, publishing literature, the staging of symbolic events and by setting out protest

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were the biologists Martha Mertens who acted as full member and Christa Knorr who acted as Mertens' alternate.

[60] Actually, the Greens participated only sporadically in parliamentary politics. In the 12th legislative period (1990-94) they did not manage to get into parliament. In the 13th legislative period they re-entered parliament in alliance with the Bündnis 90 party.

[61] The joint drawing up of a memorandum on the draft law on rDNA technology and the performance of »action days« against this law (comprising amongst others the organization of information stands and discussion meetings of critical groups) present another landmark of collective technology protest. The initiative for the "Memorandum für ein Gesetz zum Schutz von Natur and Menschen vor den Gefahren der Gentechnologie" (DNR & BUND 1989) came from BUND and DNR and consists of a comprehensive and detailed criticism of the draft law and the critical organizations' specific demands regarding a law on genetic engineering.

concerns at meetings, specialists' congresses, and information stands (for instance, at the "Grüne Woche") has been largely integrated into the politics of campaigning.

Since 1987, one major campaign has been launched respectively on the subjects of recombinant hormones in agriculture[62], patenting of life forms, the deliberate release of genetically modified organisms into the environment, germ line therapy, and genome analysis, and three major campaigns were started on the issue of genetically engineered foodstuffs[63]. In fact, in three different organizational contexts genetic engineering currently is campaigned on as a matter of consumer protection against unhealthy diet and nutritional health risks: Genetically engineered foodstuffs is the subject of a joint campaign co-ordinated by the GeN and of two campaigns carried out independently by the big environmental organizations BUND and Greenpeace (Der Spiegel, 15/1997, pp. 210-221).

One distinctive characteristic of the campaigns is the production of *multifarious information material*. The information material spread includes memoranda, brochures, folders, posters, postcards, and stickers[64]. It seems fair to state that the campaigns are distinguished not only by the multifariousness of the information material but also by its professional layout[65] and information processing. The use of condensing symbols (of which the "Turbo-Kuh", the "Krebsmaus", and the "Killertomate" are probably the most popular

[62] It was the impending EU-approval of a dairy product, genetically engineered bovine growth hormone (commonly known by the acronym rBST following from its scientific term recombinant *b*ovine *s*oma*t*otropin) which prompted the first alliance and collective action of groups critical of genetic engineering. At a press conference held on 19 August 1987, the "Kampagne gegen das Rinderwachstumshormon and den Einstieg der Gentechnik in den Tierställen" introduced itself to the public. The campaign's aim was to stop the commercialization of one of the »flag-ship« products of the biotechnology industry and the first genetically engineered agricultural product to be licensed in the European Union.

[63] The selection of the campaign issues concerning the non-human applications of genetic engineering was significantly influenced by the developments at the European level. Recombinant BST, deliberate release, patenting of life forms, and novel food are issues which in the late 1980s were placed on the agenda of the European Union for regulatory decision-making.

[64] Some of the campaigns were started with the publication of the campaigns' manifesto in several supraregional newspapers. This publication, expounding the protest case, included a list of the campaign's "Mitträger" (supporters) counting up to 30 or 40 groups and organizations mostly from the environmental-, consumer-, alternative agriculture-, and animal welfare movement. To be a campaign supporter can imply different degrees of involvement: Support may be restricted to the provision of a signature for the campaign cause or financial aid; it may imply participating in strategy discussions in the preparatory phase; or it may take the form of active involvement in all stages of the campaign.

[65] The professional layout is the result, among other things, of the financial resources that the Green European parliamentary party furnished for the material's production.

ones) is one major expression of this professionality.

Another salient characteristic of the campaigns is the *staging of symbolic events*. In the context of the anti-rBST-campaign, for instance, the Verbraucher Initiative, in co-operation with the Arbeitsgemeinschaft Bäuerliche Landwirtschaft, blocked the entrance to the head-office of the U.S. pharmaceutical enterprise Monsanto in Düsseldorf propagating "Unsere Kritik: Monsanto macht die Milch zur Sau" (non translatable German play on words stating that Monsanto was wrecking the milk). Another more current example is the "BUND-Killertomaten-Tournee" (Lehnen 1997: 9). From July to October 1997 BUND in co-operation with the parent organization of the health shops (FdR) went on a tour of Germany with a "terrifying" (Ibid.) giant inflatable tomato (which is seven meters by seven and equipped with immense teeth). BUND stopped in more than 50 towns to present the symbol of its food campaign to the public (see appendix IV. p.285).

Mobilization in the context of the campaigns also includes activities aimed at exerting more direct pressure on the political system. These activities, mostly carried out by the campaigns' co-ordinating centers (see fts. 53, 55), range from the collection of signatures against the respective technology application and the distribution of protest letters addressed to the responsible authorities, to participation in public hearings and the joint filing of legal objections.

The campaigns (except the food campaigns by BUND and Greenpeace) represent the action contexts within which the most wide-ranging and enduring protest alliances have been built in the German rDNA controversy. At least during the time of planning thematic, organizational, and action related matters, they intensively co-ordinate and fully utilize the informational, personal, scientific, and financial resources of the various groups and organizations involved in the debate over genetic engineering. Nation-wide campaigning constitutes the major technique both to face the established institutions with a unified opponent and to recruit new adherents. However, alliances are built also at the local level to enhance protest effectivity.

2.3.2 Local Protest as Symbolic Action and the Seizing of Administratively Regulated Rights of Participation and Objection

Up to the 1990s, collective protest at the local level was directed above all against specific genetic engineering projects of the chemical industry; in the 1990s, public and private projects have been equally protested. The main initiative for collective action has come from citizens' action committees concerned with nature and with health hazards feared to be associated with the projects planned to be carried out. The search of these local groups for financial and specialists' support for their protest (esp. scientific expertise and/or legal advice) has generated ad-hoc coalitions of local, regional and supraregional groups and organizations. Those who act on the spot, however, are first of all the citizen activists; the bigger organizations usually provide their support from the background. The major types of action that collective protest at the local level includes are participation in public hearings, the filing of legal objections and the staging of symbolic events.

The focus and nature of local protest has significantly been shaped by the process of regulatory decision-making. Before the Genetic Engineering Act came into force, collective protest focused on opposition to the approval of *facilities for the production of genetically engineered pharmaceuticals* - the only industrial projects at that time. Protest was largely restricted to the seizing of administratively regulated rights for participation and objection. As has been explicated under point 1.4, the numerous objections filed in writing and those voiced at the public hearings (then provided by the Federal Emissions Act) and the subsequent decision of the Administrative Court of Hesse to make permission to build and operate genetic engineering facilities conditional on an adequate legal basis brought about a quasi-blockade of industrial activity in the technology field.

Almost all of the leading chemical enterprises were confronted with some form of ad-hoc coalition protesting against their plans to use genetic engineering in pharmaceutical research and/or production. In the case of Bayer it was the local initiative Coordination gegen Bayer-Gefahren which organized for collective protest[66], in that of Schering the local action group Schering Aktions-Netzwerk, and in the case of Behringwerke Marburg (a subsidiary

[66] For this group's position on genetic engineering, see Coordination gegen Bayer-Gefahren (1991: 38ff.).

of Hoechst) it was the citizens' group Fra-GEN. The Hoechst company was itself faced with the Aktionsbündnis gegen Gentechnologie Hoechst, a coalition of technology critical groups which had been formed on the initiative of the citizens' action committee Höchster Schnüffler un' Maagucker, the company's long-standing local »watchdog« on safety and environmental matters[67]. The coalition comprised GeN, BUND, the Bundesverband der Tierversuchsgegner, the Öko-Institut Freiburg and other environmental organizations which the citizens' action committee had successfully mobilized for its interests. Hoechst actually is the company which found itself in the most serious trouble in the late 1980s: It was involved for several years in a legal battle with the Aktionsbündnis objecting to the construction of a factory to produce genetically engineered human insulin[68].

While the citizens' groups Schering Aktions-Netzwerk and Fra-Gen were founded around a specific concern about rDNA technology, the local groups Höchster Schnüffler and Koordination gegen Bayer-Gefahren identified the technology as important for their overall field of interest and, therefore, took up the issue in their action programs.

With the Genetic Engineering Act, which largely removed the public participation hurdle for the construction and operation of industrial production plants, the focus of local protest shifted to participation in written and oral authorizing procedures concerning planned *releases of genetically modified plants into the environment* applied for by public and private institutions (see GID 1993, No. 83, p. 3). Indeed, since that time, local protest against the use of rDNA

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[67] The *Höchster Schnüffler un' Maagucker* are a small group of environmentalists in the Frankfurt/M. quarter Höchst which, for more than 15 years, speaks up for local environmental interests. "Zwangsläufig" and "ständig" the group is confronted with the "größten Emittenten" of the vicinity, the company Hoechst (personal correspondence with the group in 1991). The group's response to this confrontation mainly consists in seizing administratively regulated rights of participation and objection, continuously collecting and processing relevant company data and continuously scrutinizing installation-related corporate policy on the basis of this data. The aim is to reveal imperfections in installation-related corporate safety and environmental policy, to make them public, and to initiate the required measures. The »watchdog« function corresponds with the group's self-image and also is perceived as such by the »subject of control«; according to Hoechst's press and public relations officer in the area of environmental protection/local policy the citizens' initiative was brought into being for the company's public control (Schönefeld 1994: 16). For an interview with the group concerning its history, development and future on the occasion of its fifteenth anniversary, see Frankfurter Rundschau, 6.10.1995.

[68] The Höchster Schnüffler un' Maagucker initiated the first lawsuit concerning a large-scale experimental plant for the production of a pharmaceutical, human insulin, in Germany. For a contemporary assessment of this conflict by the managing director Hansgeorg Gareis, see manager magazin 4/1988, pp. 190-194; for a look back on the conflict by the Hoechst manager Alexander Dahmen on the occasion of the local action group's fifteenth anniversary, see Frankfurter Rundschau, 6.10.1995.

technology in pharmaceutical production ceased to play a role. Being deprived of the possibility of advancing objections in public hearings in this field of application opposition, however, did not translate into other forms of action. The issue may come up again from time to time, but then it is likely to become a subject of discussion, for instance, in the context of the company organized "Gesprächskreis Hoechster Nachbarn" rather than as a subject of protest[69]. In fact, research and production in the pharmaceutics field have significantly gained in acceptance at the local level (and at the national level as well as is pointed out under point 2.4). Things are looking very different, however, in the agricultural sector. Numerous objections to outdoor research on and production of genetically modified plants have been raised in writing and public hearings. It was, in particular, the complexity and lengthiness of the public hearings which gave cause for complaints on the side of the public and private institutions that had applied for field trials.

Since the Act's revision abolished the requirement of an oral hearing before permission to carry out field trials, these institutions are faced with a different but not much less difficult situation. Ad-hoc coalitions of environmentalists and local citizens' groups[70] have not contented themselves with filing written objections. Instead, they have increasingly engaged in symbolic actions. These range from the positioning of »sentries« and danger signs near testing grounds to the forming of torch chains (Fackelketten) around testing grounds to occupations and blockades of fields intended for trials, made visible over a wide distance by the raising of huge banners (Mühlenberg 1997, Strodthoff & Riewenherm 1996; see appendix IV. p.286). The magazine Der Spiegel reports:

> Eine neue Protestform gegen Freilandversuche mit gentechnisch manipulierten Pflanzen breitet sich aus: Im mittelhessischen Wölfersheim and im südbadischen Buggingen blockieren and besetzen Naturschützer die Äcker, auf denen genveränderter Mais and Raps ausgebracht werden soll. (Der Spiegel 25/1995: 16)

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[69] Genetic engineering has already been the subject of discussion in the local round table that the Hoechst company established in 1993 to discuss safety and environmental questions with its neighborhood including the Höchster Schnüffler and other citizens' initiatives (Dreyer & Kesselring 1996; see also Höchster Kreisblatt, 28.1.1995, Frankfurter Westlicher Stadtanzeiger, 15.2.1995).

[70] Actually, these citizens' groups are not the same as those of the late 1980s. This is partly due to the different locations of the protested projects, partly due to the different field of technology application protested which has not only attracted environmental groups and citizens concerned about their safety in living within the sphere of chemical companies but also citizens from very different contexts, such as anthroposophic circles or parent initiatives for a healthy diet.

Recently, there have also been actions of a more radical kind: Several fields on which genetically modified plants had already been brought out were completely destroyed. It is not the citizens' groups or the bigger environmental organizations which is supposed to have carried out these illegal actions but a protest minority vaguely described as composed of militant environmentalists and "*Autonome*" (Focus 49/1996, p.72)[71].

In the chemical industry, Schering and Hoechst, or more precisely, their subsidiary AgrEvo, is most affected by the legal and illegal forms of protest against deliberate releases[72]. AgrEvo is currently the only domestic chemical enterprise in Germany that carries out field trials with genetically engineered organisms, namely plants in the context of agrochemical research and product development. Via AgrEvo, the two big companies Hoechst and Schering seek to ensure two markets: that for genetically engineered seeds and that for plant-protective agents to which the seeds are adjusted. The destructive activities, however, significantly retard the evaluation of the field trials regulated by the Genetic Engineering Law and thus the marketing of the genetically modified seeds.

The massive - legal and illegal - local protest against field trials with genetically modified plants all over Germany to some extent reflects the sentiments of a population, that in most part, is strongly opposed to the use of rDNA techniques in the foodstuffs production chain; the fact that one of the foremost projects in this field of application are plants made resistant to herbicides (for instance, to the Hoechst herbicide Basta) surely does not enhance public acceptance.

With the curtailment of formalized public participation, both the form and argumentation of

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[71] In 1996 alone, fourteen testing grounds were destroyed (Der Spiegel, 46/1996, p. 96). For instance, in May genetically modified rape in Tarnow (Mecklenburg) was uprooted by a group called "Autonome Genome", in June genetically modified maize in Friemar (Thüringen) was »beheaded« over night. In October of the preceding year in Wölfersheim (Hesse) unknown persons destroyed genetically modified rape by using a herbicide. The damage for each destroyed field amounts to approximately DM 150.000 (Ibid.); see also Focus, 49/1996, p. 71-72.

[72] The company AgrEvo was founded on 1 January 1994 as a fusion of the two plant protection sectors of Hoechst and Schering. According to AgrEvo's head of management, Gerhard Prante, the company aims, among other things, at consolidating its position as the world's second biggest producer of plant-protective agents (first place is held by Ciba Geigy; Frankfurter Allgemeine Zeitung, 14.1.1994). AgrEvo holds a ten per cent share in Germany's most important seeds producer, the Kleinwanzlebener Saatgut (Die Zeit, 8.12.1995, p. 25).

local protest has to some extent »radicalized«. However, protest discourse at the local level never has been dominated by an all-embracing fundamentalist approach. Instead, it has always focused on the issue of risk, more precisely, on the potential »classical« risks to human health and environment which could result from the respective private and/or public genetic engineering project at issue. While this looks different in the case of supraregional protest, the argumentation of this nationally oriented collective actor has clearly shifted from an ethically motivated fundamentalist discourse to a more specialized and sectoralized discourse on risk.

2.4 From Fundamentalist Discourse to Discourse on Risk

Taking a look at the development of the general thrust of protest argumentation since the mid 1980s one can observe that, with the growing concretization of individual forms of application, the culturally and ethically motivated debate of principle has given way more and more to a *sectoralized and specialized discourse on risk* in the different fields of application.

Cultural and ethical argumentation criticizing genetic engineering in terms of a scientifically based conception of truth, a de-moralization of nature, and a subjectivist conception of morality - that is, in terms of prevailing societal value orientations favorable to the technological modernization in highly industrialized Western society (van den Daele 1990: 14) - is still an important resource in protest discourse. However, it is no longer predominant. Today, the principal line of reasoning is political and cognitive-empirical argumentation about potential risks to generally appreciated societal values such as human health and safety and a clean environment and, on the basis of a broadly defined concept of social compatibility (Sozialverträglichkeit), to the social and political structure of society (defined, for instance, as the introduction or reinforcement of wrong priorities in Public Health, discrimination resulting from identifying genes that produce diseases, exacerbation of economic inequities among nations, or a further concentration of power in the hands of larger companies). *Risk* in the late 1980s has developed into the central theme, slogan, and impetus for commitment in social protest against rDNA technology. Since then, even fundamental objections are typically operationalized politically as opposition to risk (van den Daele 1990: 13).

Correspondingly, claims for political regulation predominantly are justified by pointing to the governmental responsibility for protecting against danger. In contrast with the ethically based fundamentalist discourse, risk discourse is not in the first place a moral appeal to have respect for nature and naturalness. However, its special political appeal lies in the *moral imperative* it conveys: Society has a moral obligation to protect people from risks. Arguing that people get involuntarily exposed to technology-induced risks protest actors call into question the morality of industry officials and the legitimacy of current systems of control.

The reason for this change in protest argumentation can be assumed to lie at least partly in a special experience of controversy; the experience that ethically motivated fundamentalism is effective in accelerating the dynamics of technological controversy at the outset but in the long run can only be a politically effective protest resource when it is backed by references to potential hazards for man, environment, and society.

As far as the big environmental and consumer organizations and parts of the Green Party are concerned, the shift to a risk focused perspective on genetic engineering has gone along, first, with a more differentiated evaluation of the technology and the declared acceptance of some of the technology's applications[73]. The latter holds especially true for the field of pharmaceutical research and application (Junghanß 1990: 12). Second, it is linked to the pursuit of a more »pragmatic« policy allowing negotiation and compromise (for instance, in the Unilever round table talks). In view of the fact that more and more genetic engineering products entered the market, the widely stated argument of this portion of the technology protesters goes, the goal could no longer be to stop the technology but to positively influence its consolidation in science, industry, and society. Not merely public opinion-formation but negotiation with political and industrial actors as well would represent a major strategy for reaching this goal. By contrast, some other protest actors such as the feminist groups and the GeN still proclaim fundamentalist opposition and refuse to make formal compromises on

[73] For a plea for a differentiated assessment of genetic engineering by environmental organizations in the context of the debate on »sustainable development« see Katzek (BUND) & Spangenberg (Institut Klima Umwelt Energie) (1994). For a »Green plea« for a differentiated evaluation and a pragmatic political approach see Kiper (1996); Kiper is a member of the Bundestag and spokesperson for research and technology policy of the Parliamentary Bündnis 90/Die Grünen Party. Several individual members in parliament and some of the Greens' regional associations have modified their position of unequivocal opposition to genetic engineering. Note also that in about 1989 the ethically motivated fundamentalists generally lost their dominant position in the formation of the Greens' political goals and objectives.

programme and strategy (the former technology opponent, however, plays hardly any role in current public debate). Not surprisingly, the »pragmatic turn« of a portion of technology critics has generated intense intra-protest debates along the lines of fundamentalism/pragmatism[74].

While protest argumentation to some extent has »de-radicalized« and negotiation and compromise have gained more weight in protest policy - at least at the national level - the primary target of technology protest has not really changed; now as before it is industry.

2.5 Industry as a Priority Topic and Target

All of the principal technology promoters and users, government, the scientific community and industry, are major targets of genetic engineering protest in Germany. The latter, however, clearly represents the priority target and topic of collective protest. The way in which industry uses the technology and the potential risks associated with this use form the core of protest discourse and activities.

Written documents and oral declarations typically define protest causes and opponents in industry-related terms such as multinationals, genetic engineering industry, industrial society, and industrialism and/or as the different industrial enterprises involved in genetic engineering activities. Simultaneously, industrial projects are the focus of protest action directed against concrete technology projects. In the case of »indoor« research and production, industrial projects clearly have been the favorite protest target; in the case of »outdoor« research and development, protest has been directed equally against projects carried out with industrial and with public funds.

The special target in private industry, in its turn, is the *big industrial enterprise*; as Gill puts it in more drastic terms: "Der Teufel ist immer der Multi!" (1990: 41[75]). To be more precise, it is the *big chemical enterprise* which is the priority target. It is this economic actor who

[74] For this debate see, among many others, Katzek & Spangenberg (1994) and the reply by Haas (GeN/Umweltinstitut München) (1995).

[75] This comment forms part of Gill's criticism of the fact that protest largely leaves aside the projects in the more than a thousand laboratories and facilities of universities and Max-Planck-Institutes.

finds itself especially exposed to collective protest, particularly to company-specific criticism and symbolic and legal actions.

The characteristics that make big enterprises a favorite subject of protest discourse and action are, on the one hand, their very »bigness« and, on the other, their seemingly pronounced profit-orientation; both characteristics are instrumental to the strategy of public mobilization. While their bigness, that is, their increased visibility, assures some general public attention, their profit-orientation promotes a moralization and popularization of the genetic engineering issue: It allows the rDNA issue to be defined as a question of *social justice*. In this definition the societal consolidation of genetic engineering as a high-risk technology is the result of the economic strategies of a few multinationals which trade public safety, a clean environment, and morals for private profits - and of political decision-makers that act as the »agent« (»Erfüllungsgehilfe«) of these alleged pillars of the German economy[76]. In other words, private profit is represented as the guiding motive for technology application and risk taking and thus that what constitutes the real hazard to society. The means of mobilization is to point out the winners (industry) and losers (the rest of society) of the technology's use and to declare this use a zero-sum-game: The economic actor gains at the expense of the rest of society. The following quote by GeN illustrates this *Profits versus Public Good* argumentation:

> Um die wirtschaftlichen Interessen der Gen-Tech-Industrie zu sichern, wird der Bevölkerung das "genetische Restrisiko" zugemutet. (GeN folder)

With this type of risk communication, collective protest successfully avoids getting entangled in the moral ambivalences that are almost inevitably implied with objections to the technology's use in public medicinal research and human genetics - provided that it leaves out the industrial health care sector, something that it has actually widely done in the 1990s[77]. It is also due to these moral ambivalences that collective protest since that time has

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[76] In this sense the Verbraucher Initiative in a position paper on modern biotechnologies states: "Die Industrie schafft Zwänge, denen die Politiker nur gesetzgeberisch 'hinterherhinken'. ... Eine öffentliche Diskussion über die Gentechnologie soll nicht stattfinden, um die Expansion der Industrie nicht zu behindern" (Verbraucher Initiative 1988).

[77] On the one hand, it is one's own sympathy with the sick, on the other, the generally highly appreciated individual right of self-determination and the claim to unrestricted medicinal treatment which make this field of application a rather intricate protest issue. To counter the claim that people should have the right to freely decide on their own body according to their own judgement with the demand for respect for the naturalness of human

concentrated on issues pivotal to the technology's commercial exploitation outside the health-care sector.

The main reasons for the decision to focus on big *chemical* enterprises can be determined as the following: First, there is the simple fact that from the outset the private-sector activities in the commercial exploitation of genetic engineering have been concentrated in these companies (see Chapter I. point 3); consequently, they have largely absorbed social protest (today, in view of the fact that the food industry has definitely entered the genetic engineering business, protest actions are increasingly directed also against this industrial sector). Second, these companies belong to an industrial sector which, since the 1970s in the context of an ever intensifying and extending environmental debate, has time and again been the focus of public criticism; consequently, the public is particularly susceptible to criticism directed against them. As the economic pioneer in the new technology field and object of a relatively high public scrutiny, the big chemical companies present »rewarding« protest targets. For reasons of illustration one more quote, this time by the consumer organization Verbraucher Initiative:

> Mit herbizidresistenten Pflanzen and der Entwicklung von Totalherbiziden ("Basta" von Hoechst) wird die Giftlawine in der Landwirtschaft trotz gesundheits- and umweltgefährdender Auswirkungen beschleunigt. (Verbraucher Initiative 1988)

The most direct effects of the strategy of embarrassment and confrontation employed against the chemical industry have been delays in the approval of production facilities and products and subjection to a Law which, without this protest policy, might have been less restrictive in its original form or even would have not been passed at all. As a more indirect effect the sector - once again - has been made a public issue. By direct activist mobilization and mass media resonance, collective protest has exposed the sector to the inquisitive looks of a critical, sometimes hostile public. In terms of mass media resonance, it is local protest against concrete technology projects and the two campaigns of BUND and Greenpeace on genetically engineered food which have been the most effective protest events. It seems reasonable to assume that it is above all the spectacular nature of these events and the socio-cultural

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nature or forestallment of more general undesirable social and political developments implies taking the risk of being put into »moral offside«.

saliency of the food issue which have attracted mass media attention. By contrast, one can hardly find any press reporting on the other campaigns. The main reason here might lie in the fact that these jointly organized campaigns have been run with a much lower budget and therefore have deliberately concentrated on opinion-formation in smaller »publics« instead of the larger public via extensive and expensive mass media work.

