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How to keep out what we don´t want

On the Assessment of "Sozialverträglichkeit"[i] under the Austrian Genetic Engineering Act

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Introduction

Between Risk and Values

Engineering projects, processes and products have long been subject to national regulations intended to minimise the risks that they present. However, such regulations are faced with the fundamental problem that their foundations change with the increasing speed of development, innovation, etc. Often, the current "state of the art" is the binding point of reference, thus indicating scientific evidence. The sciences can offer models of prognostic value, but this is always limited, and therefore decisions have to be made without being able to forecast the consequences of each possible option with reasonable safety. This problem has been the sub-

ject of numerous papers on the issue of “risk” (for many: Perrow, 1989; Halfmann and Japp, 1990; Bechmann, 1993, 1994) and has, among other things, led to the evolution of a “risk sociology” (Beck, 1986; Bonß, 1990; Luhmann, 1991). In this problem and in the lack of an intersubjectively valid benefit function for the rational choice between political alternatives, a certain weakness of the risk/benefit analyses that are frequently part of such regulations can also be found.

For example, scientific risk analyses and economic benefit arguments are necessarily joined by other decision-making factors of a social or political nature.[ii] Thus, the issue on hand becomes more complex: it no longer concerns only the regulation of purely technical processes, the balance between different world views and values enters the scene of national regulation. The possible integration of such diverse factors deserves interest not only from the sociological point of view. After all, we are dealing with no less than the issue of democratic participation, for which new forms must be found.

Genetic engineering is one area in which such "non-technical" decision-making inputs on initially technical issues are found more and more often. Although the technical nature, the scientific basis and the reduction of risk to health and environment are usually emphasised as the task of any regulation, other goals based on social and ethical principles also appear within the scope of genetic engineering laws.[iii] By international comparison, a special position is occupied by the Austrian regulations: products containing or consisting of genetically engineered organisms[iv] must not create any "soziale Unverträglichkeit" ("social unsustainability"), no “unbalanced burden on society or on social groups" that is unacceptable "for economic, social or moral reasons." (Austrian National Assembly, 1994. The aim of this paper is to investigate the implications of this remarkable provision.

In the following, the fundamental issues of genetic engineering regulations that have come up on the international level will be dealt with first. After a brief history of the term "Sozialverträglichkeit", the development of the above provisions in the Austrian Genetic Engineering Act will be outlined and the legal framework illustrated. The goal of this provision is investigated critically, and the relation between the term "Sozialverträglichkeit" and the demand for participation is scrutinised. Despite its ambiguity and the fundamental implementation barriers, the term can be interpreted as a constructive answer to the problems of a "risk society". For such a turn, the term participation is granted a central position, although this term is also ambiguous and must therefore be differentiated. In this context, we can give some concrete examples from the European scene that could represent the various implementation approaches for the concept of "Sozialverträglichkeit" thus interpreted. Against the background of the specific situation in Austria, however, it is uncertain to what extent such models can be taken over without modification.

Problems of Genetic Engineering Regulation

Despite international treaties, EU directives and national laws, the regulation of genetic engineering has proved to be quite difficult in practice. There is still controversy over the extent to which genetic engineering may be understood and regulated as an entity, and what the new facts that require special regulations truly consist of.

The reasons for this are the same as those for passing relevant regulations or genetic engineering laws in various countries, including Austria: According to one interpretation, genetic engineering is the origin of major qualitative progress in many areas; therefore, the novelty

of what has become possible is emphasised. According to the other interpretation, the new methods are seen merely as an expansion of the existing repertoire, for which regulations based on the established criteria must be found. Where new economic, ethical and social problems are emphasised on the one hand, the other side counters that these are not new, can be solved with the existing market mechanisms, or have to be accepted in a pluralistic market economy. Where genetic engineering has the nature of a risky technology for some, others consider it to be one of the safest technologies that has never presented any threats despite intensive observation (overview in Brauer et al., 1995).

In most countries, including Austria (Austrian National Assembly 1992), the scientifically based genetic engineering laws are intended primarily to avert danger and to set a clear framework for applications. Attempts to minimise possible risks to human health and the natural environment and at the same time to exploit the economic potential are to the fore. However, especially where the release of genetically modified organisms is concerned, the differences with regard to what is meant by avoidable risk have become more concrete with increasing practice, rather than disappearing (Levidow, 1995).

Despite the differing interpretations of the protected good, the international treaties that most national legislation is based on assume that transgenic organisms do not differ fundamentally from traditional organisms (OECD, 1992). This view is supported by the argument that the fact of genetic modification alone does not provide any information about the likely consequences. Therefore, the general properties of all genetically modified organisms as compared with conventional ones cannot be indicated. In order to assess the consequences, the parent organism and the type of modification leading to certain traits must be regarded individually, so that the product properties are ultimately decisive, regardless of the method of production. This (mainstream) argument was coined mainly by the industry and researchers, raised to the political level by the US authorities, and has found increasing support also

in the administration and even to some extent in the NGOs (Bernhard Gill, Univ. of Munich, pers. comm.).

The consequences of a decision on the assessment basis for genetic engineering products are considerable: If genetic engineering products and conventional products are to be treated equally, then their marketing conditions must be the same. If they are to be regarded as incomparable due to their different origins, new general criteria for genetically engineering products must be set up. These should not be based on specific properties resulting from the type of product or the type of genetic modification, but should rather be derived from genetic modification alone. This is the only thing that these products have in common, otherwise they may differ quite considerably and also present quite different risks. Since the fact that a product is genetically modified does not contain much information for the risk assessment in itself, the protective goal of such a regulation remains unclear. There is a risk that it is merely discriminating, without averting any real dangers whatsoever.

In the EU, there are two directives that apply exclusively to transgenic organisms, for which the criterion of regulation is therefore the process of genetically engineered modification.[v] They regulate the handling of genetically modified organisms in "closed systems", i.e. in the lab and in production on the one hand, and the modalities of deliberate release and marketing on the other hand.[vi] This procedure is founded not on any additional risk deriving from the method of genetic engineering, but on the novelty of the method and potential of the modifications that have become possible. What is at stake is the handling of an increased uncertainty, making additional precautions advisable. Therefore, reference is made to the precautionary principle, according to which also possible and currently unknown hazards are to be minimised. The discrepancies between the foundations of EU and OECD regulations have led to discussions, particularly with the USA. There, only product properties that can be scientifically demonstrated should be valid as the basis of an assessment. Frequently,

reference is given to experiences with the release of transgenic organisms where no negative consequences have been demonstrated as yet. Basically, also this approach adresses uncertainty instead of risk, although from another angle (on the problem of process versus product oriented regulations, see Miller, 1995). Nevertheless, in practice there may arise different interpretations as to what must be assessed prior to a release.

But even within the EU there is a similar controversy, particularly with regard to the marketing of transgenic plants. The opinions range from the (Dutch) restriction of the protected good to the possibility that wild species are crowded out of natural ecosystems, to the (Scandinavian) demand that all impacts on agricultural practice be taken into account, in particular those that are of ecological relevance (Levidow et al., 1996; Torgersen, 1996). Such an extensive assessment is viewed sceptically by the EU Commission, because it seems to include aspects of an assessment according to socio-economic criteria, or of a need assessment. The latter has already been clearly rejected as the "fourth hurdle" to licensing. In the opinion of the Commission, socio-economic criteria cannot be assessed according to scientifically clear criteria and would thus provoke legal insecurity, which would lead to a drain of capital (EU Commission 1991: 11).

The fears that are associated with the introduction of genetic engineering in agriculture[vii] concern mainly such socio-economic developments, however, so that a reduction to purely technical and scientific risk arguments probably would not really clear up the widespread unease in the population (see below). The discussion on licensing of recombinant bovine growth hormone[viii] has already shown that in such situations risk arguments are instrumentalised and serve to prevent economic or social developments that are not desired by a specific group of people. For example, socio-economic criteria (surplus production and structural change through even more industrialised agriculture), which are inappropriate for an assessment within the scope of market introduction, were felt to be hidden behind the "per-

missible" veterinary arguments (risk of higher incidence of infected udders) (Tichy, 1994). Altogether, one could easily conclude that a retreat to the results of a risk assessment based on scientific and medical aspects as the only licensing criterion is not really adequate (Torgersen, 1996).

In addition to the prevention of unknown hazards, the sceptical attitude of the population is undoubtedly a driving force behind the regulations on risk assessment (Verrips, 1995), particularly in those EU countries in which genetic engineering is considered to be more hazardous according to surveys, and in which the people interviewed have a more technical knowledge (Marlier 1992, 1993). Until recently (s. below), there was virtually no public discussion on genetic engineering in Austria (compared with her neighbour Germany). Surveys carried out some years ago showed only minor risk awareness with a relatively low level of knowledge and high insecurity, although the acceptance of genetic engineering was already very low by European comparison (Seifert/Torgersen, 1996).[ix] This allows us to conclude on the one hand that many of the people interviewed were not able to assess the risk clearly as high or low. On the other hand, there were clearly reserves that were not so much manifest in an awareness of risk to life or health, but based more on social and ethical aspects or quite generally on a diffuse, emotional rejection. According to these older surveys, this already applied mainly to applications associated with agriculture, such as transgenic animals and foods. In the meantime, this scepticism has turned into open and vehement rejection. Particularly in this area, however, many products are about to be launched on the market, for which the producers are seeking a licence and acceptance, even demand from the population. Therefore, the basic novelty of the product is denied and arguments for its safety are presented. It is regarded necessary and sufficient for the limitation of an assumed risk potential, if the postulated risks cannot be proven (or at least shown to be plausible) in a scientific assessment.

Whether this will really lead to acceptance by the consumers depends largely on the credibility of those carrying out the necessary hazard definition and assessment, namely the experts in the industry, the authorities and research. With regard to new technologies in general, and genetic engineering in particular, however, new actors are entering the scene, who from the start are sceptical about the statements of researchers and the industry, but who are excluded from the traditional decision-making processes. Their arena is the "public", whose trust they enjoy to a particularly high degree. As the quoted surveys show, environmental and consumer protection organisations (as well as animal protection organisations in Austria) throughout Europe lie far ahead of the industry and even the governmental organisations as far as their credibility and the credibility of their information is concerned (Marlier 1993, 1994; Nielsen, 1996; Seifert/Torgersen, 1996). Ultimately, the problem of acceptance is based on a lack of credibility and trust in the individual persons, groups and organisations.[x]

If experts assess facts as unhazardous which - in the broadest sense - are their "daily bread", the public quickly suspects that they are acting in their own interests, since a conflict of interests would be inevitable, if they were to admit to considerable risks. On the other hand, altruistic motives may be assumed on the part of those who cannot expect any direct material benefit from their attitude, and who operate with public welfare arguments. These include both particularly trustworthy individuals and various non-governmental organisations,[xi] who pick up the arguments of new social movements. They have an advantage over the industry and research (and increasingly over official organisations worried about the economic location) of which we can say - not without reason - that they argue pro domo. The trust placed in the NGOs often makes them opinion leaders in a controversy, which can be demonstrated clearly by the development in Austria in recent years: Not until the subject was taken up by organisations such as Greenpeace and Global 2000, and they mobilised and channelled the protest potential in concrete situations (first release in spring, import of ge-

netically modified soy beans in autumn) did the sleeping scepticism turn into vehement rejection and open outrage, whereby a conflict did not really ensue, because the official policy had to follow the extremely popular arguments presented by the NGOs and also taken over by the boulevard press. So far, the industry and the administration have not been able to counter these.

In such debates, arguments with regard to the risks for health or nature are frequently countered with fears concerning socio-economic hazards, or the former are instrumentalised in order to support socio-economic arguments. In practice, both are very difficult to separate, and the absence of a risk for environment, body and life appears to be a necessary but inadequate condition for acceptance.

In Austria, this fact has been taken into account by the fact that, pursuant to § 63 of the Genetic Engineering Act passed in 1994, genetically engineered products must be assessed for the possible risk of "soziale Unverträglichkeit" ("social unsustainability") before they are licensed. It is open to speculation whether - even without precise survey data at the time of passing the law - the lawmakers reckoned with the low acceptance of genetically engineered products in Austria, which is obviously founded not only on risk aspects. This almost unique provision [xii] is to some extent contradictory to the internationally common genetic engineering regulations. The background and intention of this provision and the chances of its fulfilling its purpose remain unclear, and it is also doubtful to what extent the concept of "soziale Unverträglichkeit" or, to put it in positive terms, "Sozialverträglichkeit" can even serve as a regulation category. Does "Sozialverträglichkeit" take on a new meaning in the context of genetic engineering regulations? Can the need assessment for products (the "fourth hurdle", see above) thus be circumvented and socio-economic criteria be taken into account nonetheless? Is "Sozialverträglichkeit" a new category of assessment, and would it be possible to defuse such conflicts as have arisen in the past, for example with the licensing of bovine growth

hormone, in this manner? Or is the provision unenforceable, dead law and therefore merely a symbolic means of achieving acceptance?[xiii] What role does such a provision really play in an acute controversy about "genetic engineering" products?