However, as the next chapter aims to demonstrate, up to now, mass media discourse from the outset of industrial uptake of genetic engineering has been a critical political factor for the chemical industry. Also in those times in which the industrial sector did not represent the focus of genetic engineering reporting, the mass media provided a forum for a rather critical assessment of the new technology and its different fields of application and thus at least did not necessarily encourage a favorable public climate for the technology's commercialization.

3. Mass Media Discourse

It forms part of the »standard complaints« of the chemical industry that mass media reporting overemphasizes potential technology risks and downplays potential technology benefits[78]. While the following exposition does not aim to verify or falsify this claim, it intends to point out that mass media discourse actually has been a critical factor for the commercialization of rDNA technology. The continued prominence of artificial-life themes in mass media reporting and the intensive and extensive discussion of the technology's risks - although well balanced by typically weighing them against the technology's benefits - has contributed to the creation of a rather unfavorable public climate. It will also be argued, however, that mass media risk discourse of the mid 1990s is much less sympathetic to technology protest as the main »sponsor« of the risk issue than it was in the late 1980s.

[78] For this view see, among many others, Bayer AG (1993) and Brauer (1994); Brauer is the official responsible for biotechnology and research in the central public relations office of the Hoechst company.

3.1 The Artificial-Life-Discourse

Genetic engineering attracted its first mass media attention in the early 1980s. At this time the rDNA issue formed part of reporting on the rhetorically rich topics of modern reproduction technologies. »Test-tube baby«[79], »surrogate motherhood«, »sperm banks« etc. were the typical catchwords in the context of which the first references to genetic engineering were made. These first references were mostly concerned with the technology's application to humans, such as human genome analysis, genetic testing, and germ line therapy.

Many of these first press reports embedded the rDNA issue into the same socially highly resonant horror scenarios which since the late 1970s formed an integral part of media reporting on reproductive technologies. The literary context of these horror scenarios ranges from Shelley's "Frankenstein" over Goethes "Zauberlehrling" (sorcerer's apprentice) to Huxley's "Brave New World". Rhetorically rich and well embedded into the popular culture, the blasphemous products of a presumptuous science - artificial homunculi, standardized and cloned human beings, monstrous combinations of man and animal, or even man and machine - had been identified as rewarding themes of reporting on the progresses in reproduction technologies[80]. In the early 1980s, when first opinions in favor of a political perspective that views both reproductive and genetic technologies as the peak of man's hubris of domination of nature were expressed, they became also popular themes of news reporting on genetic engineering[81].

Today, the *artificial-life discourse* constitutes an integral part of mass media reporting on genetic engineering[82]. It is employed to provide reports with a technology-critical thrust as

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[79] The event which caused reproduction technologies to become an essential part of media reporting on the progress of the life sciences was the birth of Louise Brown, the first baby produced by in *vitro* fertilization (that is, by adding spermatozoa to egg cells growing in laboratory glassware) in July 1978.

[80] Besides the »negative heroes« Frankenstein and the Zauberlehrling, continuously used catchwords of the artificial-life discourse are "scientists playing God", "the eighth Day of Creation" and "man made to measure".

[81] In these early press reports references to the misuse of human genetics in the Third Reich and concerns about a technologically induced new type of eugenic selection of "life not worth living" (lebensunwertes Leben) played an important role.

[82] Most recently, this discourse has received a fresh impetus when on 23 February 1997 "Dolly" was presented to the public. "Dolly" is a cloned sheep and the product of a worldshaking experiment: For the first time scientists succeeded in cloning a mammal from a somatic cell (namely an udder cell). Up to then mammals

well as to provide reports with a technology-supportive thrust. On the one hand, the monster scenarios are represented as a warning against an eugenic rationalization of nature and human evolution and the incalculable and uncontrollable consequences of an »industrialized« molecular biology; here, the artificial-life discourse serves to question an idea of nature that emphasizes human intervention through a process of design, a process of a synthesis of »arts« and life. On the other hand, references to the »first« and "second generation of the monsters" (Brittnacher 1988) are used either to illustrate the fantastic and thus (allegedly) unfounded and irrational objections of the technology's critics and/or to impute to these a hidden biologism (allegedly) expressed by the visions of an omnipotent technology.

In either case the artificial-life theme first and foremost is a discourse on fear and can be assumed to create, if not fear, then a certain uneasiness among readers. The most widely and often used motive of fear are the *Frankenstein rhetorics*[83]. Deeply rooted in the popular culture by literature and film, it spontaneously evokes the idea of scary as well as pitiable new creations, products of a scientific hubris, which, by the process of self-empowerment, escape the control of their scientific creators, and terrorize them as well as their environment[84]. It is the cultural-historically rooted misgivings about scientific and technological progress that the Frankenstein myth evokes. Its continued use in mass media discourse is likely to have an effect which complies with the interests of the technology's protesters: It is likely to render more difficult the social acceptance of the new technologies

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had been cloned exclusively from embryonic cells. That means, while thus far scientists could »merely« produce multiple births, they now for the first time succeeded in cloning a full-grown mammal (Der Spiegel, 10/1997, pp. 216-225).

[83] In the 1990s, it is above all in the context of reporting on genetically engineered food in which Frankenstein rhetorics are used. Among the numerous usages of this specific genetic engineering frame, note the following two: The heading "Frankenfood im Tiefkühlfach" in the political magazine *Der Spiegel* (15/1993, p. 202) and the heading "Angst vor Frankensteins Pflanzen" in the supraregional newspaper *Süddeutsche Zeitung* (20./21.3.1993).

[84] The emotional imagery evoked by the familiar monster myth still gets enriched by the media's visual presentation of some rather pitiable transgenic animals: for example, the transgenic »super pig«, carrying the gene for the production of growth hormone in humans, which suffers from arthritis, is susceptible to infections and given to infertility and to squinting (Weidenbach & Tappeser 1989: 176), the transgenic »oncomouse« the hereditary material of which includes human genes predisposing it to develop cancer (British Medical Association 1992: 108), or the transgenic »mighty mouse«, carrying the gene which codes for the production of growth hormone in rats (see Rosenbladt 1988: 59). (The term *transgenic* is used to describe organisms which have been altered to carry and express genes from another species; the »geep« though not a product of genetic engineering usually is dealt with in the context of transgenic animals.)

and its products[85].

It is worth noting, that, though heavily relying on the monster symbolism, it was not the technology protesters who introduced this specific framing of the rDNA issue into mass media discourse. Instead, it was used by the media some time before collective protest developed (Viehöver 1992: 50-51). The strong reliance of collective protest on artificial-life themes suggests, however, that mass media use of these »condensing symbols« soon became no longer the exclusive result of internal media criteria of good journalism but also a representation of fundamentalist protest discourse and was influenced by protest mobilization strategies[86].

While the artificial-life theme still enjoys great popularity in the mass media in the 1990s, it is no longer the dominant »frame« as it was until about the late 1980s. Instead, since then most media reports are structured according to the opportunity/risk dichotomy[87].

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[85] The following anecdote suggests that the concern about the effects of the use of monster-rhetorics in public discourse represents a concern particularly strongly developed among some of the German technology promoters facing widespread technology protest and concentrated public debate. In its 1 April 1993 issue, the British scientific journal *Nature* published an article that in scientific gibberish reported on the production of a genetically engineered ageless and ever-growing mouse-species, the "Dorian Gray mice". In the June issue the journal published the statements of some scientists on the April fool joke. While the US, French, and Spanish scientists obviously had been amused by the joke and had developed it (Der Spiegel, 27/1993, p. 175), the German genetics professor, Peter Starlinger, warned against potential "schwerwiegenden Konsequenzen" (quoted after Ibid.) of the satirical mouse story. *Nature*, the scientist exposed, was known as a scientific publication and as such also red by many journalists, which could not differentiate between "wirklichen and fiktiven Daten" (Ibid.) and thus, would be misguided.

[86] According to Brittnacher, the use of literary horror in the rDNA debate is to be put down to the "kurrentes Vorurteil" (1988: 105) of the technology's critics that "die vorläufigen Einsichten der Literatur jenen Wissenschaften, die sich erst später konstituieren, oft schon voraus seien, and daß man gut daran täte, den literarischen Antizipationen der verheerenden Folgen von Wissenschaftsfreveln Glauben zu schenken" (Ibid.). This perspective, I shall claim, fails to distinguish between individual or collective conviction and the communication-strategic use and reproduction of cultural symbols. For a discussion of the role of »condensing symbols« (Kollektivsymbole) in public discourse on the risks and opportunities of genetic engineering, see Viehöver (1992). "Sie [the condensing symbols] erlauben Verstehen ohne Expertise. Das macht ihre Verwendung im öffentlichen Diskurs (speziell im Mediendiskurs) wahrscheinlich." (Viehöver 1992: 4)

[87] Thus, unlike Heins (1992: 389), I do not regard the Frankenstein rhetorics as that interpretation of genetic engineering which since the mid 1970s determines public debate.

3.2 The Risk-Opportunity-Discourse

The *risk-and-opportunity* frame started gaining ground when in 1987 the final report of the Parliamentary Commission was published. As I have argued under point 1.3, the issuing of the report had a major stimulating as well as structuring effect on public debate, especially on mass media discourse.

The publication of the final report of the Commission of Inquiry on the Opportunities and Risks of Genetic Engineering brought about the rDNA issue's real breakthrough as a media topic (Ruhrmann et al. 1992: 63). Genetic engineering surpassed its status as an »appendage« of modern reproduction technologies and became an independent media topic. Up to then, media coverage had been largely restricted to the possible applications of the technology to humans and to the discussion of ethical questions: now, reporting increasingly dealt with all fields of application and dimensions of potential benefits and hazards. Though composed as a textbook and manual rather than a discussion stimulating account, the Commission's report gave the critical assessment of rDNA technology in the mass media a clear impulse. Much broader media attention was attracted by the legal and ethical aspects of gene therapy and human genome analysis and the »classical« risks to human health and the environment associated with the technology's use in industry (Hennen & Stöckle 1992: 3). Media reporting on the latter topic in the course of the late 1980s continuously received new impulses by the massive local protest against the construction and approval of genetic engineering facilities in the chemical industry.

The comprehensive consideration of the risk issue in the mass media after the Commission's report had been issued can be explained, on the one hand, as the result of the Commission's intensive and extensive treatment of the issue. At least to some extent, however, it must be put down to a more specific event, namely the experts' agreement that precautionary restrictions on freedom of research and general freedom of action were also justifiable in cases referring to the aversion of still unknown, unproven but potential dangers. With this agreement the technology critics' reference to hypothetical risks - usually downplayed by the technology proponents as the incalculable and uncontrollable and thus negligible *residual risk* (Restrisiko) - underwent a significant upgrading in terms of argumentative persuasiveness. At

the same time, the "uncertain peril and certain promise"[88]-argumentation of the technology promoters lost some of its persuasive power.

Though acting as a stimulus to risk discourse, the Commission's report did not give rise to a purely negative framing of the rDNA issue in news reporting. This was forestalled by the report's risk-opportunity-approach which was widely adopted by the media. The report provided a discursive structure which defined the weighing of risks and prospects against each other as the argumentative basis for a rational evaluation of the technology at issue. This structure was reproduced by every newspaper article which responded to the issuing of the report with the stereotype heading and discussion of "the opportunities and risks of genetic engineering". As Gill somewhat ironically puts it, the slogans of the Enquête-Kommission rested like anathemas on the consciousness and the fantasy of the public actors (1991: 429). Certainly already before 1987 the risks and benefits perspective had formed part of political and public debate on genetic engineering; after the Commission's report had been issued, however, the alarming discourse on potential risks and the reassuring presentation of the technology's potential benefits appeared as necessarily attached to each other. Thus the Commission's work gave rise to a, so to speak, »well-balanced« reporting on modern biotechnologies (van den Daele 1990: 40).

Still today the risk-opportunity-perspective presents the basic structure of mass media reporting on genetic engineering. However, since the decision of the Bundeskabinett to pass a law - signalling the issue's definite political settlement - news coverage on the technology's actual and potential benefits has significantly increased. Particularly reports on the factual and likely contributions of genetic engineering to medicinal progress have since then constituted a good deal of press reporting on the technology[89]. The increasing prominence of the technology's benefits does not imply, however, a steadily decreasing attention to the technology's risks. On the contrary, in the mid 1990s, the risk issue in the context of

[88] "DNA Research: Uncertain Peril and Certain Promise" is the title of an article by Joshua Lederberg of 1975 reprinted in Watson & Tooze (1981: 56).

[89] In the time period covered by the media analysis of Ruhrmann et al. (January 1988 - June 1990), the technology's contributions to medicinal progress actually developed into the preferential focus of media reporting on genetic engineering (1992: 38).

regulatory debate on genetically engineered foodstuffs and the associated series of spectacular protest events - local opposition to field trials and the campaigns by BUND and Greenpeace (see point 2.3.1) - has regained prominence. At the same time, "Dolly", the sheep cloned from somatic cells, has once more brought the potential adverse socio-cultural consequences of the technology's use (if combined with modern reproductive technologies) to the forefront of mass media discourse.

Still, the general thrust of current news reporting is technology-supportive rather than technology-critical. There is a clear tendency also in those newspapers and magazines known to be sensitive to the ambiguity of scientific and technological progress to represent risks as negligible and portray protest risk discourse as overdramatization and protest demands as unrealistic (see for instance, Focus, 49/1996, pp.71-72 and Der Spiegel, 15/1997, pp.210-221). While, in the late 1980s, news reporting, especially in the context of local opposition to the industrial use of genetic engineering, was somehow sympathetic to technology protest, this looks very different in the mid 1990s. The mass media no longer act as an »ally« of technology protest; for the chemical industry this implies being to a much lesser extent the subject of negative headlines as was the case up to the 1990s.

So far in this second part of the study I have sketched the commercial interests that the German chemical industry has in genetic engineering and the political environment in which the industrial sector has found itself embedded in its attempt at commercializing a technology that it considers key for its present and future economic success. In the next chapter I shall outline the sector's political response to the various and changing challenges from its wider societal environment.

III. THE CHEMICAL INDUSTRY AS POLITICAL ACTOR

The preceding chapter pointed out that rarely has one technology and one industrial sector using that technology attracted such public scrutiny from so many angles and actors and from such an early stage of the technology's industrial uptake. The special political challenge that this has meant for the industrial sector suggests a special industrial political response - and it is this special response that the present chapter aims to examine. The explanation is organized as a *phase-based exposition* of the German chemical industry's policy on the rDNA issue. It covers the same time period as the exposition of the political context (from the mid 1970s to the mid 1990s). The changes in industrial political activity that the chapter discusses as regards extent, arena choice, argumentative thrust, and interactive nature are related to the contextual factors outlined in the preceding chapter. It is the crucial point in the following analysis to show that these factors have decisively shaped the specific development of industrial political involvement.

The phase-based exposition is preceded by a short portrayal of the major characteristics of the chemical industry as a "*policy community*". The basic idea expressed in this concept, as defined by Grant, Paterson & Whitston (1988: 10), is that industrial sectors are characterized not only by distinctive production processes, technologies, and forms of market organizations, but also develop a specific political identity and life of their own which is to some extent distinctive and insulated from that of other sectors. The first section of this chapter broadly draws on this concept and its underlying idea to demonstrate the role that two main characteristics of the German chemical industry, namely a *high degree of organizational development* and a strongly developed *sectoral culture* in terms of sectoral identity and solidarity, have played in the specific organization of industrial political activity. These characteristics and the fact that public exposure has not merely affected a few companies but a large part of the sector (including the giant companies) are identified as essential factors in accounting for the special role that *collective action* through the industry association, the Verband der Chemischen Industrie (VCI), has played in the rDNA debate.

Next, individual subsections are devoted to the *four phases* of industrial political activity that have been distinguished. These phases are: 1) *corporatist negotiations* (1975-1983), 2) *deliberation at the parliamentary level* (1984-1987), 3) *public education and reassurance* (1988-mid/1990), and 4) *public dialogue* (mid/1990-1994) (table 3). The

empirical focus is on the latter two phases, the phases of continued public appearances by the chemical industry on the rDNA issue.

The specification of the phases is intended to express the sector's »moving forward« into the public arena and the increasing importance of two-way-communication in this arena. It is not intended to indicate an exclusive or dominant form of political involvement in the respective phase. In all phases all forms of political activity denoted by the phases' specification have to some extent played a role (very evidently this holds true for corporatist negotiations). Nonetheless, in the phase that it specifies, the respective activity has played a particular role as its relative significance, compared with the preceding phase, has clearly increased. Consequently, the phase description focuses on this activity, if considered worthwhile, however, it also refers to the other forms of political involvement. Special emphasis is placed on examining which role is played by the five types of communicative action presented in the theoretical part of the study (Part A, III.2) which in part are indicated by the phases' specification (the five types of communicative action that have been distinguished are corporatist and post-corporatist negotiation, informatory education, confidence-building, and identity-building).

Note that I am certainly aware of the fact that all attempts to divide sequences of activities or events into phases are subject to objection. Indeed, it is generally problematic to impose any scheme on social reality. All such schemes are derived from particular theoretical or conceptual starting points, thus, they never meet with unanimous approval. Nevertheless, there are often good reasons to resort to this way of making sense of reality. In the present case study, I shall claim, the terminology of political action arena and dialogical drift provides an appropriate framework for identifying phases of industrial political activity.

Corporatist Negotiations	**Deliberations at the Parliamentary Level**	**Public Education and Reassurance**	**Public Dialogue**
(1975-1983)	(1984-1987)	(1988-mid/1990)	(mid/1990-1994...)

table 3: Phases of Industrial Political Activity in the German Genetic Engineering Controversy

1. The Sector as a Policy Community

As the phase-based exposition will show, the chemical industry's specialist peak federation (Fachspitzenverband), the VCI, constitutes a very important »player« in genetic engineering political activity in the industrial sector. Especially in the field of public communication, it displays the greatest variety of activities. Many of the small and medium-size companies applying genetic engineering methods and procedures have largely abstained from individual political involvement. Either they have not felt the need to take action in view of minor or absent direct public pressure[1] and/or they simply have lacked the personnel and financial resources necessary for costly political activities of their own. Many of these companies have practiced a »wait-and-see« strategy or have relied on the policy of the trade association which acts as their common mouthpiece. The large chemical firms, however, especially those which at some point in the controversy have faced direct pressure from their local environment, such as BASF, Hoechst and Hoechst's subsidiaries Behringwerke and AgrEvo, also have developed independent political capabilities. Since the late 1980s, they have been increasingly active in rDNA policy on their own behalf rather than exclusively relying on the industry association. Independent action especially concerns communication with the local community within the sphere of the company and contacts with the Länder governments[2]; contacts with the federal political institutions remain to be conducted primarily through the VCI[3]. In general, collective

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[1] An example of such a case is the Dr. Karl Thomae GmbH (a 100% subsidiary of Boehringer Ingelheim). The company produces T-PA (*t*issue *p*lasminogen *a*ctivator), a drug for cardiac arrest and thromboses (T-PA is produced by genetically engineered hamster cells). The respective authorization procedure involved public participation but passed off without causing any delay for the production plans of the company. A spokesperson of the parent company explained that the subsidiary did not undertake any special political activities concerning genetic engineering as there had been no "harter Zwang" (Pollmann 1992 in interview) to act; genetic engineering would not have constituted a matter of central concern (Ibid.). Pollmann works in the department of research and development of Boehringer Ingelheim.

[2] In their respective Länder - BASF in Rhineland Palatinate, Bayer in North Rhine Westphalia, and Hoechst in Hesse - the big three are substantial factors in their local economies. They expect to be and are treated accordingly. The Land level is of major importance for planning agreements on plant constructions and in a great deal of other functions such as health and safety and plant-related environmental policy.

[3] In Germany, there is a general political-administrative culture of reliance on consultation with associations which have an ability to engage in effective interest aggregation. Only in exceptional cases in which the government is a major customer and one firm is highly dominant, government might approach a single firm rather than a trade association. The policy of formal consultation is meant to help the state in implementing its public policies. Consultation together with agreement or compromises before government gets committed to a law or regulation should lead to better compliance of the societal sectors represented by the consulted interest groups once the public policy is announced by the state.

action through the VCI has continued to loom large in the sector's dealings with the rDNA issue. In a historical perspective, this observation is not really astonishing; the German chemical industry is characterized by a traditional predominance of VCI co-ordinated collective action.

Despite pronounced sector co-operation and co-ordination, there is no such thing as a standardized procedure according to which genetic engineering political activities in the chemical industry have been carried out. Rather, a differentiated strategy has been pursued, one which at the association level is oriented to common interests of the member firms (probably with special consideration of the giant companies' interests), one which at the company level is oriented to the size of the company, the situation of the company (pressure, products), and the corresponding target groups. However, the general thrust of political involvement by the VCI and the big companies has been very much the same, in all of the different phases of the debate; to some extent this can be put down to the dominant position of the large firms in the trade association (see point 1.1). Therefore, the phase-based exposition often simply speaks of the *sector's* political activity; activities at the company and associational level are specified when they are of a particular kind or weight.

1.1 Predominance of VCI Co-ordinated Collective Action

It is not the concern of this section to go deeper into the structural and societal conditions that are required, given the individualistic and competitive nature of business interests, for economic organizations to be able to associate with each other; after all this is not a study about how industry-level political action is hobbled by the free-rider problem. However, the fact that companies to a high degree relied on collective action through the trade association shall not remain untackled. I shall point out three explanatory factors with respect to this. First, chemical companies have not been exceptionally affected by public pressure; instead, public actors have brought pressure to bear on wide parts of the sector. In short, the rDNA issue presents a *sectoral issue* and thus, has suggested collective action. The other two factors are not merely essential for explaining collective action in the field of genetic engineering. Instead, they largely account for the general predominance of highly co-ordinated collective

action through the VCI[4]; they are general characteristics of the German chemical sector. There is, on the one hand, *a strongly developed sectoral organization*. That is to say, the trade association has a high degree of organizational development and the companies put considerable effort into the VCI and its associated specialist associations (Grant, Martinelli & Paterson 1989: 76). On the other hand, there is a pronounced "Branchenkultur" (Longolius 1993: 142ff.) which has developed over more than 100 years. As Longolius' studies on the German chemical industry have shown, there are two major roots of this *pronounced sectoral culture*. The first is the historical tradition of co-operation between the very large companies, for example, from the times of the IG Farben. The second is collective conceptions of the world and the sector itself (the latter largely refers to the sector's achievements in the natural sciences), from which a strong sectoral identity and solidarity have resulted (Ibid.: 156). It is worth noting, that the IG Chemie, the chemical workers' union[5], is fully integrated into this sectoral culture. The *generally harmonious relationship between IG-Chemie and the employers* is not only illustrated by the close co-operation in the environmental field but also by the fact that since the first World War there has been only one strike, in 1971 (Ibid.: 142; see also Paterson 1991: 241). As will be shown, this harmony also prevails in relation to genetic engineering policy.

It seems reasonable to assume that these two characteristics, the high degree of sectoral organization and the strongly developed collective identity, have loomed large in the pronounced endeavor of the chemical sector to form - via the VCI - a joint opinion on rDNA technology and to advocate this opinion to its closer and wider societal environment.

The Verband der Chemischen Industrie

The VCI, as the specialist peak federation of the German chemical industry, represents the interests of about 1.600 member firms on the national and international level. It comprises

[4] The thesis that in the German chemical industry highly co-ordinated collective action through the VCI predominates has been defended by Grant, Martinelli & Paterson (1989). The authors argue that the importance of the VCI was reflected in the fact that it was better resourced than its Italian and British counterparts, and in the "deference" (Ibid.: 78) which was shown to it by the individual firms.

[5] Germany has one major union in the chemical industry, the IG Chemie-Papier-Keramik, in short, IG Chemie.

twenty-one specialized subsector associations (Fachverbände), nine Länder associations, and ten specialist associations (Fachvereinigungen) (VCI 1994a: 7). The Fachverbände representing the various subsectors within the chemical sector as far as the traditional political institutions are concerned take their own specific initiatives in relation to issuing material in defence of contested issues; still, they rely heavily on the VCI as they have no presence in Bonn[6]. In the field of public communication, some of them are very active on their own, such as the trade associations for the pharmaceutical industry (Bundesverband der Pharmazeutischen Industrie, BPI).

An important point as regards the power structure of the VCI is the fact that the organization is largely dominated by the big three, BASF, Bayer and Hoechst, with the VCI Präsidium functioning as a "convenient forum for the co-ordination of positions" (Grant, Martinelli & Paterson 1989: 76). All three giant companies put considerable effort into the trade association and the specialist associations[7].

The first two decades in its history the VCI (which was founded in December 1950) devoted relatively little policy attention or personnel to technology and environment related issues and regulation. The focus of its work rather was on trade policy, protection of patents and the forging and management of links between the chemical industry and the wider scientific community (Paterson 1991: 228). Environmental and technology policy did not constitute issues of central concern; generally, the industrial sector enjoyed pronounced public acceptance and (like other business interest associations in the European chemical industry) a harmonious relationship with government[8]. Its significance for the German economy, its technological achievements and good labor relations combined to ensure that it was largely

[6] Because the offices of the VCI are in Frankfurt (Hesse), the association maintains a Bonn representative. The representative's function is to keep contact with the bureaucracy and with the Bundestag and Bundesrat.

[7] Despite their generally dominant position, as Allen (1989: 162) points out, the big three must remain sensitive to the concerns and needs of the smaller firms many of which are either suppliers or customers.

[8] Legislature is usually a secondary target for the VCI in comparison to the bureaucracy. Legislative proposals normally emerge as a product of the interaction between interest groups and the bureaucracy. Furthermore, it is bureaucrats rather than legislators who are the decisive actors at the critical implementation stage. However, since the 1990s, as Paterson points out (1991: 239) and as the rDNA debate confirms, the perception of the parliament as marginal is changing. The high political visibility of environmental policy pushes the association much further into the direct political arena and away from its former neutral-bureaucratic arena. Consequently, the views of the political parties gain in importance and the need increases to spend time cultivating them and parliamentary opinion.

insulated from political turbulence and unwanted governmental intervention (Ibid.). This changed in the 1970s with the rise of the new social movements. To the extent that these targeted the industry for criticism it began to face increasing regulatory scrutiny (Allen 1989: 174) - a difficult process for the chemical industry since for one hundred years it has jealously guarded its *ability to self-regulate*; traditionally the sector has had a high capacity to preserve its autonomy from governmental intervention (Paterson 1991: 232).

The VCI reacted to the new political challenges with two major organizational changes: The first was to create a new department of technology and the environment to work under the direction of a new similarly named committee, which superseded the long-established Technology Committee[9]. Second, the VCI established a special fund, the *Initiative "Geschützter leben" - Aktionsgemeinschaft der Chemischen Industrie* (IGL), for the systematic improvement of the sector's public acceptance (Dreyer 1997)[10]. This organization has developed into an important element in the public communication work of the VCI and, as the next chapters will show, has also figured strongly in the VCI's public communication on the rDNA issue.

In short, the range of functions of the trade association has significantly changed in the last two and a half decades:

> Das Aufgabenprofil des Verbandes hat sich in den letzten beiden Jahrzehnten erheblich verändert. Es beschränkt sich nicht mehr nur auf die *klassischen Wirtschaftsthemen.* ... Das Thema Ökologie durchdringt jedoch zunehmend wesentliche Bereiche unserer modernen Industriegesellschaft ... *Umweltschutz* ist für uns alle zu einem neuen Maßstab für unsere Ziele und unser Handeln geworden - und damit auch zu einer wichtigen Aufgabe des Verbandes. ... Als Schlüsselindustrie wird die Chemie oft zur Zielscheibe der Kritik und gerät immer stärker unter Erklärungszwang. Der *Dialog mit der Öffentlichkeit* gehört somit zu einem wichtigen Aufgabengebiet des Verbandes... (VCI 1994a: 5-6; emphasis added)

[9] As Paterson points out (1991: 236), this department is now the largest in the VCI, servicing eight committees, fifty-three working groups and eighteen technical working groups on individual substances.

[10] Quoted literally, the initiative's task reads as follows: "Sympathiebeschaffung in Form institutioneller Werbung und sachlicher Aufklärung" (IGL, Chemie auf Ihrer Seite). The IGL was established on 26 January 1979 and is financed on a voluntary basis by about seventy chemical firms, seven specialist associations and by the VCI (VCI 1994: 21). Its chairman is usually the Vice-president who is also the immediate past President of the VCI.

1.2 First »Signs of Erosion« of the Reliance on the VCI

In general, the big firms basically welcome trade association activities - which are, as stated above, strongly influenced by them. Nonetheless, they also criticize them as being too slow, requiring a lot of co-ordination, and not being suitable for all purposes because of diverging opinions among the companies represented[11]. The decision of most of the big companies to engage in rDNA political activities on their own[12] surely is based to some extent on this criticism. Especially for those companies faced with an especially turbulent local environment, protracted negotiations did not constitute an appropriate solution; direct local pressure called for direct and individual action.

There are two other factors not specific to the rDNA controversy which have to be considered when accounting for independent political action: *personnel changes in the senior management of the big chemical companies* and the *increasing importance of the European Union (EU) as an economic and political arena for the chemical industry*. Mainly due to these developments, chemical firms in the late 1980s have started to develop their own political capabilities for the first time (Grant, Martinelli & Paterson 1989: 74).

By the mid 1980s, at the company level, the chemists who traditionally have dominated the senior management were starting to be displaced by executive officers whose primary academic training was in other disciplines such as economics and applied economics or jurisdiction. The belief was that generalists rather than specialists might be more politically sensitive to unfavorable developments in the sector (Allen 1989: 174[13]). The new company

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[11] In voluntary associations decisions have to be accepted by the majority of members and therefore are often the outcome of very lengthy and complicated negotiations. For a discussion of the problem of interest mediation in chemical business interests associations in terms of conflicts arising between the logic of membership and the logic of influence, see Chiesi (1991).

[12] In most cases, political activities in the genetic engineering field represent only one task in the workload of the relevant employees. Typically, a few people share the different responsibilities in the field.

[13] This belief was also expressed by the official responsible for pharmaceuticals and health in the public relations department of Hoechst, Joachim Pietzsch, in an interview carried out in 1996. The Hoechst company decided much later than its competitors to act on this belief in the choice of its *Vorstandsvorsitzenden*. Only in 1994, after a series of accidents had seriously damaged the company's image, a non-chemist was chosen as the chairman of the Board. The change in presidency from the chemist Hilger to the economist Dormann is widely regarded as a symbol for the company's reorientation towards transparency and dialogue. While Hilger was considered to be an exponent of the company's traditional *Wagenburgmentalität*, Dormann has the reputation of being a declared advocate of an open, society-oriented corporate policy (Dreyer & Kesselring 1996: 51; Der

leaders evidently have felt that the reliance on the VCI provides too narrow a platform to deal with the pressures imposed on the chemical industry by environmental and technology issues. In their view, the politically exposed position of the sector in relation to these issues requires a much broader involvement with the political élite and other public actors in order to prevent an unfavorable climate of opinion from developing - even if this means moving away from national patterns of action (Ibid.: 77)[14]. With the increasing importance of the EU in the key fields of economics and environmental regulation, the big companies have also taken steps towards establishing their own political capabilities at the European level (Ibid.)[15]. As regards the rDNA issue, these are organized in the form of the European Association for Bioindustries (EuropaBio). EuropaBio was founded in September 1996 by integration of the national biotechnology industry associations and the Senior Advisory Group on Biotechnology (SAGB)[16]. The Brussels-based Association acts as the transnational lobby of the European biotechnology industry and includes all major German companies using rDNA techniques[17].

Summarizing the above, one can conclude that corresponding with the decision of the large chemical companies in the late 1980s to build up an "'in house' political capability" (Grant, Martinelli & Paterson 1989: 74), independent political activity has played a role in the German genetic engineering controversy; however, independent action did not break the

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Spiegel 1/1996, p. 67-71).

[14] As elaborated by Grant, Martinelli & Paterson (1989: 77), the new senior management was much strengthened in this view by the difficulties that the sector had experienced in reacting to the demands for much tighter regulation generated by the coincidence in 1986 of chemical spillages in the Rhine and the federal election campaign.

[15] As Grant, Martinelli & Paterson (1989: 77) point out, in 1986 the VCI Präsidium approved guidelines for the appointment of European co-ordinators in the three giant companies. Their task is to establish direct links between their boards and the EU level. The authors take the guidelines' approval by the VCI as a reflection of the "deference" (Ibid.: 78) shown to the association by the individual companies; it constituted a degree of intervention in company personnel policy which in Britain, for example, would not be tolerated (Ibid.).

[16] The SAGB was founded in 1989 by the EU-parent organization of the chemical industry, the European Chemical Industry Federation (CEFIC), in order to "promote a supportive climate for biotechnology in Europe" (SAGB, Community Policy...). The Group originally comprised senior executives from ICI, Monsanto Europe, Hoechst, Rhône-Poulenc, Ferruzzi Group, Sandoz, and Unilever. Since 1992, it had expanded its membership to incorporate numerous other companies working with genetic engineering.

[17] EuropaBio is aiming to address in the course of its work specific policy issues, legislative initiatives and regulatory practices, and to make specific recommendations. Its main objectives are to convince the European public and legislature of the potentiality of modern biotechnologies and to create conditions which make Europe become a world leader in biotechnology (Lehmann 1997: 13).

sector-typical predominance of collective action through the VCI.

2. Industrial Political Activity in the Genetic Engineering Controversy: A Phase-Based Exposition

The historical reconstruction of the chemical industry's political involvement relating to the rDNA issue shows two main developments: The exposition of the first two phases describes how the sector was pushed much further into the direct political arena and away from the arena of corporatist negotiations shielded from the public eye once the rDNA issue became an issue of parliamentary scrutiny. The establishment of the Commission of Inquiry gave the views of the political parties a much heightened importance and generated an increased need to spend time cultivating them and parliamentary opinion. The exposition of the latter two phases shows how in a »situation of crisis« - in the first place consisting of a quasi-production blockade brought about by risk sensitive local citizens and legal and political authorities - the chemical industry was pushed into the public arena, towards communicating genetic engineering to the public. It is at this point in time that industry itself becomes a public actor who involves itself in public opinion-formation at first focusing on one-way-communication in terms of public education and reassurance and then increasingly moving towards two-way-communication, towards public dialogue.

In the first two phases, communication in the public arena clearly was an exception and not the rule. In this time of public indifference as regards the newly developed technology, the chemical industry heavily relied on its strategic location in the system of political intermediation to safeguard its interests; industrial political activity took place in the arena of institutionalized politics.

2.1 Corporatist Negotiations: 1975-1983[18]

From the mid 1970s until the early 1980s, industrial political activity was largely restricted to *negotiations in a corporatist framework of policy formulation*; that means, to negotiations in camera between government, VCI and BPI and other major interest groups.

In this first phase, the state's corporatist policy formulation approach gave industry the opportunity to strongly influence federal technology policy since economic interests had a particularly strong bargaining position vis-à-vis national government. This strong bargaining position was largely the result of a *lack of parliamentary and public interest* in the new technologies. A further factor which strengthened industry's bargaining position was the state's *interventionist industrial policy aimed at furthering high-technology development*[19]. Indeed, the driving force in promoting modern biotechnologies at that time was not industry but the state. To put it in Theisen's terms, federal support for the new technologies "hurried ahead the interests of industry" (Theisen 1991: 109)[20]. The responsible ministry, the Federal Ministry for Research and Technology (BMFT) - responsible for regulation *and* support of modern biotechnologies[21] - was concerned, in the first place, with establishing the infrastructure for a new technology in an industrial milieu that did not seem particularly receptive to the new biological processes. And, third, there is the fact that the BMFT had been established only very recently (in 1972); this provided industry with a substantial *knowledge advantage* over the responsible ministry.

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[18] The outline of industrial political activity in this period of time heavily relies on the 1985 article by Jasanoff. This article examines the impact of corporatist patterns of decision-making on industrial policy in the first decade of federal support for biotechnology in Germany.

[19] The interventionist industrial policy approach replaced in the late 1960s the laissez-faire approach of the immediate postwar period. The central mission of the Federal Ministry for Research and Technology (Bundesministerium für Forschung und Technologie, BMFT), created in 1972, was to promote industrial competitiveness through directed use of R&D funds and to develop effective research programs. The field of biotechnology became an early beneficiary of this activist R&D strategy. It was designated a »core technology«, a status that ensured steady federal support for the field since the early 1970s (as early as in 1970 the BMFT established a "Förderbereich Biotechnologie") (Jasanoff 1984: 23). Since 1975, at the latest, the ministry (now BMBF, Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie) also promotes the use of genetic engineering.

[20] Modern biotechnologies are primarily promoted by the BMFT until the 1980s.

[21] The integrated control exercised by BMFT over both regulatory and promotional strategies is one of the interesting features of German biotechnology policy in the 1970s.

These favorable political conditions did not necessitate any political »experiments« in the public arena. Instead, it rendered possible adherence to the chemical industry's traditional policy of self-regulation. The sector successfully prevented impending state regulation by declaring to »voluntarily« abide by the government's rDNA guidelines.

2.1.1 Negotiating Promotional and Control Strategies

As Jasanoff has argued, corporatist institutional mechanisms in this early stage of technology development took effect in negotiations about both public initiatives designed to promote the new technology and those aimed at controlling the technology's potential risks. These mechanisms forestalled a regulatory policy seriously interfering with the pace of biotechnological innovation.

The process leading to the formulation of the *first federally funded R&D program in biotechnology* complied with many of the norms of corporatist decision-making though it was carried out under the auspices of a private organization, the DECHEMA[22] (Jasanoff 1985: 28). The principle actors in the definition of the scope and specific objectives of the program were large businesses, the state, and to a lesser extent, the academic research community. Industry representatives were only selected from the leading chemical-pharmaceutical companies with a capacity for intensive research and development. In short, dominant interest groups with a direct interest in allocating and spending research funds were well represented; interests viewed as marginal to the project of opening up a new core technology were excluded. At this stage, it was actually not just environmental groups which were considered marginal but basic science and the labor unions as well.

A more traditional form of corporatism, including organized labor[23], was employed in the debate on *control strategies*. The BMFT's expert committee which recommended the safety guidelines for rDNA research included neither labor nor industry representatives. However,

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[22] DECHEMA is the German Society for Chemical Engineering (Deutsche Gesellschaft für chemisches Apparatewesen e.V.).

[23] The traditional tripartite structure of German corporatism includes organized labor, industrial interests and the state.

the guidelines, as adopted, provided for participation by these interests in the implementation phase. The Central Commission for Biological Safety (ZKBS), established to review applications concerning rDNA research, conformed closely to German corporatist norms[24]. The rDNA guidelines prescribed that four of the twelve ZKBS members had to have worked in the field of recombinant nucleic acids, four had to have experience in biosafety issues, and four had to be drawn from affected interest groups, such as labor, occupational health professionals, research-supporting institutions or industry; when the ZKBS was established, industry was represented by the BPI. Environmental organizations or the unorganized lay public were attributed no role in ZKBS's review process[25].

The fact that risk debate came to be channelled through this tightly organized pluralistic forum with the task of safeguarding biological safety and composed of scientific experts and representatives of technology-supportive rather than technology-critical interest groups had one obvious advantage for industry. Risk debate at the political system level came to be restricted to the kinds of risk that experts can easily identify and that readily lend themselves to technical control. Wider social impacts and corresponding wider forms of regulation were excluded from debate - at least for the immediate future.

2.1.2 Adherence to the Policy of Self-Regulation

As Jasanoff's analysis has shown (1985: 32-33), corporatist norms not only influenced institutional structure, as in the case of the ZKBS. Instead, they also determined the organization of political debate on principal matters. Industrial interests profited from the corporatist tradition in particular when BMFT drew upon this in averting pressure from the labor unions for more stringent regulation of genetic engineering research and development. As has already been argued under point II.1.1, the BMFT proposed legislation, authorizing

[24] The guidelines prescribe that four of the twelve ZKBS members must be experts in genetic engineering, four must have experience in biosafety issues, and four must be drawn from affected interest groups, such as labor, industry, occupational health professionals or research-supporting institutions.

[25] As distinguished from the rDNA guidelines the Genetic Engineering Act makes provision for the participation of environmental organizations (see point 2.3.1). The number of members has been reduced to ten. At least six of these members must be experts in genetic engineering. One expert each must be drawn from the following interest groups: trade unions, occupational health professionals, economy, environmental organizations, and research-supporting organizations.

the federal government to regulate genetic research in all sectors (both public and private), was thrown out at a BMFT organized, international, non-public hearing in which the German group constituted a typical negotiating forum for corporatist decision-making. The hearing generated a substantial record against the planned bill. The German chemical-pharmaceutical industry stressed above all damages to the competitiveness of the German industry posed by rigid regulation and pointed to the lately relaxed NIH Guidelines. Faced with a great deal of criticism, BMFT dropped the bill, to the satisfaction of both industry and the research community.

Due to the fact that private industry together with the universities agreed to abide voluntarily by the government guidelines this event did not provoke massive opposition - especially from the labor unions. The BPI took the lead in mobilizing industry support for the guidelines. As an agent of government, so to speak, it used the threat of legislation to convince its members that voluntary compliance with the more flexible guidelines would be the lesser of two evils.

Indeed, this procedure was typical of the chemical-pharmaceutical industry's relations with government on regulatory issues. Unlike in the U.S., for instance, in Germany, industry-government-relations depend largely on trust. Before a bill is passed, the if and how is worked out in co-operation between the affected associations and the government. The industrial actors expect that government will not impose particularly restrictive regulation, and the state expects that the industrial actors will act out of a sense of »collective self-responsibility«. To do so, the associations have to speak for their entire industries.

Summarizing the above, one can conclude that, in the given period of time, the chemical industry could rely without any major difficulties on its strong strategic location in the system of political intermediation to influence public technology policy according to its interests. Attestation of industrial social responsibility through voluntary self-regulation was exclusively targeted at a restricted spectrum of societally dominant interests. (In later political and public debate this self-regulatory effort - which is indeed »blackmailed« voluntary self-regulation - has served as a major confidence-building argument.) This favorable situation did not change significantly in the next phase that I distinguish. However, public pressure in terms of parliamentary scrutiny clearly increased.

2.2 Deliberations at the Parliamentary Level: 1984-1987

A different form of political involvement was required when, in 1984, the rDNA debate definitely reached parliament - the principal forum of an organized political public, at least according to constitutional theory. As the political parties, first of all the Greens, started to deal more intensively with the rDNA issue, eventually leading to the establishment of the Commission of Inquiry (see point II.1.3), the chemical industry felt the need to change its perception of the Bundestag as being marginal to the technology enterprise. At this point in time it started to spend much more time *cultivating the political parties and parliamentary opinion.*

An effective way of doing so was *to participate in the Enquête-Kommission.* While five of the eight external commission members were appointed with reference to scientific reputation, three were nominated as representatives of affected interest groups. The latter three were: One representative of the Federal General Medical Council (Bundesärztekammer), one representative of the IG Chemie, and one representative of the chemical-pharmaceutical industry (Hans-Jürgen Quadbeck-Seeger, the chief executive officer of the BASF subsidiary Knoll).

With party proportional representation and the inclusion of a moral theologist, a scientist, and a civil lawyer, the Commission's rDNA debate strayed from the more exclusive corporatist interest mediation as had been predominant until then. As distinguished from the preceding phase, negotiation as a specific type of industrial political activity took place in a significantly more open forum and approached the issue of risk in a much broader framework than had been the case in the previously established expert forums. While policy formulation in the latter forums was largely treated as an "apolitical exercise" (Jasanoff 1985: 37), it was definitely organized as a political undertaking in the parliamentary commission. It was not only that the Commission discussed genetic engineering in its various dimensions and also explored larger socio-political questions associated with the technology's future, such as the possible impact of the new technologies on employment or the Third World. In accordance with its assignment, the Commission formulated recommendations for concrete political actions to be taken by the parliament. In short, there was quite a lot at stake for industry and the effort to lend industry's issue positions weight in the Commission's decision-making

processes was correspondingly pronounced.

This effort might have been rather successful. At least, the Commission's conclusions largely safeguarded the interests of industry just as they safeguarded those of the scientific community. The final consent reached by the Commission majority was characterized by *compromise* and did not really consider any extreme viewpoints and recommendations. Mainly two factors had facilitated consent-formation and the joint formulation of a group of rather moderate political recommendations (with some more far-reaching exceptions). First, the Social Democrats, as the main opposition party, were oriented towards compromise and consent rather than the party political elaboration of dissent; consent-formation was in particular the strategy of the Social Democratic chairman of the Commission. Second, the rigorous fundamentalist stance of the Greens shifted from the outset the technology-critical minority into the discursive »offside« from which the exertion of real influence was no longer possible.

In their statements on the Commission's report, the VCI and the Federation of German Industry (Bundesverband der Deutschen Industrie, BDI) expressly welcomed the fact that the Commission had taken a differentiated view of the technology (VCI 1987: 1, BDI Chancen und Risiken...: 1). The VCI also approved the majority's willingness to compromise. According to the association, the Commission's work actually demonstrated that there was a majority that, in essence, accepted the technology:

> Insbesondere die "Empfehlungen" zeigen auf, daß diese neue Technologie im Grundsatz mehrheitlich akzeptiert wird und sich die Beteiligten bei der Einschätzung dieser neuen Technologie auch mehrheitlich um einen politischen Kompromiß bemüht haben. (VCI 1987: 1)

The associations expressed disagreement, however, with the more far-reaching regulatory and political actions that the Commission had proposed: The five-year moratorium for some of the deliberate release experiments, the establishment of a central advisory committee, and, above all, a legislative anchorage of the rDNA guidelines.

Legislation was not required, the associations claimed, as it was possible to reach a high degree of safety and ethical responsibility with instruments of self-regulation in science and industry. As proof of this they pointed to the fact that it was the (American) scientists

themselves, leading in the field of genetic engineering, who were the first to publicly discuss potential dangers associated with genetically manipulated microorganisms. They also pointed to industry's voluntary acquiescence to the government rDNA guidelines (BDI Chancen und Risiken...: 21). Moreover, it was argued, as compared to legislation, these instruments would have the advantage of not stipulating rigid standards but would make possible a continual adjustment of the regulations to progress in science and technology (Ibid.; VCI 1987: 2-3[26]).

As the procedure and the outcome of the Enquête-Kommission turned out to be widely satisfactory, and in view of a still negligible public debate, industrial political activity in this second phase did not go beyond participation in the half public/half private sphere of the parliamentary commission and rather »moderate« lobbying by the trade association. It remained restricted to activities in the political arena referring now to both executive and legislative.