When dealing with these issues, the roots of this provision must first be discussed. This includes the evolutionary context of the Austrian Genetic Engineering Act, its legal framework, and a brief history of the term "Sozialverträglichkeit".

"Sozialverträglichkeit" and Genetic Engineering - a faulty pair

Legal Framewor: On the Genesis of the Austrian Genetic Engineering Act

Genetic engineering is a topic that was dealt with relatively late in Austrian politics. This fact must be seen in connection with the Austrian technology policy, which did not set in until relatively late on the one hand, and merely copied the international developments for two decades on the other hand, i.e. it was behind and not particularly innovative. In the eighties, a few innovative impulses were shown, in particular the promotion of international contacts and co-operation between research and business (Gottweis/Latzer, 1991). The changed political demands of the eighties and nineties due to reassessment of ecological and social matters, and the resulting dynamics suggested an innovation of the technology policy, but like in other countries hardly produced any according decisions: "Social and ecological aspects are

found in the concepts, *but not in practice* " (ibid.: 610, emphasis by the authors). Further features of the Austrian technology policy were the fragmentation and uncertainty of competencies between various institutions, the intertwinement according to the premises of the social partnership and its institutions, and the strategic positioning of members of the strongest political parties in major bodies. So far, all this has "led more to conflicts, paralysis and prevention than to consensus and the development of a strategic multidimensional and democratic technology policy." (ibid.: 611). The strategy of making the country attractive for individual foreign biotechnology corporations, on the other hand, was successful: For example, the Vienna Institute of Molecular Pathology founded in 1986 as a joint venture between Genentech Inc. and Boehringer Ingelheim[xiv] was co-financed with AS 145 million from the federal government and the city of Vienna. (ibid.: 616) Until the Genetic Engineering Act was passed in 1994, there was no orientation along ecological, social or political guidelines, however.

The more or less heated public and political debate on genetic engineering also reached Austria in the eighties, but did not have a broad impact. The conflict ran along the same lines as the preceding ecological and technological "risk discourse" (Lau, 1989). Representatives of the industry and research were in favour of more liberal regulations and countered the reserves of their critics with the opportunities offered by genetic engineering, and the economic risks for Austria as a business location resulting from restrictive regulations (as an example for many: Kudlicza, 1992). Criticism came from the new social movements (Gottweis, 1991a), loose groups (e.g. Gen-ethic Network, Feminist Circle) and especially from individuals (journalists, VIPs), carried by the Green Party on the political side. The arguments of the two conflict groups were oriented towards the German discussion (see Theissen 1991, Landström 1993). The fact that the controversy did not achieve anything near to the same public attention may be surprising in view of the potential to mobilise the Austrian popula-

tion (since the referendum on nuclear power in 1978), but could be due to the fact that there were no release trials and also went hand in hand with the disinterest of the boulevard press.

In its coalition agreement of 1990, the federal government laid down that a uniform genetic engineering act was to be prepared (Bundespressedienst, 1990: 12, 62, 69), since legal insecurity had been identified in this respect. However, until then genetic engineering activities had certainly not taken place in an "unregulated sphere", and more than 200 regulations from other fields were applicable (Öhlinger, 1991: XIII). However, similar to the German situation (Gill 1996), the existing instruments did not provide an adequate tool for the explicit licensing of genetic engineering work in view of the "Green" criticism. A more important reason for the decision to pass a uniform genetic engineering act was probably the planned accession to the European Economic Area and the European Union. Membership in the EEA already meant an obligation to implement the relevant EU regulations, so that major concepts of the new act were anticipated.[xv]

Even so, in 1991 the Parliament voted unanimously to set up a parliamentary enquiry commission to investigate the issue of "technology assessment based on the example of genetic engineering" preliminary to the legislation. It was to "provide a parliamentary discussion of the chances, risks and impacts of progressive genetic engineering parallel to the development of genetic engineering in its various applications, and to present appropriate measures for the responsible handling of this technology in a report to the National Assembly" (Austrian National Assembly, 1992, Vol. I, 14:2), which was delivered on 1 November 1992. In its recommendations, the enquiry commission demanded that "Sozialverträglichkeit" be taken into consideration in addition to the ethical requirements and environmental impact (ibid.: 149). According to a member of the enquiry commission (a historian of science), the term should express the demand for "coping with structural changes in the society due to the impact of new technologies" in a way that "safeguards the balance of interests and the mainte-

nance of consensual value orientations".[xvi] There was no obvious reference to an elaborate theoretical framework, rather, the term was adopted in order to cater for broader concerns that could not be adresses otherwise - it appeared quite "obvious" that applications of this new technology have to be socially sustainable (B. Bolognese-Leuchtenmüller, personal communication). Moreover, recommendations on information for the public, participation by the public, mandatory disclosure (annual report on all genetic engineering activities) and on measures to promote the public discussion of genetic engineering were expressed (ibid. 150-155), which offered numerous starting points for a stimulation of public discussion on this issue. However, these proposals were not directly related to the term "Sozialverträglichkeit", which thus remained undefined.[xvii] A first draft of the Genetic Engineering Act (GEA)[xviii] was presented just before the recommendations of the parliamentary commission, and already contained a provision demanding the "Sozialverträglichkeit" of genetic engineering applications. In the course of intensive discussions with representatives of the industry and research, numerous provisions were amended, but the provision on "Sozialverträglichkeit" remained unchanged in principle and was passed in 1994. Privately, officials conceded that the term was kept in the law in order to balance the relaxation of certain regulations for industrial production to the very limit of the EU directive. The GEA came into force on 1.1.1995.

The term "Sozialverträglichkeit" appears as a negative in the GEA: § 63 par. 1 states that genetically engineered products must not lead to "soziale Unverträglichkeiten", which are given "if it may be assumed on a technical basis that such products would lead to an unbalanced burden on society or on social groups, and if this burden no longer appears acceptable to the population for economic, social or moral reasons." The other provisions of the Genetic Engineering Act are more or less in accordance with the EU directives, with exception of the (also unique) provision on applications in humans. The EU directives are aimed exclusively

at the protection of human health and the environment, which it is assumed can be achieved using international, standardised scientific and technical test methods (OECD 1993, critical: Levidow 1994). In Austria, however, a non-technical criterion is introduced with the above wording (Waldhäusl, in Torgersen/Seifert, 1995). As far as the concordance with EU directives is concerned, this presents a problem, since socio-economic criteria are expressly rejected in the licensing of products.