As far as public opinion is concerned, it seems reasonable to assume that the chemical industry regarded the mere existence of the Commission and its own participation as valuable public relations for the technology and its use by industry. The Commission as such - the core of the German rDNA debate at this point in time - was likely to have a reassuring effect by signalling to the public at large that technological innovation was under public control. Industry's participation and its willingness to compromise, indicated by the majority consent, on the other hand, could be assumed to suggest that the sector took responsibility for a socially compatible use of the technology.

2.3 Public Education and Reassurance (1988-mid/1990)

In the phase to which the present section is devoted, the chemical industry decisively expanded its field of political activity: Faced with a situation of »crisis«, the sector entered the public arena in order to meet more effectively the political, legal, and social challenges critically impinging upon genetic engineering operations of several of its companies.

[26] The VCI in this context speaks of a "stürmische Fortschrittsdynamik" (VCI 1987: 1).

2.3.1 The Crisis - Industry »Goes Public«

With the publication of the final report of the Commission of Inquiry, the rDNA debate definitively moved into the public arena. It was above all public discourse on *technology risk* which was stimulated by the Commission's report (see point II.1.3). At the same time, technology protesters increasingly appeared on the scene. In 1987, when the Commission's report was published, the anti-rBST-campaign was launched. According to the motto »nip things in the bud« the campaign aimed at stopping the commercialization of one of the »flag-ship« products of the genetic engineering industry. At the local level, the first direct action was taken against a chemical company engaged in the construction of a genetic engineering facility: The citizens' action committee "Höchster Schnüffler un' Maagucker" filed a formal objection against the construction of the second phase (Chemtec) and retroactively against the approval of the first phase (Fermtec) of the three-phase insulin complex of the Hoechst company (see point II.2.3).

In short, the chemical industry faced an extended and intensified public debate. When, in September 1988, the Bundesrat subjected the approval of production facilities using rDNA technologies to a public hearing procedure, the public exposure of industry began to produce severe detrimental effects: non-assessable delays in the approval of production facilities, damages to the public image, a weakened bargaining position vis-à-vis national government, and absorption of time and manpower. With the decision of the Administrative Court of Hesse in November 1989 to make approval of rDNA production facilities conditional on an adequate legal basis, occasioning a quasi production blockade, the detrimental effects reached crisis proportions (see point II.1.4).

This transformation of a supportive political climate into a *turbulent and uncertain political environment* called for a new political strategy. This strategy was built on two pillars. The first consisted of *lobbying for a genetic engineering law*. At this point in time the sector came round to accepting the need for a certain extent of legislative authority to replace self-regulation in a charged political and public climate.

The second pillar consisted of expanding the field of political activity by entering the public arena. The chemical industry began increasingly to engage in *public communication* designed

to improve public acceptance of the technology at issue and its use by industry. The biggest effort was made by the big companies - directly affected by local technology protest. With the composition of the Genetic Engineering Guidelines by the VCI (issued in 1990), the sector commenced to co-ordinate its activities in the field and to develop joint strategies.

The chemical industry responded to expressions of public concern in two different ways based on two different approaches to the problem, approaches which until today form the basis of genetic engineering communication. The first approach is to view public concern as largely or wholly the result of *public ignorance*. The idea here is that a lack of understanding of scientific-technical facts and scientific-technical history among the public has fostered a »fear of the unknown«. In the given period of time this was the commonest view of the problem amongst industrialists (as well as amongst scientists). It provided the basis for a pronounced effort to *educate* the public. The second approach - not necessarily contradicting the first - is to view public concern as partly the result of general losses in public trust and credibility (in the early 1990s, this view became widely held). In the given phase, this perspective provided the basis for first attempts at *confidence-building*. These attempts, which considerably increased in the subsequent phase, rely on demonstrating that industry is aware of its social and political responsibility to society and is willing to take this responsibility. In the late 1980s, industrial socio-political responsibility was primarily operationalized as *transparency, openness, risk sensitivity, and self-set commitment to the promotion of the public good* (in the subsequent phase it is »willingness to engage in dialogue« which constitutes the principal operationalization).

The priority targets of the educational and trust-building effort at this time were opinion makers at the local level and the wider interested and/or concerned public (VCI communication policy also commenced to target opinion makers and groups endowed with an especially high public credibility beyond the local level). The attitude towards the local protesters was partly confrontationist and partly geared towards a constructive debate. As far as the supraregional protest groups are concerned, industry predominantly took a confrontationist stance - the talks between VCI and BUND in 1990 were an exception in this phase. Frequently applied attributes for these protest actors were: incompetent, incoherent, emotional, politically motivated, ideologically impelled. It was not exceptional for them to be denounced as fringe groups fighting on principle against technological progress and, in

doing so, contributing to a distortion of public opinion (see e.g. Büchel 1989: 28[27]). During this time, the chemical industry made it quite plain that it was convinced of taking the only »reasonable« view in technical controversy.

The media that public relations officers and scientific experts[28] in the given phase used to communicate genetic engineering to the public include: Lectures, plant tours, publications[29], press forums, media interviews, advertising in the print media[30], discussion panels[31] and target-oriented seminars. The emphasis in this phase is on *one-sided communication* flowing from the industrial actors to the targeted groups and organizations. At the level of the individual firm, entry into public debate was accompanied in a few cases by structural changes and innovations. In 1989, Behringwerke, for instance, established a public relations division in the context of the authorization procedure for its EPO-facility,

> weil wir festgestellt hatten, wir können das nicht nebenbei machen. Wir brauchen Profis. (Johannson 1991 in interview[32])

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[27] Büchel expressed himself in these terms at a press forum organized by the Bayer company in September 1989 in Wuppertal-Elberfeld on the subject of "Gentechnik bei Bayer". Karl Heinz Büchel is one of the managing directors of the Bayer company.

[28] It is not exclusively the public relations departments which are engaged in genetic engineering communication. At the company level their work is supported by the communication activities of members of the research staff, at the level of the trade association by the communication activities of members of the different specialist departments (Fachausschüsse). In the interviews carried out with trade association and company representatives, it was usually pointed out that both genetic engineering communication by communication experts and genetic engineering communication by scientific experts had specific advantages and disadvantages. The public relations officers would have a good command of the different »techniques« of communication but would enjoy little public credibility; the scientists or researchers, on the other hand, would have more public credibility but would lack communication skill and experience.

[29] The longest publication list on genetic engineering issues by a single firm in the late 1980s is probably that of the Hoechst company (including the publications by its official responsible for biotechnology and research, Dieter Brauer), reflecting the special pressure that involvement in the longest and most noticed lawsuit brought to bear on the company (see, among others, Hoechst 1988; Brauer 1988, 1989a,b, 1990).

[30] Ads on genetic engineering have been run at company and at industry level. While company run ads combine product and image advertising, VCI run ads (for obvious reasons) are restricted to image and issue advertising.

[31] To give an example: According to in-house information, staff members of Behringwerke (Marburg), in the context of the authorization procedure for the EPO-facility, participated at about 25 discussion and lecture events (Blickpunkt Behring 5/1989, p.11). Erythropoetin (EPO) is a hormone-like messenger substance of the cells which stimulates the endogenous production of read blood cells.

[32] Rolof Johannson is director of the department Cell Technology of Behringwerke.

Hoechst, the company with the earliest and biggest trouble, in 1987 had already repositioned a staff member from molecular biological research to public relations. The molecular biologist's new job was to advocate company issue positions towards the public and the public authorities (Brauer 1991 in Interview[33]).

2.3.2 Education About the »Facts«

The key concept of industry's informatory communication is *objectivity* (Sachlichkeit). This most respectable principle demanded the sober, dispassionate weighing of risks and benefits and, as the necessary basis for such a differentiated assessment, the relevant factual knowledge. As wide parts of the public obviously would lack this knowledge - indicated by the overemphasis of the technology's risks - information about the »facts« was required. Only in this way could misperceptions and irrational fears be overcome. The arguments and rhetorics employed in educational communication are directed at the technology's de-dramatization, de-mystification, and de-emotionalization.

The »facts« imparted are not exclusively scientific and technical details which are to give proof of sufficient research on and control of technology risks. Informatory communication refers, among others things, to the historical technological development of genetic engineering and provides a specification of the differences between the technology's use in industry, on the one hand, and potential applications in human reproductive biology and other aspects of human medicine, on the other. While the former explanation is meant to demonstrate that genetic engineering is a neutral science built upon concepts and practices handed down through the ages, the latter is to point out the ethically unquestionable character of the technology's industrial use. Indeed, the confusion of categories and the mixing of human genetic engineering and modern reproduction technology - evoking the dreadful sight of a »man made to measure« - and the »mundane« practices of industrial enzymology or pharmaceutical production is considered one of the main reasons for public concern about

[33] Dieter Brauer, Hoechst's official responsible for biotechnology and research (see ft. 27), from 1987 until 1994 worked in the public relations department. Since then he has been working in this function in the research management department. Brauer chiefly acts as a lobbyist at the national and European level (Pietzsch 1996 in interview; Joachim Pietzsch is official responsible for pharmaceuticals and health in the public relations and press department of the Hoechst company).

rDNA technology. Another focus of industry's educational effort is the provision of information on pressing societal problems and the potential contribution of genetic engineering to solving these problems. The message to be conveyed by this type of information is not only that potential benefits outweigh potential risks; the main message is that there exists a socio-political obligation to use genetic engineering.

2.3.2.1 Communicating Genetic Engineering as a Core Technology

> Die Gentechnik ist für neue Behandlungsformen von Aids, Krebs und anderen bisher nicht heilbaren Krankheiten unverzichtbar. (advertisement text)

This statement is taken from the first VCI advertisement on genetic engineering that the trade association ran in the first half of 1990 (VCI 1991a: 61; see appendix II. p.278). It forms part of industry's effort to foster an image of genetic engineering as a *core technology for the further development of modern industrial society.* In order to give evidence that genetic engineering is vital to a "future worth living" (lebenswerte Zukunft, Bayer magazin, 1/1994, p.2) industrial actors have provided comprehensive and information-rich expositions on the nature of some of the key problems of industrial and global society - from AIDS and cancer to environmental pollution and ever decreasing resources to malnutrition in the Third World - and the way in which the new technology could contribute to solving these problems. In these expositions genetic engineering is characterized as a fundamental means of advancing science and technology (Bayer 1989), as an increasingly active force in caring for the environment (Brauer 1991, Bayer AG 1995: 102) and realizing the idea of a »sustainable development« (Stadler 1995: 102), and as one of the "most valuable assistants in the fields of health and nutrition" (Bayer magazin, 1/1994, p.3).

As the following two quotations shall illustrate, the exposition of the technology's problem solving potential is sometimes flanked by the claim that not using the technology in view of this potential would not be justifiable or acceptable on ethical grounds.

> Als einer der größten Anbieter von chemischen Pflanzenschutzmitteln sehen wir es angesichts von Hunger und Unterernährung in der Welt geradezu als Verpflichtung an, alle Möglichkeiten des modernen Pflanzenschutzes - einschließlich Gentechnik - für

unser Gesamtkonzept zum Schutz der Kulturpflanzen zu nutzen. (Bayer AG 1989: 25)

> Und dennoch empfände ich es im tiefsten Sinne als unethisch, ja als unredlich, würden wir über solche Argumente [mögliche Zunahme der Überalterung der Bevölkerung, mögliche Nicht-Verbesserung oder Verschlimmerung der sozialen und politischen Spannungen in der Dritten Welt] vor einer Medizin warnen, die das Potential in sich birgt, in entscheidender Weise zur Verbesserung des Gesundheitszustandes der Menschen beizutragen. (zur Hausen 1989: 10[34])

By these statements, the use of genetic engineering was communicated as a socio-political and moral duty.

2.3.2.2 Communicating the rDNA Issue as a Negligible Residual Risk

Substantial efforts of the chemical industry have focused on disassociating the new core technology from the issue of *risk* which in its view is considerably overemphasized in the German rDNA debate - underlining the technology's real and potential benefits forms part of these efforts. There are two major lines of reasoning that, in numerous speeches, brochures and publications, the sector has employed to achieve this goal.

The first set of arguments holds that physical and biological safety measures (in the given phase regulated by the rDNA guidelines) had minimized potential risks and brought them under control. Due to this safety system the rDNA problem had been transformed into a *negligible residual risk.*

In confirmation of this statement industry has employed a second line of argument. This holds that there are *no novel or specific safety risks* associated with the new technology. In response to the »synergist« or »contextualist« safety model of the technology critical »counter-experts«[35] the industrial actors have insisted that the risk associated with a

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[34] This statement is part of a speech that zur Hausen, president of the German Cancer Research Center in Heidelberg, gave on a BASF lecture event in March 1989.

[35] Industry's safety concept formulated under the "restricted conditions of the laboratory" (Bonß, Hohlfeld & Kollek 1990: abstract) is judged by the expert technology critics as being insufficient to predict the complex interrelationships of genetically engineered objects when - deliberately or by accident - released into the environment. They advance in contrast to this "additive safety model" - as the predominant safety concept in industry and established science is known - a "synergist" or "contextualist" safety model (Kollek 1988). This latter model claims the context dependency of the biological significance of genetic information. It rejects the

genetically modified organism could be determined on the basis of the sum of the characteristics of the used components (that is, organisms and nucleic acids):

> Ein gentechnisch modifizierter Organismus ist nicht gefährlicher als der Ausgangsorganismus und die Erbinformation, die in den Mikroorganismus eingeschleust wurde. (Schenk 1989: 8[36])

Since experts knew the recombinant biological production systems perfectly, the argument goes, unforeseeable events were practically impossible. In order to substantiate this argumentation industry actors have commonly referred to corresponding research results of generally acknowledged expert organizations such as the World Health Organization (WHO) and the Organization for Economic Cooperation and Development (OECD) and by doing so determined it as »international knowledge« (see, e.g. Truscheit 1990[37]). Probably the most frequently used quotation in this context is taken from the WHO's *Laboratory Biosafety Manual*:

> There are no unique or specific safety risks associated with recombinant DNA work; the risks are no greater than those associated with work with known pathogens and do not necessitate special laboratory design or practice. (WHO 1983: 3)

Besides scientific expertise and authority, industry has resorted to experiential knowledge to prove the technology's controllability and safety. The reference to the fact that since the »birth« of genetic engineering (which at the given point in time was one and a half decades ago), not one genetic engineering-specific accident has been reported worldwide, constitutes an integral part of industrial risk communication. It provides proof of the functioning of the experts' system of risk control (see e.g. Brauer 1990: 139).

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assumption that the characteristics of a biological agent can be predicted wholesale and holds, instead, that these characteristics can only be grasped relative to their specific genetic, physiological, and ecological context.

[36] Hans-Uwe Schenk is director of the "Zentralbereich Hauptlaboratorium" of BASF.

[37] Ernst Truscheit works in the pharmaceutical research centre of the Bayer company.

2.3.2.3 Communicating Genetic Engineering as a Natural and Evolutionary Matter

The need to emphasize the social acceptability of genetic engineering has also led industry actors to equip scientific-technical communication with portrayals of the new technology as rooted in both natural and familiar processes. These portrayals form a response to the critics' claim that the new techniques entailed a qualitative change in the nature of scientific inquiry and were associated with so far unknown and unassessable risks. They are meant to facilitate the conveyance of the message of safety and reassurance by depicting the technology as an *incremental technology* rather than a turning point in science history and as an *imitation* of nature rather than an insult to nature.

Naturalization seeks to minimize public attention given to the rDNA issue by comparing the production of genetically modified organisms with a similar phenomenon of natural origin, which is nothing more or less than the *process of evolution.* The Hoechst manager Hansgeorg Gareis resorted to this issue definition when he observed:

> Die Evolution ist nicht am Ende: Ständig geschehen in und um uns Fehlinterpretationen und Veränderungen der genetischen Information und führen zu ständig neuen Varianten. *Die Natur selbst ist der aktivste Gentechnologe.* (Gareis 1985, emphasis added)

Another method of de-dramatizing the rDNA matter is to portray the technology in a manner analogous to the ancient cornerstones of modern agriculture and food processing - selective breeding, beer-brewing and yoghurt-making, techniques with which mankind has been familiar for thousands of years and from which it has derived substantial benefits[38]. It says the following in the introduction of a Bayer brochure on genetic engineering in pharmaceutical research:

> Biotechnische Prozesse sind seit den Anfängen der Zivilisation bekannt. Der Wunsch, die Nahrung vielfältiger zu gestalten, führte im Laufe der Jahrtausenden dazu, meist unwissend, Hefen und andere Mikroorganismen zur Herstellung, Geschmacksentfaltung oder Qualitätserhaltung z.B. von Brot, Käse, Bier und Wein zu verwenden. Erst die naturwissenschaftliche Erkenntnis, daß Kleinstlebewesen für den Menschen nützliche Stoffe bilden können, erklärte vor mehr als hundert Jahren die seit altersher

[38] For a comprehensive explication of this communicative strategy, see Levidow & Tait 1991.

gebräuchlichen Praktiken. (Meyer 1995 :8)

This common line of argument holding that modern biotechnologies were nothing more than a »refinement« of older biotechnologies, dating back to the dawn of civilization when the process of fermentation was discovered, has been nicely captured by Levidow & Tait. "The promoters' language", the authors state, "has largely shifted from biological revolution to evolution" (1991: 247). By defining genetic engineering as a *logical step in the evolution of science*, the chemical industry has sought to transform the image of modern biotechnologies from one of a perilous and alien science to one of an incremental and benign technology (Plein 1991: 481).

The language of sensation and novelty typical of the 1970s when, especially in the United States, new biotechnology firms were seeking large injections of venture capital - enthusiasts employed analogies to both the industrial and information revolutions - has come to be reserved for "selective occasions, such as arguments for extending patent rights to GMOs[39], or in appeals for public funds" (Levidow & Tait 1991: 247). Indeed, in the late 1980s, it is highly improbable to find revolutionary-pathetic proclamations such as the following statement by the Hoechst manager Gareis in industrial public communication:

> Der Mensch ist damit in der Lage, gezielt in die Vererbungsmechanismen der Natur einzugreifen! Das ist das wirklich Neue, das jede bisherige Dimension übersteigt. Der Mensch hat sich die Natur untertan gemacht! Er hat das Bibel-Wort wahr gemacht! (Gareis 1985)

2.3.2.4 Communicating Industrial Genetic Engineering as an Ethically Unquestionable Business

Another commonly employed means of fostering an image of a benign technology is the disassociation of industrial genetic engineering from potential applications in human reproductive biology and other aspects of human medicine and applications in the field of human reproductive biology not relying on rDNA technology. The exposition of the different technology fields and applications constitutes the attempt to disassociate industrial genetic

[39] GMO is the abbreviation for genetically *m*odified *o*rganisms.

engineering from the issue of ethical ambiguity - an issue cultivated equally by the mass media and technology protest.

Industry actors have felt that a great deal of public concern about the technology's industrial use were constituted by moral doubts that were in reality aimed at other hotly disputed techniques of the life sciences such as cell fusion, artificial insemination, genome analysis, or prenatal diagnostics. In this view, only through the confusion of different matters had industrial genetic engineering become one of the subjects of these doubts. The remedy, thus, has been to focus substantial efforts on exposing the differences in technologies and applications and on explaining why it was only the latter techniques and applications which called for debate on ethics and socio-political regulation. This line of argument determines industry's use of genetic engineering as a, so to speak, »moral free zone«. According to a genetic engineering information sheet of the BASF company:

> Die Reproduktionsbiologie, die unter den Stichworten "Retortenbaby", "Reagenzglasbefruchtung" und "Embryonentransfer" bekanntgeworden ist, wird immer wieder fälschlich mit der Gentechnik in Verbindung gebracht. Sie ist kein Tätigkeitsfeld der chemischen Industrie. Reproduktionsbiologie und gentechnische Eingriffe in die menschliche Keimbahn werfen ethische, religiöse und gesellschaftspolitische Fragen auf. Diese Probleme gehören deshalb in die Verantwortung von Ethik und Medizin und müssen unter Einbeziehung aller gesellschaftlichen Gruppen diskutiert und politisch entschieden werden. (BASF 1991)

Another example of this line of reasoning is the following statement which the Bayer company made in an advertisement run in 1990:

> Entwicklungen, die Fragen der Ethik aufwerfen, wie gentechnologische Experimente an menschlichen Keimzellen werden bei uns grundsätzlich nicht betrieben.[40]

By defining industrial technology use as a morally irrelevant field of application and at the same time acknowledging the existence of ethical problems in other technology fields of the life sciences, the chemical industry has sought to provide a defense from the morally based attacks which it has faced from the outset of the technical controversy. At the same time, this type of issue definition has constituted an attempt to restrict public and political debate on the commercialization of genetic engineering to safety issues, that is, to questions dealt with

[40] For this type of industry informatory communication see also Brauer (1989a: 172; 1993: 317-18), Bayer (1993: 9), and Schering (Gentechnik bei...: 4).

above all on the basis of scientific-technical expertise. It has been meant to assure the maintenance of an expert status facilitating the exertion of influence on regulatory decision-making.

2.3.3 (Re)producing Trust and Credibility

The advantage that industry gains from focusing debate on safety issues is that these questions can be dealt with in the framework of scientific approaches. On these argumentative grounds industry actors are sure of themselves and believe themselves superior to the technology protesters. Still, scientific-technical resources have lost some of their utility in public risk debate. First, in the general process of institutionalization and professionalization of the new social movements, there have emerged several »alternative« science institutes challenging industry experts with a steadily growing counter-expertise. Second, public risk perception and evaluation are increasingly influenced by losses in credibility and trust on the part of the risk producing and controlling institutions. This has reduced the persuasiveness of »facts«, especially of those in the narrow framework of science and technology, of industrial risk communication.

In the late 1980s, after two decades of recurrent minor and major conflicts about technology and environmental issues, this fact was brought home to wide parts of the chemical industry. In the interviews carried out with company and association representatives, the interviewees usually referred to the difficulties involved with advocating industrial genetic engineering positions on the grounds of factual knowledge, to the emotions involved, to the public's generally increased sensitivity regarding technology risks and its growing mistrust of the chemical industry which it viewed as a key polluter of the environment. As a consequence, at that point in time at which genetic engineering became an issue of major concern for the chemical industry, the sector reacted not exclusively with the provision of information but also engaged in communication designed to improve public trust and credibility.

The way in which the chemical industry has attempted to progressively develop confidence is by illustrating that the sector assumes a *high degree of socio-political responsibility* in using the technology at issue. The method is to give evidence that the sector

is a morally behaving agent. A socially compatible technology policy is defined as a policy that is not merely committed to *economic welfare* but at the same time safeguards and promotes *human safety and health and environmental soundness* and that is *open to public debate*. In order to demonstrate its commitment to such a technology policy, the chemical industry has resorted to *self-regulation* in terms of codes of conduct dedicated to the policy's underlying social values and objectives; it established the *Genetic Engineering Guidelines*. (In the subsequent phase, when genetic engineering turns out to be a long-lived critical issue for the chemical industry, the sector considerably expands its confidence-building effort which is then focused on direct communication with opinion making, credibility, and local protest groups.)