This issue was raised for discussion at the EEA negotiations.[xix] On the one hand, it was declared that EU Directive 90/220 deals solely with safety aspects, whilst a "social clause" offered the national legislations a certain scope to include other aspects. At the same time, this scope is strictly limited by the condition "where compatible with this Agreement", since the entire jurisdiction of the European Court is to become binding in the area of transnational trade with goods, which punishes hidden discrimination in particular. Since a separate justification would be required for each additional licensing criterion under primary European law, the national scope is more and more restricted in an increasingly international environment according to the principles of free trade. However, this does not apply to the same extent for all justifications: Whilst "ethical" reasons are tolerated for possible "soziale Unverträglichkeit", provided they are based on cultural differences between the member states, the "economic" reasons are clearly incompatible with the international regulations, which also goes for to the "social reasons" where they are based primarily on economic change, e.g. through rationalisation. This narrow understanding of "ethics" as a remaining category for otherwise inexplainable differences in the views of the public in different EU member states of course leaves no room for the discussion whether these views are substantiated or not - it solely serves to indicate the fact that there are differences.

On the Etymology of a Programmatic Formula

Over the last decade, the "Sozialverträglichkeit" of technological development has become an encroaching guiding principle. The term has been transferred from the vocabulary of German social sciences to the everyday language of politics, where it often serves to extenuate painful measures; it has become a synonym for the fairest possible distribution of the unpleasant. The everyday meaning partly covers up the scientific discussion of the contexts, therefore some differing concepts are to be explained in brief.

The term was coined in the German social science discussion on the use of nuclear energy (Renn, 1994), and was hardly familiar in Austria, at least among decision-makers (for details: Martinsen/Melchior, 1993). The first concept of "Sozialverträglichkeit" evolved at the end of the seventies, when doubts about the use of nuclear energy had already been articulated (Meyer-Abich, 1976). Under the impression of publicly discussed catastrophe potentials, Meyer-Abich designed the concept as the social equivalent of the environmental impact assessment. In order to forecast possible developments, an interdisciplinary expert panel was to design future scenarios and test them scientifically for their compatibility with the constitution and the value structures of society (Meyer-Abich/Schefeld, 1986). The decision on introduction of the technology was still to be made by the politically authorised bodies, however.

The criticism of this concept was that experts would not be able to aggregate any "overall acceptability" in view of this pluralism of values. Any attempt to measure the acceptability of a technical development would have to fail with the necessary forecast (Wiesenthal 1990: 31). The same went for the constantly changing value structures, of which only snapshots could be supplied in the best case. Furthermore, the costs of preparing the scenarios were difficult to justify (Brüchler 1992: 70). The presentation of research as a neutral sphere would also lead

to a distortion in favour of powerful interests that cover up the relations between research and politics (Wynne, 1987).

The second model (Renn et al., 1985) was based on the idea that anything that is accepted by society is socially sustainable. With this, "Sozialverträglichkeit" research turned into empirical acceptance research (Tschiedel, 1989). With this reduction, so the criticism, technology in its social context was faded out. Furthermore, acceptance research would contribute towards the concentration of knowledge and power, and serve as an instrument for the manipulation of opinions and the creation of acceptance (Martinsen/Melchior, 1993: 26).

In the third approach, the division of labour between research and politics was given up in favour of a participational definition of "Sozialverträglichkeit" (Alemann/Schatz, 1987).[xx] The aim of the program "Man and Technology - socially sustainable technology design" was the critical and rational social discussion (Alemann et al., 1992: 12-45) with maximum social inclusion, which should allow ethically responsible action in a society of pluralistic values and interests.[xxi] This approach was also criticised: The concurrent openness and closing of discussions results in the problem of endless recourse: Who determines what is to be discussed with whom cannot be defined participationally again and again (Bechmann 1994: 24). Furthermore, the impression might be created that those technological innovations are socially sustainable which "have passed the filter of participational decision-making" (Wiesenthal, 1990: 33).

All three interpretations meet with considerable criticism. Therefore, it is not surprising that implementation attempts have been rare to date, although some proposals have beeen made to set up different lists of criteria. For example, Krimsky (1991) devised an interesting set of criteria for the social assessment of biotechnology, and Braczyk (1995) made an attempt to employ them (at least in a theoretical way) in a technology assessment project on the indus-

trial use of biotechnology in the German land Baden-Württemberg (v. Schell and Mohr, 1995). Obviously such a set of criteria has to be rather general if it is to fiit to a variety of projects. Not surprisingly, Braczyk arrived at the proposal to investigate several areas where there is an influence on what may be called "Sozialverträglichkeit" but not at a final decision (which was not intended, though). As many others, he heavily emphasized the institutional and procedural aspect of such an exercise into the social dimensions of an innovation project, clearly stating that there is no chance of deciding whether there is "Sozialverträglichkeit" or not (ibd., p. 548).

An interpretation of "dilatory formula compromise" suggests itself (Gloede, 1994: 148), with the help of which symbolic politics can be made (Edelmann, 1990: 22-36). The term is not only interpretable, but also in need of interpretation to a high degree, if not of fully discretionary content. Applicants could thus cover up different kinds of risks and procure the official certificate of "Sozialverträglichkeit" for questionable products. Decision-makers in the administration could use it to order further expert opinions and thus to delay decisions. People excluded from the decision-making process, on the other hand, could make use of it to justify further participation and prevention claims. The danger is obvious that decisions do not gain rationality through the inclusion of other than purely technical and scientific aspects, but become random and intransparent.

Therefore, "soziale Unverträglichkeit" hardly appears to be a feasible licensing criterion. The dilution into a "soft law", i.e. the conversion of a provision into a request to think about what could be "socially unsustainable" at an early stage appears inevitable. This more modest interpretation as a "social code" without any claims to be a clear definition of goals, restricted to the function of opening up an "indefinite potential for action" (Latniak 1995: 350) must also be viewed with mistrust, however, if taken as a criterion for decision-making. In view of the resulting problems, the impression that an additional criterion of "Sozialverträglichkeit" is

unsuitable as a licensing condition is consolidated. In fact, we must ask ourselves whether it does not ultimately lose its meaning in rhetoric.

No Role in Practice?

The practice appears to confirm this assumption. The "Sozialverträglichkeit" provision was obviously created with a view to possible controversy, in order to go beyond "normal" risk debates. The latest discussions could have been an opportunity for this. When the first three releases of genetically modified plants were applied for in Austria in winter 1996, the hitherto rather mild public discussion on genetic engineering became unexpectedly heated. Environmental organisations (Global 2000 and Greanpeace) had not bothered very much with genetic engineering before. Now they initiated a campaign that had an unheard of echo - no wonder, in view of the latent scepticism that simply hadn't been articulated in public until then. The mandatory hearings turned into demonstrations of the rejection of genetic engineering in agriculture in general, almost regardless of the individual plants under discussion. The decision by the Ministry of Health to reject all the applications was brought about by the public outrage over the herbicide resistance in one of the crop plants intended for release on the one hand, and by the fact that other, less controversial plants had been released prior to official approval and had to be collected again (Torgersen, 1996).

The public nuisance "genetic engineering in agriculture" again hit the headlines when the import of genetically modified soy beans to the EU and thus to Austria was planned in autumn 1996. The issue to the fore here was an import ban, but primarily the demand was for labelling of the many products containing such soy. All the major food chains declared themselves to be "genetic engineering-free zones" in compliance with consumer demands, regardless of the practical problems. NGOs and the Green Party had raised this demand for

all of Austria and - loudly acclaimed by the boulevard press - wanted to present to parliament with a referendum. Although the proclaimed health risks were to the fore, the ultimate issue in the soy bean affair was the demand for participation (e.g. stricter labelling) on the local - Austrian - level against the perceived dictatorship of the global chemical and agricultural corporations and the compliance of the EU authorities towards these. In other words: it was one of the many facets of globalisation. At least rhetorically, the authorities were quite willing to follow public opinion and to violate EU regulations with an open eye. Things escalated when, in spring 1997, a "popular initiative" (a kind of non-binding referendum where voters could support a proposal) backed by environmental, animal welfare, and religious NGOs as well as the Green party demanded a total ban of genetically altered crop plants, food, and patenting. Heavily supported by the tabloid press, it reached the second highest score of all such initiatives since this instrument was installed in the Sixties. The demands presented obviously would violate EU legislation, so a "catch-22" situation arose for the government.

The debate was all about products, socio-economic issues (in addition to health risks), and an independent Austrian position vis-à-vis the EU - almost ideal conditions to remember the "Sozialverträglichkeit" provision. But what role did the latter actually play in the most recent debate? Was the clause activated, did people refer to the promises associated with its inclusion in the Act, did deeds follow? Not in the least! Despite intensive discussions, the provision is still almost unknown, has never been applied, not even discussed in public. Only in a list of implementation proposals by the NGO proponents of the popular initiative there are some references to "Sozialverträglichkeit", but they were not taken up in the subsequent negotiations with the government. Why not?

One possible answer is that it was generally found to be both inapplicable and obvious, without meaning. "Sozialverträglichkeit" is not an argument that can be presented with the

same vehemence as health risks (as an argument for mandatory liability regulations) for example, no matter how unlikely these may be. The attractiveness of arguments in such debates is frequently measured by their descriptiveness - and allergies are much easier to understand and attack than social faults. For those opposed to the introduction of such products, it is always easier to address health risks than democratic principles, even when that is what it's all about - the flooding of the market with the first genetic engineering product, inseparably mixed with conventional products, dodges every labelling strategy, which is no doubt intentional. And even if we were to refer to "Sozialverträglichkeit", how should that be done? And who's to judge? In a debate that lives on daily events, it would not be a very attractive strategy for the opponents of genetic engineering to move on such unstable ground. But if the "Sozialverträglichkeit" clause is left to be forgotten even by its proponents, why does it exist at all? What's the sense of holding onto this concept, which is unfocussed and easy to abuse rhetorically?

More than Empty Words - On the Integration Potential of "Sozialverträglichkeit"

Socially Unsustainable Genetic Engineering?

Although the demand for "Sozialverträglichkeit" is often diluted by rhetoric use, the term has lost its practical relevance as a result of its use in everyday political language. In the political

process, desires and hopes for humane technology become a postulate with the demand for regulatory action under the banner of "Sozialverträglichkeit".[xxii] By incorporating the claim of new technologies with overall rational and thus balanced goals, the term becomes a "heuristic imperative" (Aichholzer and Torgersen, 1994:4-5). This raises the question of which content such a term could have.

Initially, general reserves against genetic engineering in comparison with other technologies can be observed empirically in the public, whereby it has already been pointed out that the controversy only flared up to full scale recently in Austria. However, today it is no longer the discussion of "genetic engineering", but the discussion of individual problem areas such as patents, technology transfer, labelling of foods, etc. that is to the fore. On the one hand, genetic engineering methods and products are compared with other methods and products, and the postulate of a fundamental difference must be substantiated in the individual case. On the other hand, as numerous, more recent surveys also show,[xxiii] there remains in many cases a particular vigilance with regard to everything that can be associated with the term "genetic engineering". This has less to do with the common inherent properties of all genetically engineered products (which all vary considerably and yet often cannot be distinguished from others) than with the connotation of their development: Where genetic engineering had a part, the demands are much higher, not only with regard to health and ecological criteria, but also and especially with regard to their contribution towards the general welfare - in contrast to the sole fulfilment of the partial interests of a mainly profit-oriented industry, most likely in violation of ethical principles hitherto considered sacrosanct.

Today, the unease concerns mainly genetic engineering products in agriculture, which by many are considered to be high-tech solutions with a new problem potential and therefore a hazard to health and the environment. On top of this, there are often socio-economic arguments, e.g. with regard to new dependence and the forced rationalisation pressure on

smaller operations. Not least, ethical reserves are also reported, for example that genetic engineering methods "run counter to nature" (and thus point out the different concepts of "nature" in industry and research on the one hand, and large parts of the population on the other hand, see Schomberg, 1995). Last but not least, these products are not necessary or adequate in view of the existing surplus. Only something that is clearly in the interest of the general welfare (and the safety of which is proven) is regarded as tolerable, in cases of doubt the reserves prevail.

The other side points out the increasingly keen global competition, which makes the economic potential of innovative biotechnology a thing we cannot do without. One result is the tendency towards a (rhetorical) confrontation between ethical arguments and economic constraints in the course of economising the debate, for example in the field of patents. Thus, the debate frequently leaves the level of technical, economic or individual benefit analysis,[xxiv] and points to the value level, on which only a political decision is now possible. Is an expansion of the decision-making basis beyond purely technical criteria useful under these conditions? For which problems does this bring us closer to a solution?