2.3.3.1 Transparency and Openness to Public Debate

"Acceptance and trust one only gains through openness" was one of the mottos of the above mentioned press forum on rDNA technology that Bayer held in 1989 (Strenger 1989: 4). With the same tenor it says in one of Hoechst's brochures, that the public debate on rDNA technology was a usual or even necessary process in a democratic society, and that it was a matter of course for industry to participate in this debate with great openness (Hoechst AG, Gentechnologie in...: 4). To present one's company as open to its societal environment and willing to communicate about its technology activities and the different issues involved forms part of a collective communication strategy of the German chemical industry; a collective strategy that in the late 1980s was still in an early stage of development, as the following statement by the then public relations officer of Hoechst points out:

> ... wir versuchen das, was Biotechnik, Gentechnik betrifft, natürlich einzubinden in so eine Art, ja, neue Kommunikationsstrategie, die die chemische Industrie ja insgesamt macht. Daß man sagt, okay, wir haben nichts zu verbergen, wir haben früher nicht darüber gesprochen, aber wir haben nichts verborgen. Und wer jetzt will, der kann kommen; und da gibts ja verschiedene Aktionen. ...
> Wir müssen versuchen, ... einfach sauber darzustellen, was wir tun, was wir nicht tun, und warum wir etwas tun, und warum wir etwas nicht tun. Einfach, um auch im Gespräch zu bleiben und um zu zeigen, daß hier hinter den Mauern nichts Geheimnisvolles passiert. (Brauer 1991 in Interview)

»Openness«, »open information«, and »transparency« are the key concepts that industry

employed in this phase to express its sensitivity as regards public and political technology debate. The concept which in the late 1980s only started its »career« as an expression of this society-orientation is *dialogue*. At least in »theory«, dialogue in this phase constitutes an educational effort rather than an argumentative exchange based on reciprocity and the willingness to revise positions. The following passage of the VCI's Genetic Engineering Guidelines exemplifies the typical interpretation of the dialogue concept of this time:

> Wir sehen im sachlichen Dialog mit der Öffentlichkeit ein wichtiges Instrument, um die Kenntnisse über die Gentechnik zu verbessern und damit die Akzeptanz für diese Technik zu erhöhen. Wir hoffen, daß uns die im Gesetz vorgeschriebene Beteiligung der Öffentlichkeit bei der Genehmigung gentechnischer Produktionsanlagen in diesem Bemühen unterstützt. (VCI 1990: 5)

The way in which openness and dialogue were practiced at the firm level includes inviting interested persons and groups for tours of a disputed plant, smaller-scale meetings where representatives of companies were available for questioning, lecturing, and participation in panel discussions. To give an example of the former: According to Brauer, by 1991, the Hoechst company had given more than 8.000 visitors tours of its insulin facilities. These would have comprised school classes, church groups, politicians, and representatives of trade unions and various associations (Brauer 1991 in interview).

The companies Grünenthal and Behringwerke expressed openness to public debate in yet another way which in view of the charged political and public climate was both quite understandable and striking at that point in time. Faced with the Hoechst case the two companies decided to voluntarily subject their genetic engineering units to a public hearing. In an attempt to allay public fears, Grünenthal purposively submitted its application for the construction of a unit for genetically engineered pro-urokinase[41] only after the Fourth Amendment to the Federal Emissions Act (European Chemical News, 16.1.1989). Behringwerke, which in March 1988 had applied for approval of its EPO production plant, in September 1988, when new legislation took effect, asked for its application to be treated according to the new legal provisions. Thus, it was the express wish of the two companies to have the public involved in the approval of their plants. As a Behringwerke spokesman explicated, the deliberate involvement of the public was to prevent exposing the company to "the suspicion of mysterymongering" (Frankfurter Rundschau, 17.10.1990) and, as the head

[41] Pro-urokinase is a substance used for the dissolution of blood clots.

of the Cell Technology department of Behringwerke pointed out, to avoid running into the same difficulties as the parent company:

> Wir standen damals stark unter dem Eindruck der Querelen um die Hoechster Insulinanlage und hatten das Gefühl, daß eine Genehmigung nach derzeit gültigem Bundesimmissionsschutzgesetz ohne Beteiligung der Öffentlichkeit eigentlich kein Ziel sein könnte für uns, weil ganz klar erkennbar war, die Akzeptanz gegenüber der Technik war so minimal, daß, wenn man eine Genehmigung ohne Beteiligung der Öffentlichkeit erhalten hätte, man sicherlich auf Jahre, um nicht zu sagen Jahrzehnte, mit Schwierigkeiten rechnen müßte. ... Also, juristisch hätten wir die Möglichkeit gehabt, es anders zu machen. Aber wir waren, wie gesagt, von vornherein der Meinung, die Öffentlichkeit können wir hier nicht draußen vorlassen. (Johannson 1991 in interview)[42]

At the trade association level, the organization of seminars for selected target groups presented the most pronounced form of practicing openness and willingness to communicate. In May 1989, the VCI organized a seminar on the methods of genetic engineering and its industrial use for the information of *journalists*. The seminar included a visit to a genetic engineering facility. In March 1990, the trade association invited representatives of different *church groups*. This seminar focused on questions about the ethical limits of the use of genetic engineering. With the respective official invitation of the BUND, an environmental organization also participated in these two VCI organized discussion events (VCI 1990a: 53).

2.3.3.2 Safeguarding and Promoting Public Health, Safety, Morals, and a Clean Environment

> Wir wollen die großen Chancen der Gentechnik verantwortungsbewußt nutzen. Die Chemie handelt. (advertisement text)

This is the heading of the advertisement that the VCI ran in the first half of 1990 (VCI 1991a: 61; see appendix II. p.278). The ad's main text makes clear that the term "responsible use" as it is employed in the heading refers to industry's technology use in two different

[42] To give an impression of the »dark side« of this trust seeking measure: In the case of Behringwerke, the public disclosure of the documents led to 1.800 objections against the company's plans (Company Profile: Behringwerke, *Biocompany Updates, Biopharmaceutical Company Profiles Series, September 1990, Order No. B-CP0003*, 1-7).

ways. The heading is meant to express that industry acts responsibly *because* it uses genetic engineering (see point 2.3.2.4) and in the *way* it uses the technology. The first argument implied holds that the technology's use as such was responsible behavior as it sought to seize the opportunities that the new technology provided for promoting the public good. The second argument holds that the way in which the technology was used was responsible as it gave priority to people's health and safety, environmental protection, and public morals.

This twofold responsible use of genetic engineering is also the content and message of the *Genetic Engineering Guidelines* which the VCI issued in the summer of 1990 (VCI 1990b)[43]. According to the Guidelines' tenor, it is not in the first instance the very sectoral goal of commercial efficiency which the chemical industry pursues by using the technology. The objectives of the Guidelines are instead: To better research diseases and their causes in order to develop better diagnostic methods, drugs and new vaccines; to improve the basis of nutrition and plant protection; to save energy and resources and to find environment friendly production procedures and products by using biochemical processes[44] (Ibid.: 5).

The message to be conveyed is here that industrial genetic engineering is not done exclusively for profit reasons but also or even in the first instance for contributing to the solution of pressing societal problems. Industry awards itself, so to speak, the label of a *public-interest-institution.*

The major messages in industry's attempt to enhance public trust and credibility by pointing out commitment to the generally appreciated social values of public health, safety, morals, and a clean environment, however, are those that refer to the prevention of a *violation* of these values. There is, first, the message that the chemical industry acknowledges *ethical limits* to the use of genetic engineering and views germline therapy and the production of biological weapons as being beyond these limits (see point 2.3.2.3). Second, there is the message of the *widest possible exclusion of risk.* In the main text of the 1990 advertisement it says, that public information was important for the chemical industry as the sector wanted

[43] About one year before the Genetic Engineering Guidelines were established as a collective code of conduct, the Bayer company had established similar guidelines at the company level (Bayer 1989).

[44] For a characterization of genetic engineering as a new approach to environmental protection, see Brauer (1991) and Stadler (1995: 102).

to show that it did everything possible to exclude risks to man and the environment in industrial genetic engineering.

The major activities that have been communicated to form part of this effort are, first, support of »outside regulation« - here industry has stressed its »voluntary« compliance with BMFT's rDNA guidelines and its support for a legislative anchorage of the Guidelines (see point 2.3.4); second, industry's effort at self-regulation by the establishment of *codes of responsible conduct*, the chemical industry's Genetic Engineering Guidelines; and third, the organization or support of research on genetic engineering risks.

To give an example of a substantial effort in risk research: In September 1989, the Bayer company called into existence a research project on safety aspects of genetic engineering work. The project's objective has been to promote an experimental ecological evaluation of genetically engineered microorganisms of special importance in research and production. The experimental work has been carried out by three external institutions - the Institute of Microbiology at Düsseldorf University, the Institute for Environmental Technology at the Jülich Research Center, and the Institute for Soil Biology of the Federal Agricultural Health Institute in Brunswick. The results of the study have been examined by a commission composed of representatives from each of the three institutes, the ZKBS, and Bayer. The company purposively decided against typical commissioned research (Auftragsforschung) (Bayer AG 1993: 29). Supposedly, the reason for this has been the wish to ensure that the project was considered to be »neutral« research by the German public.

By stressing the governance of industrial genetic engineering by ethical values and the attachment of highest priority to the safety aspects of any genetic engineering work being carried out or envisaged the chemical industry has sought to invalidate the protest argument that industry traded public safety, a clean environment, and morals for private profits. As the exposition of industrial political activity in the early 1990s will demonstrate, communication on industrial socio-political responsibility has been used not merely in a defensive but also in an offensive way. In a favorably changed political and public climate moral defense has been supplemented by moral attacks on those who, in industry's view, are obstructing the use of a socially and environmentally compatible technology.

2.3.4 Strategic Use of Legislation

Public communication partly designed to educate about technology-related »facts«, partly designed to cultivate trust and credibility, constitutes one focus of the chemical industry's substantial efforts to respond adequately to the situation of crisis that it faced at the end of the 1980s. The other focus was on *lobbying for and negotiation about a genetic engineering law*[45]. Up to then, lobbying had pursued the very opposite goal. Massive local opposition and the subsequent decree of the Administrative Court of Hesse, however, had made legislation transform into the principal means to bring to an end a situation in which the sector's performance in a core technology was strongly impeded. Rolof Johannson of the Behringwerke company describes that situation as follows:

> Und dann hat man aber immer mehr gemerkt, wir kommen ohne ein Gengesetz nicht aus, weil die Gegner der Gentechnik ... die wurden immer stärker. Sie haben sich immer stärker zu Wort gemeldet, und das ging gar nicht mehr in unserem Falle um Erythropoetin. Es ging darum, den Einstieg in die technische Nutzung der Gentechnik zu blockieren - eindeutig. Und wir brauchten eine bessere Rechtsgrundlage für diese Diskussion. Und deshalb waren wir dann irgendwann auch dafür, daß ein Gentechnikgesetz so schnell wie möglich kommen sollte. (Johannson 1991 in interview)

Industry's patronage of a special law on genetic engineering and its speedy passing was evidently tied to concrete expectations. The strategy changed from one of defending self-regulation to one of working to ensure that new regulation is tolerable and at the same time a bulwark against calls by protest groups for tighter restrictions as well as beneficial to the technology's public acceptance. Among the prime, more concrete objectives that the chemical industry pursued by its lobbying and negotiation efforts was the inclusion of the objective of technology advancement in the Act's definition of purpose; a reduction of the public participation hurdle; and the regulation of questions of industrial genetic engineering, on the

[45] While the chemical industry throughout the given period of time heavily engaged in lobbying at the national level, it also started to build up a lobbying position at the *European level*. The latter obtained importance in the field of genetic engineering regulation in 1988, when the European Commission proposed taking specific legislative initiatives (on the contained use of genetically modified micro-organisms, on the field release of genetically modified organisms, and on worker safety vis-à-vis biological agents; the initiatives were adopted in 1990 for implementation in subsequent years via national legislation, the first two in October 1991). In 1989, with the establishment of the SAGB, lobbying at the European level was turned into a joint undertaking of European companies (see point III.1).

one hand, and aspects of human medicine (that is, of reproduction biology and gene therapy), on the other hand, in different laws. The Act as it was passed in 1990 conforms with all three objectives[46].

The trade associations VCI and BPI made a particular effort in shaping legislation to further the goals of the chemical-pharmaceutical industry in the field of genetic engineering (VCI 1990a: 39-40). In defending the industry's core positions, two main lines of argument were deployed. The first set of arguments stressed the *damage to the competitiveness of the German industry* posed by overly stringent regulation (VCI, *Chemie-Nachrichten*, 15/11/89). The second set of arguments stressed the *threat to the attractiveness of Germany as a research and technology location* imposed by overly restrictive legislation. The latter line of reasoning was typically tied to the statement that in the case of over-regulation and adherence to broad public involvement in licensing decisions, German corporations might choose to site at least some of their new genetic engineering facilities abroad.

It is noticeable that, in the given phase, the threat of locating research and production abroad - which in the chemical-pharmaceutical industries has a long tradition and time and again is used as an approved means to enforce political objectives - was a well-calculated »lobbying-argument«; that is to say, its priority target was the political decision-maker. Assumedly for image reasons, in public statements industrial actors were rather guarded with this argumentation[47]. It was evidently an integral part of the public relations strategy of Bayer and Hoechst - who had already located essential parts of research in the United States as part of a strategy of globalization rather than as a reaction to a hostile public climate (see point

[46] According to a member of the department Research and Development of Boehringer Ingelheim, the Genetic Engineering Act met with widespread approval in the chemical industry (Pollmann 1991 in interview). Correspondingly, it says in the VCI annual report 1989/1990: "In dem verabschiedeten Gesetz sind für die industrielle Anwendung wichtige Teilaspekte sachdienlich gelöst" (VCI 1990a: 40).

[47] An exception is the BASF company. On the occasion of the Fourth Amendment to the Federal Emissions Act (BImSchG) the company vociferously and publicly threatened to relocate research and production abroad. At a press conference in this matter (on 15 September 1988) one of the managing directors explained that, for the field of biotechnology and genetic engineering, the Federal Republic of Germany, at the latest since the 1 September of that year, was no longer the optimal location ((Die Zeit, No. 217, 17/9/1988). A possible explanation for this exceptionally »offensive« corporate behavior in an extremely sensitive public climate is that the tightening up of the BImSchG provided the company with a welcome occasion to revise a wrong decision without *Gesichtsverlust*; the decision to concentrate on the research location Germany (Die Zeit, No. 47, 18/11/88, p. 25).

I.3) - to stress that the multinationals were firmly resolved upon remaining faithful to the *Standort Deutschland*. The then head of the Bayer company, Strenger, on the occasion of a press forum on genetic engineering declared that the company believed in the future of its home country as a location of modern technologies (Strenger 1989: 9). And the then head of the Hoechst company, Hilger, played the role of the "Musterknabe" in public statements (Die Zeit, No. 47, 17/11/89, p. 42), who even by the most unfavorable conditions would not be driven out of the country.

The chemical industry's general reservedness with economy-related reasoning in the public arena was abandoned in the early 1990s, when a difficult national economic situation considerably strengthened the political appeal of such arguments.

2.4 Public Dialogue (mid/1991-1994)

This last phase that I distinguish is characterized by continuity as regards the main feature of industrial political activity in the preceding phase: In the early 1990s, the chemical industry increasingly engaged in public communication. In particular, it expanded communication on the way in which it views the sector taking its socio-political responsibility in industrial genetic engineering, and intensified its efforts to earn public support through willing engagement in open dialogue.

The two phases differ above all in the following two respects. First, »open dialogue« was no longer predominantly defined and practiced as one-way-communication. Instead, *open dialogue* defined as two-way-communication changed from being a minor element in industrial public communication to being its *key concept.* The chemical industry also acted on this new definition of dialogue: It considerably expanded *direct contacts and active discussion* with relevant groups, organizations, and the population. The sector attached greater importance to interactive methods, and one-sided communication lost its prior dominance. The new communication policy was also pursued in relation to parts of the supraregional protest actors (especially in relation to those groups that in the given period of time either changed to a more pragmatic protest policy or continued to pursue such a policy). The antagonistic stance towards these social actors in the 1990s lost its prior dominance. Direct contacts and active discussions with environmental and consumer organizations became no longer an

exception.

Second, while in the preceding phase public communication, without any noticeable exception, was designed to work at reassuring and de-dramatizing, in the given phase an essential part was of a *dramatic, moralistic, and offensive design.* The most important example of this type of public communication is the nation-wide four-month issue advertising campaign that the chemical industry launched in November 1992 and denoted "Initiative Pro Gentechnik". In IGL documents this campaign is pertinently referred to as the "Meinungs-Offensive Gentechnik" (IGL 1994: appendixes). The main set of arguments of the ads run in the context of this campaign stress the *irresponsibility of an impediment of the use of genetic engineering caused by over-regulation or political motives* as this endangered not only Germany's chemical industry and science but Germany's jobs and prosperity, and the high standard of living and quality of life. The primary purpose of the campaign was to mobilize political and public support for less restrictive legislation. The political decision for an amendment of the Genetic Engineering Act at that time was already taken. In the same month in which the campaign was launched, parliament passed a resolution to change the Act in order to ease some of its restrictions. The purpose of the campaign was to cultivate political support and to bring its interests to bear as broadly as possible on the deregulation initiative.

Indeed, the chemical industry's contentment with the Act had been of a very short duration. Only a short time after the Act had come into force, the sector had started to *lobby for the Act's deregulation.* This lobbying effort reached the critical point when in October 1992 the VCI, the BPI and other specialist associations, the IG-Chemie and scientific associations jointly published the "Memorandum zur Gentechnik in Deutschland". In similar moralistic terms as employed in the advertising campaign this position paper targeted the political decision-maker with claims regarding the irresponsibility of not seizing the technology's opportunities.

The campaign's and memorandum's resort to rather drastic tools of persuasion must be seen against the background of a favorably changed political *and* public climate at that time. Two years after the Genetic Engineering Act had came into force, a range of factors coalesced to provide support for genetic engineering while eroding the position of the opponents: These factors include, besides parliamentary support for deregulation, a changing climate of public

opinion (Hennen & Stöckle 1992: 53), scientific advances (particularly in the medical sector), and last not least, the problems associated with Germany's reunification and an increasingly evident economic recession. The latter events did not merely help to shift attention from the rDNA issue. What is more, the widespread emphasis placed on economic development presented an *opportunity to establish linkages with a popular theme.*

In short, the fortunate contextual conditions provided industry with a special opportunity to cultivate government and public support for the technology at issue. Industry seized this opportunity in two ways: First, by expanding interactive public dialogue designed to build trust and credibility; and second, by a mass media performance designed to win public and political support by *moral appeal and moral identification.*

The increased importance of interactive methods and the engagement in identity-building communication are the major characteristics of industrial public communication in the given phase. As far as the communication media are concerned, it can be noted that these are as diverse as in the late 1980s. Corresponding with the new emphasis on direct contacts the chemical industry uses discussion events of a various kind for communicating genetic engineering; among these are for the first time *nation- and sector-wide Open Days* and *discussion forums of a more complex structure* geared towards agreement among the participating actors. Further, with the advertising campaign and the additional resort to sound broadcasting[48], the sector has significantly expanded *mass media communication.*

As compared to the late 1980s, industry in the early 1990s attaches greater importance to *target-specific public communication.* The priority targets are political decision-makers, opinion making professions and social groups such as journalists, politicians, top executives of science and economy and credibility groups such as environmental organizations, teachers, students, professors, church representatives, and practitioners. Local communities remain a major target, evidently, specific to the company level. As will be argued below, the Hoechst/Schering subsidiary AgrEvo has been the most committed to mobilizing local support for its genetic engineering projects. As the only German chemical company carrying out field

[48] It is a new younger target group which the VCI has sought to reach via radio since 1993. In sound broadcasting the subject of genetic engineering is presented in matter-of-fact, news-like dialogues without musical background (Chemie und Verantwortung ..., folder).

trials, it has been a priority target of protest against deliberate release experiments and thus, has been very active in public communication at the local level.

Altogether, it can be summarized, industrial public communication in the 1990s does not merely expand but also reaches a new stage of *organization* and *professionalization*. The sector makes a substantial effort at organizing collective action through the trade association. The professionality of this joint action consists of target-specific communication, the great diversity and target-specific use of communication channels, and coalition-building with major economic and social groups. And last but not least, it consists in the politically sensible timing of the use of specific communication channels and lines of argumentation. Seizing the opportunity to establish an association with an issue prominent on the political and public agenda, the chemical industry has expanded economic argumentation - previously reserved for the political arena - to comprise the public arena, and seized its »home-field advantage« by engaging in a »moral crusade« for the national economy.

2.4.1 Dialogue as a Communication Program

In the mid 1990s, »dialogue« advanced to the overarching and integrating communication approach of the chemical industry (IGL 1991a: 36). The VCI and its public relations organization, the Initiative "Geschützter Leben" (IGL, see point III.1.1), brought into being the communication program "Chemie im Dialog". The rDNA issue formed from the outset part of the new program; in 1991/1992, when the VCI determined the amendment of the Genetic Engineering Act as a major political objective, it came to present one of its (three[49]) key subjects (IGL 1991a: 36).

The concept of dialogue, as a VCI brochure states, stands for the efforts of the chemical industry not only to fulfill its information duties but simultaneously to produce consent regarding present and future actions by public dialogue (VCI 1992b: 26). The objective of the new communication program would be "to learn from each other" (Ibid.: 27). These definitions well illustrate the new approach in communicating genetic engineering: It

[49] The other two subjects are »environment« and »chlorine«.

is the attempt to earn public support by willing engagement in direct contacts and active debates and conveyance of the message that this engagement is geared towards finding agreement on those aspects of genetic engineering about which the public expresses concern. Industrial public communication has banked on the trust- and image-building quality of *»deliberative« communication.*

As the communication program "Chemie im Dialog" intended, genetic engineering dialogue has been performed on *two levels*, "in order to demonstrate that the chemical industry's willingness for dialogue is as broad as possible" (Mariacher 1991: 30). The two levels are the *direct physical level* and the *level of mass communication.* The dialogical effort has focused on face-to-face communication - so-called "direkte Dialog- und Konsensinitiativen" (IGL 1993: 3) - on immediacy and realness of encounters with industry's traditional and new »stakeholders«.

VCI-organized dialogue on the direct physical level includes, first, holding broadly advertised big events. The central event is here the Bundesweite Tag der Offenen Tür. The first of these nation- and sector-wide Open Day events was organized in September 1990 as the prelude to the new communication program. Genetic engineering was a major subject of discussion of this event as well as of the next Open Day in 1993. Second, the VCI has organized so-called Dialogveranstaltungen for the above defined target groups. Furthermore, a series of regional discussion events has been organized. The targets of this »dialogue on the spot« have been the interested public, environmental consultants and its own line of business: industry, producers, processors, and purchasers (IGL 1992: 24). And last but not least, the trade association organized so-called Dialogpartner-Veranstaltungen for the group of persons which acceded to the advertisement invitations for written dialogue (see below). The groups were offered information on and discussion about genetic engineering and a visit to a genetic engineering plant (IGL 1991a: 3ff.).

On the level of mass communication, the public was asked by ads run under the motto of "Chemie im Dialog" to enter into dialogue with the chemical industry. The first advertisement which the VCI launched in the transitory phase of the dialogue program asked the reader via a response coupon to get into touch with the economic actor. The coupon's heading "Ihre Meinung ist uns wichtig" was meant to signal industry's willingness for such a contact (see

appendix II. p.278). A second ad, launched in 1992, was itself designed as dialogue: It was composed of industry's answers to the questions prominent in public debate. Again the reader was asked to enter into a personal dialogue on these matters by letter, telephone or by participation in specific dialogue actions offered by the association (see appendix II. p.279).[50]

At the single-firm level dialogue generally has been performed by an increased effort to keep, in one way or another, in touch with major local groups, both technology-critical and technology-supportive. In some cases, dialogue has been organized in a much more elaborate way. As the next section will illustrate, some of the chemical companies have initiated or participated in discussions of a more structured and result-oriented kind. The present section provides still another example of an elaborate form of company dialogue: The dialogue, based on a *multi-level communication program*, that the Hoechst/Schering subsidiary *AgrEvo* led with local communities located near to test sites.

AgrEvo was founded on 1 January 1994 as a fusion of the two plant protection sectors of Hoechst and Schering. The company is currently the only domestic chemical enterprise in Germany that carries out field trials with genetically engineered organisms, namely plants in the context of agrochemical research and product development. Via AgrEvo the parent companies Hoechst and Schering seek to ensure two markets: the market for genetically engineered seeds and the market for plant-protective agents to which the seeds are adjusted. In view of the past experiences with local and national protest in the field of pharmaceuticals, AgrEvo decided to accompany the field trials with specific communicative measures. It developed an elaborate program of *proactive communication* specifically designed for test sites. This program provides for *three levels of communication* referring to the different local groups targeted and ranked for communication according to their significance as decision-makers, opinion makers and credibility groups. Since 1993, AgrEvo has put this program to use. At the first level, the company has addressed the mayor and the municipal council. At the second level, the circle has been expanded by the inclusion of opinion makers such as teachers, church representatives and environmentalists. At the third level, finally, the company

[50] The ads were issued in all supraregional daily and weekly newspapers and in selected regional dailies.

has organized public events such as town-meetings. In the first year that AgrEvo applied its communication program, it ran, according to their own information, 300 different events referring to four different test sites (Waitz 1996 in interview).

After three years of a pronounced effort at mobilizing support for field releases, the situation is more relaxed than two years ago but it is still difficult (cp. point 2.3.2). According to one of AgrEvo's officials responsible for corporate communication, the major reason for the difficulties that the company has faced is the following: The company started its field trials with the "most disadvantageous biotechnology product" (Waitz 1996 in interview), namely herbicide-resistant plants. It was almost impossible, the AgrEvo official (who regards himself as an "Industriepolitiker", Ibid.) concludes, to communicate the reasonableness of the use of a still hotly disputed technology for a more effective treatment of plants with herbicides, that is, with a product that had the extremely negative connotation as a polluter of drinking water and the environment.

This new assessment of the situation has not gone along with an abandonment of the dialogue strategy. What has changed is the goal definition. It changed from the production of acceptance to the progressive development of *tolerance* (Ibid.).

2.4.2 Post-Corporatist Negotiations

In the German rDNA debate chemical companies have instigated and participated in some discussions of a pluralist, more structured and result-oriented kind in the noninstitutional political arena. In this section I shall present three of these »round table« talks. Two have been instigated by chemical companies, the third by an academic institution and held with the co-operation of the chemical industry. These discussions have a pluralist character as they involve representatives of different social groups including new social movement actors. They have a more pronounced structure in so far as the number of participating actors is limited and as they follow some form of discussion procedure. They are result-oriented as they are keyed to finding agreement on specific genetic engineering issues.

The first example that I shall give of post-corporatist negotiation is the *Genetic Engineering Dialogue* instigated and organized by the German subsidiary of *Unilever*. Faced with a low

consumer acceptance of the application of genetic engineering in the agro-food sector, the dutch company Unilever, one of the biggest food companies of the world, has initiated »round table« talks in different countries concerning the issue of novel food. These talks have as an objective to work out lines of consent in this area of application of genetic engineering and were first established in the Netherlands. As the negotiations here proved successful, Unilever decided to instigate them as well in Great Britain and Germany. In Germany, the Unilever "Gen-Dialogue" was started in 1994 and has recently been brought to an end. The key subject of the negotiations has been an enzyme produced by the use of genetic engineering, xylanase, an enzyme that is used in bread baking mixes and prevents the bread from becoming sale. Up to now the enzyme is not on the German market. The objective has been to reach a joint assessment of the product. Unilever has made available all data on the product, also confidential data, and has laid bare the production process. Further negotiation topics have been herbicide-resistant plants, labelling, and the EU-novel-food-directive (Löhr 1995: 6).

The organizations that have participated in the Unilever dialogue are the environmental organization BUND, the consumer organization Verbraucherinitiative, the trade union Gewerkschaft Nahrung, Genußmittel, Gaststätten, the alternative research institutes Katalyse and Öko-Institut Freiburg, and an association of housewives, the Hausfrauenbund. In the course of the negotiations the round table was extended by the Swiss company Nestlé and the chain Spar in order to increase the reach of potential compromises (Behrens, Meyer-Stumborg & Simonis 1996). The German consumer organization "Arbeitsgemeinschaft der Verbraucherverbände" (AgV) and the critics' organization Gen-ethisches Netzwerk were invited to participate but refused to do so. The reasons stated for the refusal included the participation of only one representative of industry, the lack of ethical and social discussion aspects, and the requirement of keeping all discussion topics and results confidential (Menrad et al. 1996: 39) - the "Gen-Dialogue" took place »behind closed doors«; even its existence was made public only after about one year of debate (Die Zeit 7.7.1995, p.25). Due to increased work load, the Öko-Institut moved in the course of the negotiations from active participation to advising the participating organizations (Ibid.). The BUND left the talks shortly before they were brought to an end. The reason the environmental organization has stated for this decision is that the debate exclusively dealt with safety questions and did not discuss wider economic and social consequences of the technology's use in food processing.

The consensus reached by the remaining participants is that *all* food-enzymes should

be examined for their production- and product safety before they are introduced to the market (Riewenherm 1996: 16). Although this »minimal consensus« falls short of the targeted consensus, it is not just confirming reality; at present, enzymes, no matter whether genetically engineered or not, can be introduced to the market without any examination in Germany.

In and among the consumer and environmental organizations, the opinions on the course of the negotiations and their results vary. While there is, on the one hand, the opinion that the negotiations were an extremely exhausting but still rewarding experiment as expressed by the representative of the Verbraucher Initiative (Riewenherm 1996: 115), on the other, there is a clear-cut negative assessment. This is based on discontent with the fact that it was not possible to build a consensus about an uncompromising labelling policy[51] and the fact that economic and societal consequences of the use of genetic engineering in the food industry were excluded from debate.

Unilever Germany obviously does not engage in public criticism of its own project. It has made the statement, however, that the dialogue initiative so far has not proved very effective as far as positive effects on the acceptance among the German population of genetically engineered food was concerned (Unilever, Umweltaktivitäten: 17). At present at least, the company, nevertheless, continues to bank on »dialogue«. On the proposal of the Verbraucher Initiative the participation in a further dialogue project dealing with genetically engineered soya is already envisaged (Riewenherm 1996: 16).

The second example that I shall mention is the *Gesprächskreis Hoechster Nachbarn* (GHN) which has made genetic engineering one of its subjects of debate. This »local round table« has been established by the *Hoechst* company as a response to the severe image damages incurred after the series of accidents in the spring of 1993 (Dreyer & Kesselring 1996, Kesselring 1995). It differs from the Unilever project in so far as the meetings in principle are not held »in camera« but are public. The discussion parties are selected according to specific rules, the interested public, however, as well as journalists are invited to join the meetings. The *Gesprächskreis* which includes a moderator who acts as a »neutral mediator« is to deal primarily with safety and environmental matters. In January 1995, it chose genetic engineering in the pharmaceutical and agricultural sector as one subject of debate. The

[51] The company's agreement as regards the issue of labelling is restricted to advocating a consumer right for all information relevant for and of interest to the consumer (Riewenherm 1996: 16).

discussion basis was constituted by Hoechst's genetic engineering program which was presented by two company officials. While the technology's application for the production of pharmaceuticals met with wide approval, there was vehement debate about its use in the agricultural field.

According to the forum's statutes and articles, the forum has the possibility to formulate recommendations for measures that the company should take in the field of safety and environmental protection. These recommendations which are to be formulated in principle on the basis of the consensus-principle (GHN-statutes and articles) are to contribute to the opinion-formation and decision-making process of the chemical enterprise (Ibid.)[52]. In the case of the genetic engineering debate, recommendations did not come to be formulated. Most of the discussion dealt with the issue at a more general level so that negotiations about concrete applications soon got stuck (Höchster Kreisblatt, 28.1.95; Frankfurter Westlicher Stadtanzeiger, 15.2.1995).

The example that I shall give of an »externally« instigated dialogue project, in which representatives of the chemical industry have acted as participants, is a »round table« project initiated and organized by the *Wissenschaftszentrum Berlin für Sozialforschung* (WZB). The "WZB-Verfahren" which was funded by the Ministry for Research and Technology was started in 1991 and brought to an end in 1993. It presents a participatory technology assessment project and moreover a social scientific experiment concerning the chosen participation model. The research institute asked industrial and environmental representatives and representatives of the politico-administrative system and the research community to participate in joint discussions about the cultivation of *herbicide-resistant plants*. The objective was to discuss risks and benefits of this application of rDNA technology and to formulate joint recommendations for action to be taken regarding the field of application. While the discussion meetings were held »in private«, the course of the negotiations and their results have been comprehensively documented and published - basically a result of the project's organization as a social scientific experiment (see e.g. van den Daele 1994, van den Daele & Bora 1996).

The participants in this first »experiment« of a participatory technology assessment

[52] The GHN statutes and articles determine that the company has a duty to inform the forum about whether or not it has complied with the recommendation and to justify the respective decision.

project in the field of rDNA technology did not reach an agreement: at the beginning of the final session (in June 1993), the participating eight environmental organizations jointly left the project[53]. The occasion for this step was the final evaluation of the past two years of discussion that the project organizers presented the participants. According to the environmental organizations, the project organizers had totally pushed aside fundamental concerns about the use of herbicides and chemicalized agriculture as such which the environmentalists had put forward in the preceding two years of discussion. The reproach was that on the grounds of a basic acceptance of the present structure and methods of modern industrialized agriculture, the evaluation had solely taken into consideration the advantages and disadvantages of the technological application at issue. That meant, the environmental organizations argued, that the WZB project had chosen the same misleading approach as the Commission of Inquiry on the Opportunities and Risks of Genetic Engineering, namely a technology-induced approach instead of a problem-induced approach (Löhr 1993: 12). According to the environmental organizations, the latter approach is the more appropriate one as it assesses a technology on the basis of a more complex scenario of societal development.

Industry, by contrast, saw its positions in these negotiations widely confirmed. Thus, not surprisingly, one of the Hoechst participants whom I asked for an evaluation in an interview appreciated the project. The discussions had been constructive and fruitful (Waitz 1996 in interview).

These examples of »post-corporatist negotiation« indicate that there is a high probability that new social movement organizations participating in such negotiations become disappointed. The organizations tend to attempt to lead the discussions at a more fundamental and society-related level. This attempt is doomed to failure, when the majority of the negotiation partners is interested in restricting the discussion to a debate on technical safety or in adopting a technology-induced approach. The company which instigates or voluntarily enters into interorganizational negotiations obviously is not interested in discussing about wider societal consequences of genetic engineering applications. For the chemical industry the repeated frustration of its major political challenger in the context of such negotiations implies a problem in so far as it may transform into the challenger's increased resort to the strategy of

[53] The Gen-ethisches Netzwerk left the negotiations after the very first meeting.

confrontation and may have a negative effect on the industry's public image which engaging in interorganizational negotiations is actually meant to cultivate. However, at the moment at least, the willingness to engage in such negotiations on (parts of) both sides seems undiminished.

2.4.3 Taking the Initiative: The "Meinungs-Offensive Gentechnik"

The use of interactive methods and directly responding to public concerns constitutes one major political effort of the chemical industry in the given phase. Another major effort is the nation-wide four-month advertising campaign which the chemical industry ran between November 1992 and February 1993 and which called for the technology's support with self-evident and aggressive argumentation.

The campaign was designed as advertising for a beneficial technology, not as institutional advertising. The advertisements were displayed as an "Informationsangebot" by the German chemical industry denoted "Initiative Pro Gentechnik". The campaign's designation as information provision and the use of wording typical of a new social movement to denote the campaign can be understood as the attempt to convey the message that the campaigning industry did not simply stand up for its own benefit but also, or even in the first place, for the public good.

This impression was to be fostered by the use of "Testimonial-Anzeigen" (IGL 1994: 4). It was not in the first place industry itself which spoke out in the advertisements, but eminent persons being »interviewed« by the industrial actor; the chemical industry led dialog. The campaign was composed of single advertisements made up of the same summarizing text and interviews with eminent persons in the economy (including the then president of the IG Chemie), science (a Nobel prize winner in chemistry), and academia (an ethicist and theologist). Moreover, it included a manifesto-advertisement which displayed eighteen signatures of representatives of these social sectors (the economy was, amongst others, represented by the presidents of the three peak trade associations DIHT, BDA, and BDI and the president of the IG Chemie) plus a church representative, the bishop of Mainz. With the manifesto-motif the campaign was brought to an end (see appendix III. p.283).

The creation of a combined sponsorship on a political issue with groups and

project in the field of rDNA technology did not reach an agreement: at the beginning of the final session (in June 1993), the participating eight environmental organizations jointly left the project[53]. The occasion for this step was the final evaluation of the past two years of discussion that the project organizers presented the participants. According to the environmental organizations, the project organizers had totally pushed aside fundamental concerns about the use of herbicides and chemicalized agriculture as such which the environmentalists had put forward in the preceding two years of discussion. The reproach was that on the grounds of a basic acceptance of the present structure and methods of modern industrialized agriculture, the evaluation had solely taken into consideration the advantages and disadvantages of the technological application at issue. That meant, the environmental organizations argued, that the WZB project had chosen the same misleading approach as the Commission of Inquiry on the Opportunities and Risks of Genetic Engineering, namely a technology-induced approach instead of a problem-induced approach (Löhr 1993: 12). According to the environmental organizations, the latter approach is the more appropriate one as it assesses a technology on the basis of a more complex scenario of societal development.

Industry, by contrast, saw its positions in these negotiations widely confirmed. Thus, not surprisingly, one of the Hoechst participants whom I asked for an evaluation in an interview appreciated the project. The discussions had been constructive and fruitful (Waitz 1996 in interview).

These examples of »post-corporatist negotiation« indicate that there is a high probability that new social movement organizations participating in such negotiations become disappointed. The organizations tend to attempt to lead the discussions at a more fundamental and society-related level. This attempt is doomed to failure, when the majority of the negotiation partners is interested in restricting the discussion to a debate on technical safety or in adopting a technology-induced approach. The company which instigates or voluntarily enters into interorganizational negotiations obviously is not interested in discussing about wider societal consequences of genetic engineering applications. For the chemical industry the repeated frustration of its major political challenger in the context of such negotiations implies a problem in so far as it may transform into the challenger's increased resort to the strategy of

[53] The Gen-ethisches Netzwerk left the negotiations after the very first meeting.

confrontation and may have a negative effect on the industry's public image which engaging in interorganizational negotiations is actually meant to cultivate. However, at the moment at least, the willingness to engage in such negotiations on (parts of) both sides seems undiminished.

2.4.3 Taking the Initiative: The "Meinungs-Offensive Gentechnik"

The use of interactive methods and directly responding to public concerns constitutes one major political effort of the chemical industry in the given phase. Another major effort is the nation-wide four-month advertising campaign which the chemical industry ran between November 1992 and February 1993 and which called for the technology's support with self-evident and aggressive argumentation.

The campaign was designed as advertising for a beneficial technology, not as institutional advertising. The advertisements were displayed as an "Informationsangebot" by the German chemical industry denoted "Initiative Pro Gentechnik". The campaign's designation as information provision and the use of wording typical of a new social movement to denote the campaign can be understood as the attempt to convey the message that the campaigning industry did not simply stand up for its own benefit but also, or even in the first place, for the public good.

This impression was to be fostered by the use of "Testimonial-Anzeigen" (IGL 1994: 4). It was not in the first place industry itself which spoke out in the advertisements, but eminent persons being »interviewed« by the industrial actor; the chemical industry led dialog. The campaign was composed of single advertisements made up of the same summarizing text and interviews with eminent persons in the economy (including the then president of the IG Chemie), science (a Nobel prize winner in chemistry), and academia (an ethicist and theologist). Moreover, it included a manifesto-advertisement which displayed eighteen signatures of representatives of these social sectors (the economy was, amongst others, represented by the presidents of the three peak trade associations DIHT, BDA, and BDI and the president of the IG Chemie) plus a church representative, the bishop of Mainz. With the manifesto-motif the campaign was brought to an end (see appendix III. p.283).

The creation of a combined sponsorship on a political issue with groups and

professions which otherwise do not necessarily share industry's goals was an attempt to add to the legitimacy of industry's position by showing it to be in the general interest[54]. At the same time, it was meant to isolate and moralize opponents by declaring their position outside the societal consent.

2.4.3.1 Appealing to Morality

In terms of content, the advertisements constituted a *moral appeal.* It was a moral appeal to all groups and individuals of society to give their support to the use of a technology that was of unassessable value to society's well-being. These groups and individuals were called upon to accept the same responsibility that they expected to be taken by industry: Responsibility for the public welfare as well as for public health and a clean environment. The following quotes shall illustrate the way in which industry appealed to the sense of responsibility of political decision-makers, the media, environmentalists, and citizens. In the manifesto-advertisement it said:

> Wir appellieren an die politische Führung unseres Landes, an die Entscheidungsträger in Bund und Ländern, an alle verantwortungsbewußten Bürger: Bauen Sie die Hürden für die Gentechnik in Deutschland ab! Wir brauchen diese Basistechnologie, um unsere Verpflichtung für die Zukunft unserer Kinder zu erfüllen. Wir appellieren an Ihre Verantwortung - für unser Land.

And two of the »interviewees« claimed:

> Gerade die Umweltbewußten müssen sich vehement für die Gentechnik einsetzen. (quoted from the Nobel prize winner)

> Es muß noch viel deutlicher werden, daß die Publizistik genauso eine hohe moralische Verantwortung hat wie die Wissenschaft. So wie gentechnische Projekte ethisch vertretbar sein müssen, so müssen sich auch die Autoren der öffentlichen Aufklärung über Wissenschaft und Forschung ihrer moralischen Verantwortung in jedem Einzelfall stellen. (quoted from the ethicist)

The campaign did not merely rely on moral appeals. It also banked on *moral stigmatization.* Statements like the following were meant to engage the reader's sense of morality and

[54] In this sense, the VCI, in its annual report 1992/93, stated that the manifesto-advertisement demonstrated "daß es ein breites Votum dafür gibt, die Chancen der Gentechnik in Deutschland zu nutzen" (VCI 1993: 60).

indignation against the technology's opponents and critics:

> Wer heute noch die Chancen der Gentechnik verhindern will, handelt unverantwortlich. (quoted from the ethicist)

The main target of industry's moral appeal and stigmatization was the executive and its bureaucracy. The campaign's key message can be summarized as follows: While industry and its allies were willing and determined to take the required responsibility (even speaking out in a joint initiative) the politico-administrative system had bowed to an emotionalized public opinion and some radical technology opponents and that way had deprived German citizens of their quality of life, their jobs, their health[55], and a sound environment.

The fact that the stronghold against which the campaign sounded the attack was already taken suggests that deregulation had complementary objectives. Support of politics in improving public acceptance is likely to have been one of these objectives[56]. As the subsequent section will argue, it was a declared objective of the chemical industry in the early 1990s to induce government to expressly declare itself supportive of the disputed technology.

2.4.3.2 Communicating Genetic Engineering as a Force for Economic Development

As regards rhetorics, one is inclined to describe the campaign as pure drama. The next quote from the manifesto-advertisement provides a good illustration of the use of *dramatization*:

> Durch Gesetze und Verordnungen wird die Gentechnik bei uns zu Tode verwaltet. ... Es ist höchste Zeit, daß dieser Exodus gestoppt wird.

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[55] The health discourse centers on one of todays most feared diseases: "Wann wir AIDS besiegen werden, weiß ich nicht. Aber ich bin sicher: Ohne Gentechnik hätten wir den Kampf bereits heute verloren!" (quoted from an AIDS-researcher).

[56] Another objective has been to mobilize support for a general improvement of the Standort Germany. The campaign must be seen against the background of the at that time economically critical situation of the industrial sector. The campaign was part of the general location-Germany-debate (Standort-Deutschland-Debatte) which criticized a highly unfavorable investment climate in connection with high personnel and social expenditures, taxes, and increasing environmental charges.

According to the Initiative Pro Gentechnik, everything is at stake in a country that refuses to make full use of a new core technology: Germany's chemical industry and science, Germany's jobs, prosperity, and standard of living as well as a high quality of life defined in terms of health and a clean environment.

The rhetorically forceful re-direction of public fears from the risks of the technology's use to concerns about the consequences of its non-use mainly relies on linking the rDNA issue to a policy and public issue of increasing national concern that is complementary to the pro-technology propaganda: German industry's "deepest crisis of the post war period" (Der Spiegel 19, 1993: 140). With catchphrases such as "loss of competitiveness", "relocation of production abroad", "loss of jobs", "threat to the research and industry location Germany" the campaign's doom-laden visions were embedded into the larger frame of Germany's prominent and, in view of growing recession, more and more pressing issue: The nation's loss of leadership in European research and industry. In the manifesto-advertisement it says:

> Doch wie andere Staaten die Gentechnik zu fördern, setzt Deutschland ein Stück Zukunft aufs Spiel. Wie schon einmal bei der Mikroelektronik. Dürfen wir es zulassen, zweitklassig zu werden?

By framing the rDNA issue in economic terms the chemical industry has sought to meet the tone of the time and thereby reinforce argumentative cogency and resonance in the public at large. The transformation of a technology issue into an economic issue of national interest is particularly able to exert pressure on a political system that has put jobs and economic upswing on the top of its agenda.

At the same time this new issue frame was an attempt to neutralize the favorable resonances of the technology opponents and critics. In times of recession the technology risk discourse offers an appropriate target of indignation. Its sponsors come to be viewed as »coercive utopians« and »neopastoralists« who retard economic growth and thereby make society renege on its obligations to the poor and to future generations. In this sense, the difficult economic situation that Germany has faced in the 1990s clearly has played into the chemical industry's hands.

2.4.4 Coalition-Building for Deregulation

As has been mentioned above, two and a half years after the Genetic Engineering Law had come into force, parliament proposed a resolution on changes of the Act designed to ease some of its restrictions (in November 1992). The resolution was based on a broad political consent. This parliamentary decision was preceded by extensive lobbying by both industry and the research community. For the first months after the law's enactment the two interest groups had engaged in lobbying for deregulation. Actually, their initiative did not meet with much opposition from the legislative and executive[57]. Early in the implementation phase politicians had come to the conviction that the law required amendment.

The focus of industry's criticism was on overbureaucratic implementing regulations (Durchführungsverordnungen[58]) which entered into force shortly after the Act itself. The bureaucratization of decision-making, especially in lengthening and increasingly costly approval procedures for genetic engineering facilities and projects, was claimed to be out of all proportion to the risks, anti-science, and opposed to innovation. This criticism was thoroughly put forward in the context of a public hearing on the implementation of the Genetic Engineering Act that the Committee for Research, Technology and Technology Impact Assessment and the Committee for Health of the Bundestag conducted in February 1992. The sharpest critics were VCI and BPI together with the Deutscher Industrie- und Handelstag (DIHT)[59] which expressed their opinion in a joint statement[60]. The associations flanked the criticism of bureaucratization by the express threat that industry would choose to

[57] It is important to note here that in the 1990 federal elections the Green Party did not manage to get into Parliament.

[58] In the Law itself only the essential subject matters are defined. Their concretization occurred by legal regulations (Rechtsverordnungen). The enforcement of these provisions is not carried out federally but by the different regional authorities (Regierungsbezirke).

[59] The DIHT is one of Germany's three structurally superordinated trade associations. The DIHT represents the regional interests of trade and industry. The other two peak associations are the Bundesvereinigung der Deutschen Arbeitgeberverbände (BDA), and the Bundesverband der Deutschen Industrie (BDI).