First, the increased forecasting uncertainty for novel and/or rapidly progressing technologies must be mentioned, which is obviously one of the reasons why genetic engineering applications are still controversial in the public (although this uncertainty, like the dependence on expert opinions, applies to many novel or rapidly progressing technologies). As already mentioned, scientific and technical knowledge is subject to changes, which in turn cannot be foreseen. Ultimately, not even the observation that a theory is essentially controversial allows conclusions to be drawn with regard to its long-term validity. Whether there is scientific dissent depends not only on how robust a theory is, but also on numerous factors that are inherent to science or of a contextual nature.[xxv]

In view of this basic uncertainty, the statement that risks to body and life cannot be clearly proven according to the state of the art is insufficient as the only basis for decision-making. This would be a risky reduction, to prevent which the precautionary principle was included in the EU Directive on genetic engineering and in the national laws. There are numerous interpretations of the principle, the most common (and least controversial) of which saying that where there is a serious threat of irreversible damage, any lack of scientific evidence must not lead to postpone or avoid countermeasures. There is an inherent demand for deliberation: one has to decide whether a threat is serious or the damage may be irreversible, i.e. an assumption about future possiblities has to be made. The Norwegian interpretation takes the discussion one step further: if there are any doubts whether there may arise negative impacts, these doubt should count in favor of the Environment, i.e. against the particular application of the technology at stake. Carried out without compromise, all applications under review would have to be banned if there were any doubts about their safety - which there always may be. As everyone knows, doubts can always be risen but the absence of a risk can never be proven; there is always a "residual risk". This would result in a complete gridlock, which is obviously nonsense. Thus, if the claim to avoid risky reductions is to remain valid, other criteria for which risks are to be taken must be added. The claim of the precautionary principle results in the demand for complex consideration and selection from various risks. Which ones are ultimately taken depends upon who is affected in which way, and who has which benefit, which ultimately includes socio-economic aspects.[xxvi]

Such an expansion of the arguments is not really new. The German Genetic Engineering Act, for example, demands such a consideration of releases, although it is never carried out explicitly in practice. The Norwegian law contains similar provisions, and some relevant US regulations (there is no uniform genetic engineering law in the USA) also include a risk-benefit analysis. Furthermore, such considerations are also implicit as the basis for assess-

ment in the public (Nielsen, 1997): Medical applications and products are well accepted today because their benefit, the prolongation of life, is directly evident and a specific risk from the method of production can hardly be argued.[xxvii] Agricultural applications are also viewed quite differently: In countries with great economic and agricultural problems, genetic engineering is in some cases seen in a more positive light than in fairly wealthy countries, in which the marginal benefit from the application of genetic engineering is no longer visible.[xxviii]

Resistance against the inclusion of socio-economic arguments in such complex risk assessments is probably due more to the fear of arbitrary trade barriers due to the subjective interpretation of ambiguous criteria. However, the argument that only the inclusion of socio-economic factors can counteract such subjective assessments must be clearly relativated. Even with a limitation to purely technically defined risks of genetic engineering, such subjective assessments cannot be avoided. Here, risks are considerably more difficult to assess due to the higher forecasting uncertainty than, for example, in the calculations for a bridge. In order to guarantee a safety margin as for the bridge (which is designed to bear a certain load but can in fact bear a much higher one), assumptions must be made continuously, for which hardly any experimental data is available. These assumptions in turn are based on estimates, i.e. on subjective interpretation, even if they are made by renowned experts. Therefore, objective forecasts will always present a problem in a rapidly progressing, innovative field with according lack of experience, despite the limitation to purely scientific arguments.[xxix] Any "safety research" necessarily has to lack behind, because the relevant questions are being asked only after the problem (potentially) has arisen or at least has come to the mind.[xxx] We are not backing up the statement that transgenic plants are inherently "hazardous", we are merely pointing out that risk assessments are subject to restrictions which are all the greater, the more dynamic the area is. Thus, for example, the call for a broader assessment basis is

gaining more justification than it is being undermined by the reference to subjective decisions.

The second problem concerns the replacement of socio-economic criteria by technical criteria, if decisions for example on the market license for genetically engineered products in agriculture clearly refer to a socio-economic or even a superior value level. Here, there is danger that the scientific and technical arguments with regard to the risks to health and environment are instrumentalised to enforce group-specific, general social or ethical aspects, as already explained in context with the licensing of bovine growth hormone. The more vehemently we insist on a "scientific" argument, the greater is the danger that other arguments are hiding behind it. A regulation that grants these their place could therefore lead to a more open and more honest debate.

Thereby, decisions that go beyond the technical criteria are not only made where decidedly social impacts are concerned. Even the fundamental regulatory issue of whether genetic engineering products are to be treated the same as other products with the same properties but different origins (s. above) has the nature of a value decision. This obviously differs among the EU member states. National differences in the assessment of genetic engineering products are European reality, even if the EU Commission repeatedly points out the common features and the progress made towards harmonisation. The argument that the inclusion of other than purely scientific assessment criteria obstructs the harmonisation of the common market is relativated in view of the existing differences.

In the study of the term "Sozialverträglichkeit", its ambiguity and the difficulty of implementation was initially to the fore. With regard to the problems of biotechnology regulation, on the other hand, a number of arguments can be made in favour of expanding the assessment criteria to include socio-economic effects. In particular, it was shown that the restriction to

technical, scientific criteria leads to risky fading out and to the apparently rational treatment of complex problems. In view of the nationally varied practice with regard to genetic engineering and complex unspoken but de facto assessments in the forefield of decision-making, the term "Sozialverträglichkeit" is merely a theoretical, albeit ambiguous conceptualisation of the assessment guidelines. If this term is to be accorded a constructive meaning, therefore, the question of its sensible realisation must be raised.

Participation

A major problem in the assessment of genetic engineering applications lies in the fact that differing interests are amalgamated with deep-rooted values. This is not limited to the field of genetic engineering, but it is particularly clear in this area. The question is how both elements can be integrated reasonably in decision-making, in order to increase the overall rationality. Values can hardly be aggregated and taken into account "objectively" - there is no other way than to integrate their carriers in the decision-making process. This results in the demand for participation models that determine the search for "Sozialverträglichkeit" today.

One of the biggest problems thereby is the integration in the existing institutional framework of representative democracies and established state institutions. The decision-making pathways in a constitutional state are already fixed, they go through courts, parliaments, governments, authorities with the corresponding perseverance (Renn, 1994: 43), or through plebiscitary procedures. In the three "classical" interpretations of "Sozialverträglichkeit" as acceptability, acceptance and participation, this problem was already addressed. It concerns all three concepts, because friction certainly does not arise only in the participational interpretation, but also in the decision-making approach.[xxxi]

The term participation is just as ambiguous as "Sozialverträglichkeit", however. After all, it also means procedures in which no institutional or factual political codecision options are provided, but which can emit supreme signals to the ultimate decision-makers. This was the case, for example, in the TA project "Cultivation of plants with genetically engineered herbicide resistance" under the leadership of Wolfgang van den Daele's[xxxii] (Bora/Döbert, 1993), which took place at a time in which a political decision on releases was no longer pending (Gloede, 1994: 169-172). Only the cognitive objections were to be cleared up, which would not have had the slightest influence on political practice. For clarification, participational procedures must therefore be differentiated according to the context, for example (with Gloede) in

- participation as a functional requirement (for decision-making),
- participation as a democratic demand, and
- participation as an element of discursive mediation (ibid.: 150-56).

Participation as a functional requirement serves the rationalisation of decision-making and therefore takes place in the forefield of political decisions. Friction between established institutions and the participation event is to be expected, since all participation criteria are defined by the decision-maker alone. One example of this are the "mediations" developed in the USA, communication and negotiation meetings (usually of a compensatory nature) under the chairmanship of neutral "mediators" (Bechmann, 1994: 21-22). This also includes the "development of 'administrative filters' in the forefield of political decisions" (Latniak, 1995: 348), i.e. preliminary negotiations or co-operation between political bodies and actors from the subsystems. The purpose is to enhance the steering performance - mainly by creating acceptance. This also includes the Austrian practice of integrating the social partners in po-

litical decision-making. However, there are clear differences that are based on the specific national understanding of how risk controversies are solved (Linnerooth-Bayer, 1994).

Participation as a democratic demand aims at the inclusion of social groups hitherto excluded in decision-making processes. This causal connection is an answer to the perception of increasing political estrangement. Since this form of expanded participation is based on democratic standards, the tension is really placed between basic democratic and politically centred, delegating models. However, the various technology areas must be differentiated. Novel, interactive and decentralised technologies such as electronic information and communications lend such participational design demands more possibilities (Wagner, 1994) than the "top-down" technologies predominant in genetic engineering do. Moreover, various levels of participation must be differentiated, for example the political or overall social level as compared with the operational one, etc.

Last but not least, if participation is to be regarded as an element of discursive mediation, it is uncoupled from the immediate political decision-making conditions. Discursive mediations are "theme-centred communication" with no action-relevant obligations (Bechmann, 1994: 21-22). Their function consists in the clarification of factual controversies associated with polarisation and conflicts (v.d. Daele/Döbert, 1994: 6). The conditions under which they become possible are artificial, since the participants must be made to differentiate between the factual and the value level, to present rational counterarguments, and to admit errors, which they would never do in public discussions. Participation is merely in the form of "process control" (what do we talk about?) and "result control" (what conclusions should be drawn at the end?), but not in terms of political decision-making. By creating concurrence pressure on the factual level on the one hand, and forcing contingent values to be made ex-

plicit on the other hand, discursive mediations aim at "restoring fragile social integration as the condition for democratic decision-making, not at these themselves" (Gloede, 1994: 156).

The enhancement of steering performance through mediation and the creation of acceptance, the inclusion of social groups as an answer to political estrangement, the clarification of factual controversies associated with polarisation and conflicts - ultimately these functions can all be understood in the sense of "restoration of the social integration". If "Sozialverträglichkeit" is turned against social disintegration (v.d. Daele, 1993: 230-233), then social integration is ultimately a demand imminent in all concepts of "Sozialverträglichkeit". However, it cannot be reduced to this alone, since this would ignore the original intention of technology policy steering. This raises the suspicion that the term "social integration" as a concrete criterion of assessment must ultimately remain just as vague as that of "Sozialverträglichkeit", and that both merely suggest goals.

Remains the moderate idea of providing arenas in which we can talk to each other, in order to find acceptance as a credible person or group with genuine interests and conclusive opinions from those who are of a different opinion and represent other interests, provided the necessary basis of communication and understanding is guaranteed and a minimum of common basic values exists. Thus, the demand that certain products must not cause "soziale Unverträglichkeit" has the nature of an obligation for public discussion and negotiation of the object that goes beyond the encouragement to simply think about things, whereby the initial conditions should be equal for all the participants. The state's function thereby is to provide a framework and to guarantee it from the legal point of view (Schomberg, 1995: 23-26).

Public Debate

In order for such processes to really take place, mediation is necessary - otherwise different opinions and incompatible languages will collide and there will be limitation instead of acceptance. Thereby, the discursive mediation must not be an isolated event that only provides non-committal political decision-making aids, but must supply "waste products" to the outside: knowledge, arguments and claims for a public discussion - no longer subject to the artificial conditions of the participational discourse event. Accordingly, publicity is the decisive fringe condition for a concept of "Sozialverträglichkeit" that wishes to maintain its constructive performance - social integration in the sense of Gloede - in view of its institutional limitations. "Publicity" is, however, a highly ambivalent concept somewhere between that of a respectability as underlies the Declaration of Independence of the USA, for example, and which makes decisions of overall national interest into those of individual and informed deliberation, and that of a "sound popular instinct" that is determined mainly by the requirements of modern mass communications. If public discourse is the aim, nothing is said yet about its quality and contents.

Initially, we are not dependent on the procedure of "discursive mediation" as the sole instrument, however. Debates based on an expert opinion of "Sozialverträglichkeit" can already achieve the desired effect: "Sustainability assessments and technological impact assessments (...) are the forums of general discussion in society about reasonable cultural orientation, about desirable and necessary goals and the limits of institutionalised politics" (v.d. Daele, 1993: 245). Debates on such investigations are subject to the same restrictions as debates on the object itself - without discussion rules and mediation, they threaten to sink to the level of an exchange without further integration value or promote only the internal integration of the group, a development that was observed in the genetic engineering controversy in Germany. The rather unsuccessful attempts at "hearings" in the course of licensing

procedures serve mainly to present different opinions, without providing any integration services (Gill, 1991: 260 ff.).