[60] The Dr. Karl Thomae GmbH which was running its T-PA facility without any problems (see point III.1, ft.1) and some other chemical companies did not see the need for the law's amendment. Their demand was restricted to an "sub-statutory practicable procedure" (untergesetzliche, praktikable Vorgehensweise) (Handelsblatt 13.2.1992) for the international specimen exchange and for ensuring a concerted performance by the Länder.

expand elsewhere. The unfavorable regulatory and political conditions for the German Standort in the technology field and synergic effects with other disadvantageous conditions (shortest working hours, longest holidays, high wage additional expenses, high energy costs, and Europe's highest environmental costs) and the globalization of the markets would force industry to sacrifice research and production in a core technology in their home country and to switch investment plans in favor of other countries; this would be the only possible way to compete on the same terms with other leading chemical and pharmaceutical firms (Handelsblatt, 13.2.1992). Thus, the controversy about genetic engineering was embedded into the highly prominent "Standort Deutschland" (location Germany) debate. It was framed as "yet another case against Germany as a *Standort*" (quote by a chemical company executive in International Herald Tribune 21.4.1993; emphasis in original).

Industry's lobbying efforts reached their peak when in October 1992 the VCI together with the BPI and other specialist associations, the trade union of the chemical industry, IG Chemie, and scientific associations jointly published the "Memorandum zur Gentechnik in Deutschland". This *successful effort of coalition-building* has to be seen against the background of a generally harmonious relationship between VCI and IG Chemie and the fact that the chemical industry has always had good relations with scientists in governmental agencies and educational and research institutes (Grant, Paterson & Whitston 1988: 263[61]). The co-operation between industry and science is still interesting to note, as in the preceding phase the relationship between these groups had been competitive rather than co-operative. As the research community at that time was not affected by the special difficulties that industry faced (public participation procedure), it neither supported special legislation on genetic engineering nor did it see a real need to speak out in public. This markedly changed with legislation which soon was considered as severely impeding basic research (VDI Nachrichten, 29.5.1992). Thus, deregulation in the early 1990s became a shared interest of industry and the scientific community.

As is typical of position papers targeted at the political decision-maker, economic argumentation plays a key role. More unusual is the moralistic tenor similar to that of the

[61] As the authors expose, scientists have often been called to defend the industry and also have played a key role in pointing out practical difficulties associated with implementing environmental policies (Ibid.).

advertising campaign. In the position paper the co-operating associations emphatically claim the *irresponsibility of not seizing the technology's opportunities*. The following argumentation on the legitimacy of applying genetic engineering to higher organisms quoted from the memorandum's appendix shall illustrate the moralistic tenor:

> Das Verbot von Methoden, um Mißbrauch zu verhindern, ist aber kein erst zu nehmendes Argument, da es der Frage nach der Verantwortung ausweicht und vortäuscht, daß der einzig sichere Weg zur Verhinderung von Gefahren der Nichterwerb von Wissen sei. Dies wäre der Versuch, sich der Verantwortung zu entziehen und wäre die totale Negierung des Nutzens einer wissenschaftlich-technischen Methode. *Die Alternative der gewollten Ignoranz anstelle von Verantwortung wäre eine unethische, unmoralische und verwerfliche Handlungsweise.* (BPI et. al 1992: 32; emphasis added)

As is indicated by the concluding passage of the memorandum, the moralistic argumentative design was not only meant to induce government to ease legislative restrictions but also to actively promote public acceptance of the technology at issue; in view of a still uncertain and unstable public climate the state was expected to take a clear positive position on genetic engineering:

> Darüber hinaus ist es erforderlich, daß sich die Grundeinstellung der Politiker und der Behörden zur Gentechnik im positiven Sinn verändert. Die Bedingungen dafür sind durch das Zusammenwirken von Politik, Gesetzgebung, Behörden, Hochschulen und Industrie zu schaffen, wobei klare Signale der Förderung der Gentechnik von seiten der Bundes- und Länderregierungen und der Politiker in Europa notwendig sind und erwartet werden. (BPI et. al 1992: 3[62])

In short, industry also worked towards establishing an »agency relationship« with government. The resource that this relationship is to furnish business with is public acceptance.

As I have emphasized under point II.1.4, it seems that the chemical industry, supported by the scientific community, has been rather successful in its lobbying effort. For the benefit of both industry and science, the revised law which came into effect on 1 January 1994 provided for a streamlining of the regulatory process and once more reduced the participation hurdle.

As far as the regulatory conditions in Germany are concerned, industry today generally

[62] Along the same lines, Hoechst's then public relations official, Brauer, has demanded that European politicians promote public understanding of the environment-related advantages of biotechnology through education and advanced training (Brauer 1991: 28).

expresses contentment. However, as the VCI itself stresses, this contentment largely results from the fact that established European regulation does not allow further changes in national legislation (VCI 1994b: 10). And such changes, actually, are considered as necessary to improve the working conditions for genetic engineering research and production (Ibid.). Therefore, in 1994 the chemical industry started an *initiative for the change of European genetic engineering regulation* relying on press work, lobbying, and mass media communication (IGL 1994: 19). Analogous to the advertising campaign at the national level, this initiative is referred to as the "EG-Offensive Gentechnik" (Ibid.).

• Die traditionellen Produktionsfaktoren Natur, Arbeit und Kapital sind heute keine hinreichende Basis mehr für wirtschaftliche Unternehmungen. Ein vierter Faktor wird immer wichtiger: die Kommunikation. Sie war schon immer das Nervensystem aller Geschäftsprozesse, gewinnt nun aber zunehmend eine eigenständige Rolle. Auf einen Nenner gebracht: *Was nicht öffentlich kommuniziert werden kann, läßt sich nicht verwirklichen.*
• Kommunikation macht Grenzen zwischen gesellschaftlichen Teilsystemen durchlässig. In diesem Diffusionsprozeß müssen auch Unternehmen eine neue Identität entwickeln: *von der Wagenburg zum "corporate citizen".*
• *Unternehmenskommunikation prägt Unternehmenskultur.* Der Dialog mit der Öffentlichkeit muß von der Kommunikation innerhalb des Unternehmens getragen werden. (Dormann 1995, quoted in Wolter 1996: 42, emphasis added)

PART C: BUSINESS POLITICAL ACTIVITY AND THE »RENAISSANCE« OF THE PUBLIC SPHERE

The general objective of the present study is a reassessment of what constitutes business political activity. With this objective the study reacts to a changed political context in which economic organizations have found themselves embedded since the 1970s in advanced modern society. This new political environment, the study claims, requires a new understanding of business political activity[1]. The case study was meant to provide the key to this new understanding with empirical »flesh«. This key is what Jürgen Dormann, the chief executive of the Hoechst company, forcefully articulates in the above quote[2]: The significance that *public communication*, or to be more precise, engaging in *»public responsibility« discourse* has gained for economic organizations in a society in which technological and economic rationalization is no longer an unquestioned process but, instead, an issue of public discourse; the key is the growing effort of economic organizations to *»cultivate« the public.*

As the case study has illustrated, the new social movements have acted as a prime

[1] For another study that reassesses political activity in advanced modern society see Kropp (1995). Kropp employs the same broad concept of political action as does the present study in order to account for the political activity of young persons in a society that is characterized by »detraditionalization« and »individualization«.

[2] Dormann has been the head of Hoechst since 1994 and represents the policy of a »new openness«. The overall objective of this policy is to get over the company's traditional »Wagenburgmentalität«, a declared exponent of which was Dormann's predecessor, Wolfgang Hilger. Dormann presented the three theses upon which the new policy is based in a speech addressed to the Chamber of Industry and Commerce (Industrie- und Handelskammer, IHK) in Frankfurt/Main on 24 October 1995.

mover in the transformation of technology development into a public issue. In general terms we can state that the analysis of the political activity of the chemical industry in the German rDNA debate has given empirical proof of what Eder (1996a) has identified as the primary effect of the institutionalization of the new social movements: The *rise of public discourse*[3]. In this public discourse the challenger and the challenged struggle, among other things, for the collective recognition of what they advance as meaningful and compelling rationales to their view and policy on modern technology. The case study has pointed out that in this struggle the chemical industry has resorted to two major political ideals: the ideal of the *responsible citizen* (see above quote) and the ideal of a *public dialogue*.

Resorting to the Ideal of the Responsible Citizen

Hence, what the case study was meant to show is that the political involvement of a major industrial sector in a current technical controversy has gone widely beyond »traditional« industrial political activity. This is to say, it exceeded negotiation in a corporatist framework of policy formulation to which industrial political activity in the first two postwar decades was largely restricted.

Throughout the rDNA debate, negotiations in camera with political and administrative decision-makers, organized labor and the academic research community have been of vital importance to the chemical industry. The sector, via its trade associations VCI and BPI, has engaged in negotiations about promotional strategies and, especially, about control strategies. Dependent upon the general political circumstances, the objective that the chemical industry pursued in negotiations about the technology's political control has been self-regulation, legislation, or de-regulation. When the rDNA debate was restricted to executive settings, the sector argued against legislation and for adherence to the sector's traditional policy of »self-regulation«. When the rDNA debate turned into a multilevel societal conflict and public participation and the lack of a legislative basis of genetic engineering research, development,

[3] Giddens makes a similar argument in explaining why it made sense to assume an interrelation between democracy and social movements. This interrelation mainly would be due to the fact that social movements created "Freiräume ... für einen öffentlich geführten Dialog" (Giddens 1997: 169). For instance, a social movement could bring aspects of societal behavior into the discursive sphere which previously were not discussed or were handled by the use of traditional procedures.

and application brought about a quasi-blockade of the technology's industrial use, the chemical industry came round to accepting the need for legislative authority to replace self-regulation. Its strategy changed from one of defending self-regulation to one of working to ensure that new regulation was industry-friendly (above all by reducing the public participation hurdle), a bulwark against calls by protest groups for tighter restrictions, and flexible to implement. When the quasi-production blockade with the new law was overcome, the chemical industry soon entered into negotiations about the law's deregulation. In these negotiations it argued for control conditions which would have had little chance of meeting with approval in the strained political climate in which the process of law giving took place but which met with little opposition in a political climate that had grown less tense after the law had come into force; as it is typical of the life-cycle of public issues, legislation had brought about a downswing phase in the rDNA debate.

Negotiations in the official political arena and behind closed doors have played an important role in the chemical industry's political involvement in the genetic engineering controversy. However, industrial political activity has not been restricted to corporatist negotiations. These were the principal industrial political activities, when genetic engineering had not yet become a public issue. When the rDNA debate developed into a public controversy, political activity in the institutional political arena, protected from the public eye, was complemented by negotiations in the half public/half private arena of the parliamentary Enquête-Kommission. When public debate got more intensive and extensive, it was increasingly complemented by activities in the noninstitutional political arena in some way or another geared towards »publicity«.

On the one hand, the chemical industry engaged more and more in *self-presentation activities* in the form of publications, institutional and issue advertising, and face-to-face communication in the context of public events. »Publicity« is constitutive of these activities. On the other hand, the sector engaged in *post-corporatist negotiations* carried on with a more or less pronounced *Öffentlichkeitsbezug*. The deliberations on genetic engineering in the context of the "Gesprächskreis Hoechster Nachbarn" had a particularly high *Öffentlichkeitsbezug*. They were held »in public«; the interested public was invited to act as an audience of the company-community dialogue. The participatory technology assessment project of the Wissenschaftszentrum Berlin is an example of post-corporatist negotiations with

a *relatively* strong *Öffentlichkeitsbezug*. While the interested public was excluded from the actual negotiation process, the process and the results of the project have been comprehensively documented and presented to the public. The Unilever dialogue, on the other hand, had a relatively weak *Öffentlichkeitsbezug*. Also this project excluded the interested public from the actual negotiation process. It differs from the WZB project by a higher degree of exclusivity and confidentiality; it has been held »in private«. Still, in this case like in the other two cases the engaging of the chemical industry in negotiations outside the official political arena was connected with an interest in publicity. Instigation of and participation in such negotiation has been communicated as an expression of the industry's willingness to co-operate and build a consensus with regard to technology issues. It has not merely served to demobilize technology protest by argumentative exchange; like public self-presentation it has served to build trust and credibility in the public at large.

The development of the rDNA debate into a public debate meant for the chemical industry to be faced with growing *public exposure*. The case study has shown that it was this public exposure which stimulated the use of public communication and publicity as political instruments at both the associational and firm level. »Green« and protest discourse have defined the chemical industry normatively as a social actor who trades public safety, a clean environment, and morals in return for private profits. The established political and legal institutions have reacted sensitively to this discourse. They have acted on the basis of more than a decade of new social movement politics warning against the blind dynamics and incalculable risks of economic and technological rationalization. Local and national protest actors and the diffusion of the concerns of these actors into the political and judicial institutions created a *heightened need for justification, legitimation, and consensus-building* for the chemical industry. What made the VCI and the big companies part of a publicly played game, a game they did not want to enter, is the dissolution of the society-wide agreement on the desirability of economic and technological rationalization.

In the 1950s and 1960s this consent was still given. In this period of time, the central societal concerns were overall economic growth, advances in collective and individual distributional positions, and legal protection of social status. The dominant collective actors were political parties and specialized, comprehensive, and highly institutionalized interest organizations (Offe 1985: 824). For the chemical industry this meant that its political

environment was restricted to the institutional political arena and that political challenges were minor and could be easily met by relying on the sector's strong strategic position in the system of intermediation. The genetic engineering controversy illustrates a period of time in which the political environment of industry »expands« by the addition of a new collective actor to the political stage, the new social movements, seeking to politicize the decisive institutions of the scientific-technical world by relying on a policy of public mobilization, and by a new central societal concern, technology induced risk, developing with the new collective actor's »institutionalization«. It is the politics of public mobilization of the new political actor and the resonance of the actor's technology-critical view in society at large which have necessitated the active creation of public support for the industrial use of genetic engineering.

The way in which the chemical sector in the course of the genetic engineering controversy has attempted to win the public over has been described in terms of a *learning process*. This learning process consists of the experience that the problem of public acceptance is less one of knowledge and understanding to be remedied by education, but rather one of changed societal expectations as regards industry as a technology utilizer. The indicator of this experience is the fact that *informatory education*, meaning the recourse to »objective« facts, especially scientific explanations and evidence, and appeals to authority and expertise has lost its original dominance as a public communication strategy, while *confidence-building*, meaning the recourse to normative commitments in the framework of the new social movement-generated and promoted idea of a socially and environmentally compatible use of modern technology, has gained this dominance. Since the mid 1990s, the chemical industry has made an increased effort to convey the message that it voluntarily restricts possible applications of genetic engineering to those that safeguard the values of public health, safety, and a clean environment.

The change in the *content* of industrial public communication, the case study has shown, has gone along with a change in the *form* of public communication. In the course of controversy the emphasis has shifted from communication organized as a one-way (expert-layman) process (directed at and presented as bringing public perception into conformity with scientific rationality) to communication organized as a two-way communication process and presented as a *dialogue between equal partners*. The chemical industry has increasingly made the public

an active participant in industry and corporate dialogue instead of reducing it to a non-acting recipient of information. The openness to active discussion has served as an instrument for demonstrating industry's responsiveness to ecological and safety concerns and its willingness to contribute to finding a societal agreement on ecological and safety issues. In »post-corporatist negotiations«, this demonstration has served above all to mobilize tolerance on the side of the main antagonist, local and national protest actors, towards the technology's industrial use.

What the chemical industry in the course of the rDNA debate has experienced can be summarized as follows: Technology acceptance is not simply determined by »objective facts« but has a strong *cultural and social dimension.* It is strongly influenced by the idea of what constitutes a *good life* and the idea of *purity* as compared with the idea of *justice* (Eder 1988, 1996b: 208) in this definition plays a more important role than in the past. Industry representatives refer to this experience, for instance, in comments on the fact that the widespread use of genetic engineering in detergent production is hardly noticed, while the introduction of genetic engineering in agriculture and food processing is hotly disputed. While, on the one hand, this fact is taken as evidence of the inconsistency of public concern and technology protest, the major reason for this inconsistency is assumed to lie in the fact that in the first case the genetic engineering product remains external to the human body, while in the second case it is a matter of a "orale Einnahme" (Hilger 1996 in interview[4]). The assumption is that drinking and eating is a field of life in which the sensitivity regarding technology risk is especially pronounced as in this field the idea of a »positive naturalness« connected to the value of »health« generally plays a central role and has gained in importance with the increasing industrialization and technicalization of food production.

Public commitment to the idea of a socially and environmentally compatible use of modern

[4] Stefan Hilger is head of the VCI public relations department which forms part of the association's information and communications department. In the opinion of Hilger the food companies Unilever and Nestlé Deutschland were right to publicly withdraw from the use of genetically engineered soya which the United States since recently seeks to sell on the European market. The genetic modification serves to make the soybeans resistant to the herbicide "Roundup" of the American chemical enterprise Monsanto. According to Hilger, the use of genetic engineering in food production at present meets with such strong resistance that the companies would have run the risk of a general decrease in the sale of their products if they had decided to use genetically engineered soya (Katzek 1997: 8; Der Spiegel 9/1997, p.18; Wiesbadener Kurier, 26./.27.10.1996).

technology - one of the ideas in which the desire for purity in a polluted world finds expression - is the way in which the chemical industry has translated the experience of the cultural and social dimension of genetic engineering into political action. It has resorted to this idea as a new carrier of legitimacy not only by communicating the technology's industrial use as being normatively bounded by the values underlying the idea. It has also resorted to it by communicating the technology's use as a *purposeful contribution* to the protection of public health, safety, and the environment. The societal diffusion and stabilization of the idea of a socially and environmentally compatible technology development has plunged the chemical industry into a »legitimation crisis« and the problems it has faced in establishing genetic engineering as a new core technology are part of this crisis; at the same time the idea's »institutionalization« has provided the possibility of a way out of the crisis, namely by means of commitment to the idea.

In communicating this commitment the chemical industry has demonstrated a high sensitivity as regards developments of the general public and political climate. As the case study has shown, it took the occasion of a situation in which a range of factors coalesced to provide support for genetic engineering while eroding the position of the technology opponents to engage in mass media based *identity-building communication.* That means, instead of employing commitment to the »post-materialist« perspective as an instrument of moral justification, the sector used it to mobilize support for the technology at issue in the form of a *moral appeal to the nation* and *moral stigmatization* of those seeking to impede the technology's use. With the offensive thrust and drama-like design of the nation-wide four-month issue advertising campaign, the industrial sector reacted to a favorably changed political environment and at the same time adapted to the logic of mass media communication. The receptivity of the dispersed audience which mass media communication seeks to reach cannot simply be taken for granted. Rather, interest in the information to be circulated has to be produced - especially under conditions of competition. *Dramatic representations* are highly likely to act as an incentive to interest.

The chemical industry's appeal to the sense of responsibility of the German citizens was conceived as an appeal to protect and promote public safety, health, and a clean environment *and* individual and collective welfare. By engaging in a moral crusade for the national economy the chemical industry again reacted sensitively to the general societal

context in communicating genetic engineering to the public. In the situation of economic recession, that is, in a situation of increased public concerns about material security and a general upgrading of technological innovation and preparedness to take risk, the economic actor used both the value complex "environment and health" (Dyllick 1989: XV) - the basis on which it has found its legitimacy as a technology utilizer attacked - *and* the value complex "material wealth" (Ibid.) - the basis on which this legitimacy has traditionally rested - as instruments of mobilizing public support. The chemical industry took the difficult national economic situation as an opportunity to, so to speak, re-mobilize the traditional basis of legitimation.

Resorting to the Ideal of Public Dialogue

In the genetic engineering controversy, I have explained, »public dialogue« constitutes an integral part of the chemical industry's political action repertoire and public responsibility discourse.

Dialogue has been *practiced* - in the form of noncommittal communication, for example in the context of public events, and in the form of more structured and result-oriented negotiation-based communication. In both cases, I have argued, dialogue presents a confidence-building strategy as regards opinion makers and the interested/concerned public, in the second case it presents moreover the attempt to promote the »antagonist's« tolerance towards the chemical industry as a technology utilizer.

It is important to see that the use of dialogue for building trust and credibility has not been restricted to its practice. Instead, public commitment to the mere *idea* of dialogue has served as a confidence-building instrument. »Dialogue« as theory and practice, as the VCI's public relations officer Hilger, puts it, is "politically correct" (Hilger 1996 in interview) and thus in both respects a valuable legitimacy resource.

Indeed, in Germany as well as in other Western European countries »dialogue« today presents a prominent concept in politics and the public. This prominence is closely related to the emergence of the new social movements in the course of the last two and a half decades. These movements sustain a cultural orientation which is opposed to the idea of formal

rationality; they are oriented towards "discursivity" (Eder 1996b: 200). The »institutionalization« of the new social movements has not only forced economic organizations to adapt by opening up for consensus oriented argumentative exchange. It has also induced the traditional political institutions to resort more intensely to consensus-building procedures in the context of organized social communication. Especially in the fields of technology and environmental policy in which factual as well as normative premises are highly controversial, deliberative-participatory procedures have gained in importance (Majone 1993). In contrast to corporatist negotiations these processes of organized deliberation and systematic reflection on technology and environmental issues - referred to as *dialogue* or *discourse* - for the most part are external to the actual decision-making process, oriented towards transparency and the inclusion of interested and affected social groups. They are not aimed at conveying legitimacy by a high degree of efficiency in problem-solving or ascertainment of the »right answer« to the problem but by providing a forum in which the problem can be tackled in a process of open discussion in which all points of view are heard.

As Eder (1985) has argued, the central political institutions of the modern constitutional state - the party system, separation of powers (legislative, executive, judicial) and negotiation-based systems - have a genuinely discursive character; it is their "letzter Legitimationsgrund" (Eder 1995c: 3). The stabilization of the "new political paradigm" (Offe 1985: 825ff.) has brought about a situation in which the political institutions have a heightened need to demonstrate the orientation by this central regulative idea of »discursivity«[5].

Not only the new social movements and the institutional political actors but also the social sciences have significantly contributed to the »positive career« of the concepts of dialogue and discourse. Some of the numerous studies on the mushrooming of dialogical-participative processes in the institutional and noninstitutional political arena present forceful arguments for a discursive politics[6].

The chemical industry's resort to dialogue-rhetorics in the rDNA debate is to be seen against

[5] For this argument, see Keller & Hajer (1996) and Barthe & Dreyer (1995).

[6] See, among many others, Habermas (1994) and Giddens (1997) for an argument for a deliberative/dialogical democracy and Renn (1994) for an argument for the use of discursive procedures in the field of environmental and technology policy.

this background of the societal career of the dialogue concept and its positive connotations as, so to speak, the translation of the philosophical discourse concept into everyday speech. These positive connotations are mutual recognition, social inclusiveness and consensus-orientation. The dialogue concept owes its special »aura« to these connotations. It is them and the present popularity of the dialogue concept upon which the chemical industry banks when it proclaims openness to and willingness to engage in public dialogue.

»Dialogue on the basis of a transparent industrial policy« has developed into the chemical industry's dominant public communication approach not only as regards the genetic engineering issue but as regards technology and environmental issues in general. Actually, the industrial sector commits itself to this approach at a worldwide level by the "Responsible Care" program. Responsible Care, which commenced in Canada in 1984, is an "initiative supported by the chemical industry worldwide to improve its performance in the areas of health, safety and environmental protection" (VCI 1992: 4). The major guiding principle of this program is that the industrial sector practices health, safety, and environmental protection on its own initiative and responsibility and takes all necessary steps without being prompted by legal and governmental requirements (Ibid.: 6). The continual dialogue with the staff members, the customers, and the public presents an especially important element of the industry's flagship in its attempt to build public trust and prevent restrictive state regulation[7]. In a VCI presentation of the German contribution to the Responsible Care program, it states:

> "Verantwortliches Handeln" im Bereich Dialog heißt, zwischen den Unternehmen der chemischen Industrie und ihren Kunden, ihren Abnehmern sowie den Verbrauchern und dem gesellschaftlichen Umfeld ein Klima des Vertrauens und der Akzeptanz zu schaffen. Dazu gehört es, aufmerksam zuzuhören und aus Gesprächen zu lernen. Offenzusein für die Argumente anderer, auch die von Kritikern, und glaubwürdig eigene Argumente in die Diskussion einzubringen - das ist Dialog im Sinne der Initiative "Verantwortliches Handeln". (VCI, Leitfaden "Verantwortliches Handeln": 12)

The dialogue approach is also pursued to a certain extent by other industrial sectors. As

[7] The Responsible Care program includes corporate commitment to a set of guiding principles for industry and codes of practice and to various other initiatives in the field of environmental, risk, and stakeholder management. At present the individual countries' programs are at different stages of development and have different emphases. The responsibility for the detailed implementation of Responsible Care in the individual countries is taken by the national chemical industry associations (CEFIC 1996).

Dyllick has argued, public exposure of business presents a general challenge to the modern corporation and in order to meet this challenge the corporation has to develop a "gesellschaftliche Selbstbehauptungsfähigkeit" (Dyllick 1989: 477) including the capability for societal communication or dialogue; the capability for societal action or co-operation; and societal trustworthiness (Ibid.).

The need for a "capability for societal self-assertion" in other industrial sectors, however, is not nearly as great as in the chemical industry. This is due to the fact that the chemical industry is the priority target of the »quality of life« discourse. Since the 1970s, public awareness and concern about environmental and health risks associated with the sector's operations have increased significantly, reinforced by a succession of high-profile incidents worldwide and by continual citizen protest and campaigning by the new social movements. Actually, environmental, safety and health issues seem to be the primary image on which at least the big chemical enterprises are judged. As a consequence, these economic organizations are faced with a special pressure of justification and legitimation.

It is certainly an especially interesting question whether industry's present experimentation with »post-corporatist« negotiations will continue in the future and whether it will have positive effects on its relationship to its challengers and its public image. Due to the economic constraints that corporations face, *corporate dialogue* (Niedergesäß & Rettberg 1995), as such negotiations are typically referred to, is a difficult enterprise. The economic constraints make the corporations pursue the objective of the challengers' tolerance of policies already decided on rather than compromise-oriented consensus-building on these policies (as the dialogue-rhetorics suggest). That means, however, that corporate dialogue always runs the risk of being unmasked as sham-dialogue and sham-co-operation (Thielemann 1994b) and turn out to be counterproductive.

Corporate dialogue takes place in a *Spannungsfeld* safeguarding corporate autonomy and safeguarding corporate legitimacy: A fundamental *Ergebnisoffenheit* would involve too high a loss of autonomy, an entirely lacking *Ergebnisoffenheit*, however, would entail too high a loss of legitimacy. The legitimacy imperative means that self-restriction in the pursuit of the actual organizational interests at least to a certain extent is necessary. In corporate dialogue, therefore, there is a relatively high probability that corporations compromise at least in minor affairs, as the Hoechst company has done in the context of negotiations in the

"Gesprächskreis Hoechster Nachbarn" with respect to general corporate information and safety policy. These concessions surely have had a positive effect on its relationship with the local citizen groups and its public image.

The »corporation in dialogue« not only has to make sure not to jeopardize its social credibility. As the recently started co-operative project of the Hoechst company and the Öko-Institut Darmstadt has indicated, it also has to be careful about possible negative effects on the solidarity it enjoys in the industrial sector to which it belongs; as the example of business collective political activity has demonstrated, despite all economic competition this solidarity is of vital importance to the individual company. The "heißeste Eisen des neuen Dialogs" (Lingenthal 1996: 8) between the multinational and the ecologically oriented research institute is not a process of negotiation but a contracted co-operation in the development of an ecological strategy for the company. Faithful to the maxim "Wertschöpfung durch Wertschätzung" (quoted in Ibid.) of its rhetorically inspired chief executive, the chemical company has asked the industry-critical research institute to examine two of the company's product lines for their environmental compatibility: food additives and geo-textiles (Öko-Mitteilungen 3/96, p.17). This project has not only met with great astonishment in the chemical industry but also with sharp criticism (Lingenthal 1996: 8; Kraft 1996 in interview[8]). Similarly, the company that engages in post-corporatist negotiations can expect to be treated as a traitor in one's own ranks if it compromises on major matters or matters that are of importance to the industrial sector as a whole.

And, last but not least, the continuance and success of corporate dialogue is dependent on its targets' willingness to participate. In the case of protest groups and organizations, this willingness is by no means a matter of fact. They are »identity-organizations« the political power of which is largely based on a strategy of disassociation from industry and other exponents of an instrumental rationality; their image is based on attributions of »independence« (not to co-opt, not shrinking from confrontation ...). Each attempt to put their credibility in negotiation-based processes in jeopardy affects the material basis of their existence. Therefore, in each individual case they need to carefully consider the benefits and risks of participation, and the result of these considerations will reflect positive and negative experiences from prior negotiations.

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[8] Michael Kraft is official responsible for public & governmental affairs in the communications department of the Hoechst company.

I shall leave a careful consideration of these aspects to future research and conclude this study with a forward glance as regards the specific case of business political activity that the study has analyzed. What will the political activity of the chemical industry in the rDNA debate in the foreseeable future look like?

The political and public climate in the course of the 1990s has clearly changed to the advantage of the economic actor. Not only the government coalition but also the Social Democrats today consider genetic engineering a core technology; parts of the Green Party have changed from a fundamentalist stance to a more pragmatic policy; technology protest concentrates on the technology's use in agriculture and the food industry which thus far at least affects the sector only marginally. Generally, the prominence of economic issues has contributed to the public acceptance of genetic engineering. Today it is a widespread view that the full use of the economic potential of genetic engineering is indispensable to meet the challenge that processes of economic globalization present to the competitiveness of German industry. As the official responsible for pharmaceuticals in the communications department of the Bayer company, Sehnert, has put it, the rise of economy related concerns has rendered genetic engineering "gesellschaftsfähig" (Sehnert 1997 in interview).

Still, corporatist negotiation in the institutional political arena and self-presentation activities in the noninstitutional political arena will remain important in the future; this is at least the assessment of the industry representatives who I have interviewed in the winter of 1996/1997 (no really clear statements were made on the future importance of post-corporatist negotiations). First, deregulation still is a political objective. As I have already explained, established European regulation does not allow further changes in national legislation; therefore, a great deal of industrial political activity in the official arena of politics will take place at the European level.

Moreover, the chemical industry to some extent is also affected by public concerns about and protest against non-industrial technology applications or technology activities that are carried out in other industrial sectors. It was important to see, the VCI public relations officer, Hilger, has stated in the interview, that for the population it made no difference whether »novel food« was an issue related to the chemical industry or the food industry, or whether a genetic engineering project was carried out in Germany or in the United States; the sector, anyway, would be "condemned to make a statement" (Hilger 1996 in interview). And last but not least, especially the big enterprises - which have attributed genetic engineering

a key role in the growth field of the life-sciences - have come round to accepting that adherence to the policy of transparency and openness constitutes a public expectation and is thus a necessity in stabilizing the relaxed political environment.

ANNEX

Appendix I: On the Methodology

The data basis of the case study - the analysis of the political activity of the chemical industry in the German genetic engineering controversy - comprises, first, personal interviews, and second, actor documents and mass media texts.

The personal interviews, which amount to 27, have been conducted with representatives of the chemical industry, the genetic engineering research community, the politico-administrative system, and the new social movement sector.

The interviews with scientific experts first of all have served to provide information about the relationship between the scientific community and the chemical industry in the rDNA debate and general information about the nature and use of modern biotechnologies. The interviews with political/administrative and protest actors have served to provide information relevant to the analysis of the political environment in which the chemical industry in its efforts to commercialize genetic engineering in the time period of the mid 1970s to the mid 1990s has found itself embedded. The interviews with the industrial actors have served to provide information on whether, and, if yes, how the political activity of the chemical industry has been organized in response to this context.

The interviews have been conducted in two waves. The bulk of interviews was conducted in the first wave (November 1991 - February 1992). 21 representatives of the »key participants« of the technical controversy were questioned on the subject. In the second wave (November 1996 - February 1997) six further interviews were conducted exclusively with company and associational representatives in order to obtain information about the most recent developments concerning the political involvement of the industrial sector in the rDNA debate.

With the exception of three interviews, the interviews have been recorded. About half of them have been transcribed to facilitate and optimize their interpretation.

The biggest part of the interviews go to the political actor at issue, organizations of the

chemical industry (11 interviews), and new social movement groups and organizations engaged in protest activities (9 interviews). The focus on protest actors as another participant in the technical controversy is a result of the assumption that this collective actor presents the chemical industry's main antagonist in this societal conflict and that thus the logic and dynamics of industrial political activity have significantly been shaped by this actor's activities.

Most of the protest groups and organizations interviewed have identified specific issues of rDNA technology as important for their overall field of interest, and therefore, have taken up these issues in their programs. The persons interviewed here are those who have been entrusted with genetic engineering politics. In the case of the (small) organizations which have been expressly founded on the rDNA issue, there are no obvious responsibility criteria according to which the organizations might have based the choice of the interviewees. In the case of the industrial actors, the persons interviewed either work in public relations departments or public and governmental affairs departments in which they have been entrusted with genetic engineering politics or are active in research and have been »volunteered« to communicate genetic engineering to selected targets.

The interviews were conducted as open interviews on the basis of a questionnaire (Leitfaden). The questionnaire which was used to interview the industrial actors has broadly the same structure as the questionnaire for the protest actors. Some questions obviously had to be adapted to the specific organizational design of the groups/organizations. The questionnaire refers to the following aspects:

* general information on the group/organization
* organizational resources provided for genetic engineering politics
* concrete activities (activities in the official political arena - at the national and European level - and in the public arena)
* goal determination of these activities (»ideologies«, pragmatic purposes, political situation definitions)
* targets of the activities
* evaluation of the efficiency of the activities (differences in efficiency, problems and prerequisites)

* assessment of the future relevance of the activities

The industrial actors in addition were asked to report on the use of genetic engineering in the sector or respective company and the way in which corporate and associational politics are connected with each other.

In the context of the interviews actor documents were gathered (text and pictorial material) including publications, position papers and memoranda, advertisements, brochures, leaflets, and posters.

Further data material that has been analyzed are mass media texts dealing with the topic of modern biotechnologies. Among the opinion making newspapers I have drawn upon the three big German newspapers (*Frankfurter Allgemeine Zeitung*, *Süddeutsche Zeitung*, *Die Welt*) and the *Frankfurter Rundschau*, *die tageszeitung*, and the *Handelsblatt*. Moreover, I have employed the weekly magazines *Die Zeit* and *Der Spiegel*. Reporting on genetic engineering in these newspapers and magazines has not been analyzed in all its entirety. Instead, the data material is restricted to samples of articles that appeared in the course of the controversy. The bulk of the articles is from the time period of the late 1980s - when the rDNA debate reached its peak - and the first half of the 1990s.

The articles were analyzed in two respects. First, they were analyzed with respect to the representation of the chemical industry and its issue positions in the mass media which has been taken as one indicator of the sector's efforts to employ the mass media for its political objectives. Second, the analysis served the purpose of obtaining information on the relevance of mass media reporting as a political challenge to the chemical industry as a technology utilizer; this information concerns the issue's »career« as a mass media topic and changes in the specific (positive or negative) framing of the issue.

Verantwortung heißt für uns
in der Chemie:

Verantwortung auch für
Zukunftstechnologien.

Chemie im Dialog

Verantwortung heißt für uns
in der Chemie:

Verantwortung auch für die
Nutzung der Gentechnik.
Beispiel neue Medikamente.

Chemie im Dialog

Verantwortung heißt für uns
in der Chemie:

Verantwortung auch
für die umweltgerechte
Nutzung des Rohstoffs Chlor.
Beispiel PVC.

Chemie im Dialog

Source: IGL (1994: Appendix)

Wir wollen die großen Chancen der Gentechnik verantwortungsbewußt nutzen. Die Chemie handelt.

Die Gentechnik ist für neue Behandlungsformen von Aids, Krebs und anderen bisher nicht heilbaren Krankheiten unverzichtbar. Auch bei dieser neuen Technik legt die chemische Industrie hohe Sicherheitsmaßstäbe an.

Der Gentechnik kommt für die Weiterentwicklung der modernen Industriegesellschaft eine Schlüsselrolle zu.

Besonders in der Medizin – aber auch im Kampf gegen die globalen Ernährungsprobleme oder in der Umwelttechnik – eröffnet die Gentechnik völlig neue Möglichkeiten. Die Behandlung bisher unheilbarer Krankheiten rückt in greifbare Nähe. Kulturpflanzen können zur Verbesserung der Welternährungslage ertragreicher und widerstandsfähiger gemacht werden. Gentechnisch veränderte Mikroorganismen lassen sich für die Bodensanierung einsetzen.

Auch die deutsche chemische Industrie will deshalb die Gentechnik nutzen. Jedoch nicht um jeden Preis. Selbstverständlich muß dabei der Schutz von Mensch und Umwelt gewährleistet sein.

Die Information der Öffentlichkeit ist für uns wichtig. Wir wollen zeigen, daß wir alles tun, um bei geplanten gentechnischen Verfahren Risiken auszuschließen. Und der Respekt vor Leben und Würde des Menschen setzt unserer Arbeit mit der Gentechnik Grenzen: Eingriffe in die menschliche Keimbahn lehnt die chemische Industrie ab!

Chemie im Dialog. Ihre Meinung ist uns wichtig:

Machten Sie auch zum Thema „Chemie, Umwelt, Zukunft" äußern? Dann schreiben Sie uns, oder rufen Sie uns an. Zum Nulltarif (01 30) 66 99.

Name _____

Straße _____

PLZ ____ Ort _____

Verband der Chemischen Industrie e. V., Karlstraße 21, 6000 Frankfurt/Main 1.

Die Deutsche Chemische Industrie.

Source: IGL (1991a: 7)

Source: IGL (1993: 6)

Umweltschutz ist praktiziertes Wissen. Deshalb laden wir Menschen mit Verantwortung ein, sich bei uns zu informieren.

Ich möchte Ihnen zeigen, wie wir Rückstände von Pflanzenschutzmitteln aufspüren und damit helfen, die Umwelt zu schützen. Deshalb lade ich Sie ein.

Was passiert mit Pflanzenschutzmitteln im Boden? Gelangen sie ins Grundwasser? Bleiben Rückstände in Nahrungsmitteln?

Solche Fragen frühzeitig und klar zu beantworten, ist Aufgabe von mir und meinen Kollegen.

Nur so können wir verantwortungsbewußt Pflanzenschutz betreiben und mitwirken, die Ernährung der Menschen sicherzustellen. Und dies nicht auf Kosten der Gesundheit der Verbraucher.

In der Rückstandsanalytik entwickeln wir eigene, hochempfindliche Meßverfahren. So gelingt es uns immer besser, kleinste Mengen von Pflanzenschutzmitteln in Boden, Wasser, Luft, Pflanze, Tier und Nahrungsmitteln aufzuspüren. Eine Arbeit, die viel Fingerspitzengefühl voraussetzt.

Wie schnell Pflanzenschutzmittel in der Umwelt abgebaut werden und welche Rückstände entstehen, das hängt von vielen Faktoren ab, besonders auch vom Klima. Dazu untersuchen wir diese Stoffe intensiv im Labor, in Freilandversuchen und in unserer neuen BASF-Versuchsanlage Ökobiologie.

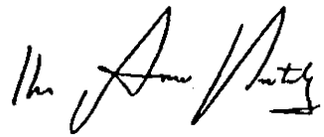
Nur wenn Pflanzenschutzmittel alle diese "Härtetests" bestanden haben, werden sie heute von der Biologischen Bundesanstalt zur Anwendung zugelassen.

Unsere analytische Arbeit ist daher mit einer hohen Verantwortung verbunden. Wenn wir nach vier bis fünf Jahren intensiver Arbeit beurteilen können, ob ein neues Produkt sicher ist oder eben nicht, dann ist das für uns ein wichtiger Erfolg.

Wie diese Arbeit genau aussieht, möchte ich Ihnen gerne einmal zeigen.

Rufen Sie unter ***0130/85 30 35*** an und vereinbaren Sie mit Herrn Lerch einen Besuchstermin. Wenn Sie nicht kommen können, dann schreiben Sie mir.*

Ich freue mich auf Sie und Ihre Fragen.



(Dr. Arno Krotzky ist Biologe und bei der BASF verantwortlich für die Rückstandsanalytik im Agrarbereich Pflanzenschutz)

* BASF Aktiengesellschaft, Abteilung ZOA/MP - 6700 Ludwigshafen

Menschen mit Verantwortung.

BASF

Initiative Energievernunft

Die Energiewirtschaft muß, trotz kontroverser Argumente, immer wieder einen Konsens finden, der dem Industriestandort Deutschland, der Lebensqualität seiner Bürger und dem Schutz unserer Umwelt dient. Dieser Herausforderung stellen wir uns ebenso wie dem offenen Gespräch darüber.
Fordern Sie mit dem Coupon weitere Informationen an, und werden Sie mit uns aktiv für die Ziele der Initiative Energievernunft.

Ihre Stromversorger

Ela

Ja, ich will zur Energievernunft aktiv werden. Schicken Sie mir kostenlos die aktuelle Broschüre „Vom Wirkungsgrad zur Energievernunft" und meinen Mitmachsticker.

Einfach einsenden an:
IZE-Informationsservice Energievernunft, Abt. 508, 35573 Wetzlar. Oder mit Stichwort „Energievernunft" faxen an [illegible]. Und nicht vergessen Sie Ihren Absender nicht.

Source: Der Spiegel (26/1996)

Dialog-Anzeigen zum bundesweiten Tag der offenen Tür

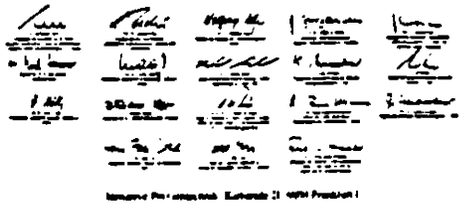
Source: IGL (1994: Appendix)

IGI-Mitgliederversammlung 1994

Dialog-Anzeigen Meinungs-Offensive Gentechnik

„Wer heute noch die Chancen der Gentechnik verhindern will, handelt unverantwortlich."

Ohne Gentechnik verspielen wir in Deutschland ein Stück Zukunft.



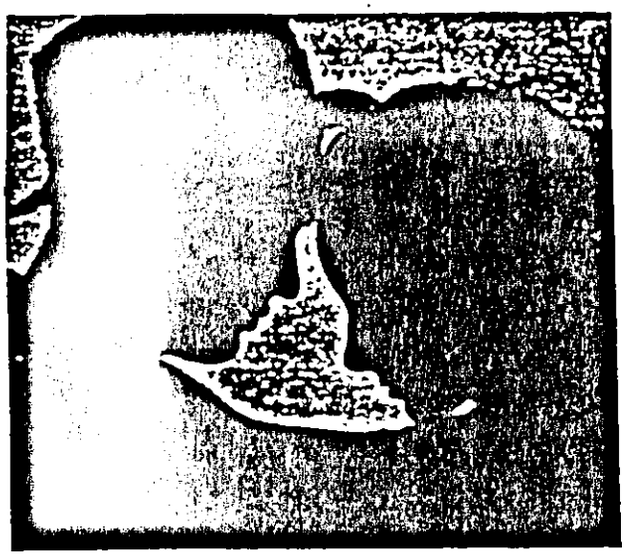
„Die Bürokratie droht die Gentechnik zu Tode zu verwalten. Die Folgen für Deutschland wären katastrophal."

„Gerade die Umweltbewußten müssen sich vehement für die Gentechnik einsetzen."

Source: IGL (1994: Appendix)

Morgen ohne Krebs.

GEN SUISSE.



Ja ohne Aids.

GEN SUISSE.

JA.

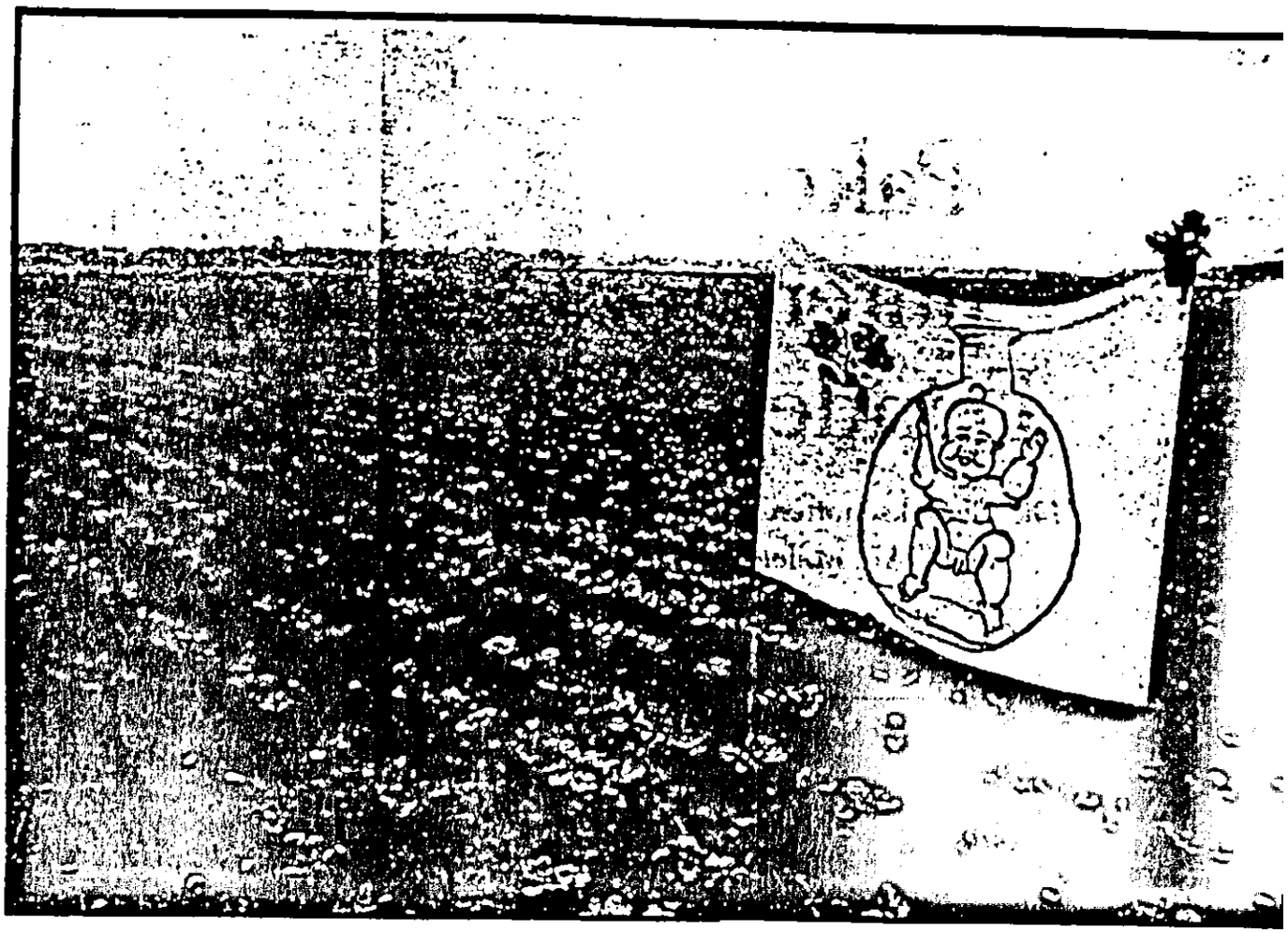
Mais ohne Mitesser.

GEN SUISSE.

Source: Müller (1992: 16-18)

Appendix IV: Symbolic Protest by New Social Movement Actors

Source: Der Spiegel (15/1997, p.211)



Source: Die Zeit (8.12.1995, p.2

Source: Der Spiegel (46/1996, p.96)

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