Debates on "Sozialverträglichkeit" - as a contribution to social integration - can create or reduce acceptance for government action, enhance steering performance, but also doom steering attempts to failure. The public discussion, to which the institutions of representative democracies (such as political parties, administrations) are sometimes a party, also presents a certain discourse risk for these (in the form of gains or losses in votes or implementation success or failure). Therefore, it is generally not very easy for national institutions to admit, promote and in particular to institutionally integrate such debates. So it is not surprising that impulses for experiments with new forms of participation come mainly from non-governmental organisations. Government, or any established institution, tend to take them up when there is a risk of further loosing credibility in general, or legitimacy of any decision in the question at stake, if it would not do so. So it is the menace of future controversies which may trigger the institutions´ readiness to accept participation. Without public debate this willingness may vanish.

Possible Approaches

Examples Elsewhere

In addition to the integration of all opinions on the subject as a contribution towards a decision on a controversial issue, (at least) three tasks can be identified for resolution in such procedures. First of all, controversial issues must be cleared up or at least illuminated in their

various facets in such a way that they meet with the approval of all or as many participants as possible. Thereby, scientific clarification often meets limits that point to the value level. The second task is the development of a political will, not of the actual actors, whose political attitude may be assumed given, but of the "audience", whose individual values may be reflected in the one or the other position of various actors. In the case of a binding participatory instrument (like a plebiscite), this political will is immediatedly executed by a majority vote. However, most instruments (at least those dealt with here) are non.binding, so the problem arises of transferring this will into decision-making: since the further procedure depends on the actors in the individual issue, an independent mediation is required in terms of practical decision-making, in order to avoid the "cementing" of unshakeable positions. Currently, a number of variants are available and are being tested in various European countries.[xxxiii]

Discursive mediation forms as applied in the mentioned TA project "Cultivation of plants with genetically engineered herbicide resistance" (v.d. Daele/Döbert, 1994) place the main emphasis on clarifying controversial issues. The main performance of the procedure in terms of the demand for "Sozialverträglichkeit" has already been indicated - in addition to a contribution towards social integration, "fact finding" is particularly worth mention. Such a procedure could lead to the clarification of highly complex material that can only be understood from an interdisciplinary perspective. However, attention has to be paid to the antagonistic fundamental principle: The fact finding does not take place with a co-operative intention, but rather the procedure makes use of the scientific discussion resulting from the diverging political interests. The production of such a theoretically interesting constellation may be regarded as an organisational and strategic masterpiece. It is doubtful whether it can be repeated in Austria (or elsewhere), since the condition for this model was the constellation of certain actors at the time of the project in Germany, which is considered a special case in terms of the genetic engineering debate by international comparison (see above). Further, if

the diverging political interests cannot be bridged (which is unlikely), there is a danger that the scientific debate will end up in a gridlock, too - which is exactly what had happened in this exercise.

Another possibility are "consensus conferences" (see Joss/Durant, 1994), which serve mainly the second task. These, too, are discursive participational procedures which - developed in Denmark - have recently been implemented in Great Britain, the Netherlands and Norway with regard to genetic engineering. In these procedures - unlike the preceding example - expert knowledge (and assessments) is not mobilised and integrated according to standards. Instead, a small group (approx. 15) of laypersons without prejudice of interests, selected according to demographic aspects, tries to produce a catalogue of consenting recommendations on a certain problem area for the political decision-makers. Since there are no obligations, an influence on the political decisions is possible but not binding. However, neither the cognitive clarification of complex problems (experts cannot be replaced by laypersons in this respect) nor the determination of acceptance by the population (the sample cannot be representative) may be expected from these "consensus conferences", although the results give an indication of the "public climate" at the relevant time.

A central element of consensus conferences is that they - with the help of media presence - take place before the eyes of the public. Thus, they raise the general level of knowledge, enhance the problem awareness, but also create claims, draw limits and stimulate a public discussion, which in turns provides the framework for political decisions, or shifts it: the discourse risk for those making the decisions increases. Even if no new decision-making structures are thus created, consensus conferences can nonetheless be seen in the democratic political context: In terms of fact finding, they are a contribution towards emancipation. In terms of decision making, they present a framework which is both thoroughly argued and highly legitimised by the lack of direct personal interests of the laypeople. At the same time,

they show - as a side effect, in terms of enlightenment - how consensus can be achieved despite different values, opinions and social barriers. After a consensus conference properly organised, the world in the particular field is not the same as it used to be. Decision makers who neglect the outcome run into the risk of further decreasing the legitimacy of their decisions.

Last but not least, the possibility of institutional innovations must be considered, which are dedicated to the third of the above tasks and could be oriented towards the Dutch consumer protection organisation "Consumer and Biotechnology"[xxxiv], for example. The function of this institution is the mediation between NGOs, the biotechnology industry, the authorities, agricultural associations and consumer organisations (Stemerding/Jelsma, 1995). The latter also define its guidelines - and are thus integrated in a prominent position in the social process. This type of mediation remains on the communications level and allows the articulation of wishes, worries and factual presentations for all groups involved beyond the market for the political arena in the traditional sense. For "C&B" to function, however, the trust of those between whom it is to mediate is imperative. For this purpose, "C&B" must be immune to external influence and instrumentalisation attempts, a task that demands a constant balancing act. The institution thus contributes towards the reduction of conflict potentials right from the start and allows consensus to be found beyond certain decision-making situation (e.g. the scheduling of legislation), which places it in the context of an expanded decision-making rationalisation.

All these forms have two fundamental problems in common. Firstly, the results are not binding and require the approval of the decision-makers, i.e. primarily the sovereign bodies, for their practical relevance. This problem can hardly be solved within the scope of the constitutional demands predominant in most countries. In Denmark, the institution of consensus conferences was therefore established, associated with the parliament, so that the results of

such procedures could be considered in parliamentary decision-making as quickly as possible.[xxxv]

The second problem concerns the possibility to manipulate the results. All three forms risk being overrun by powerful interests and ultimately serving only as alibis for their implementation. Therefore, the goals and motives of the organisers, the funding, the selection of monitoring bodies and of the participants must be kept as transparent as possible. Especially the first and the third item were not defined clearly enough in the first British consensus conference on plant biotechnology, for example.

Problems in the Austrian Situation

In order to answer the question of which form the "Sozialverträglichkeit" will assume in Austrian political practice, we must first look at the political culture in Austria, which already suggest a certain interpretation of the term. Because symbolic politics vis-à-vis the public are characteristic (not only, but in particular) of the Austrian political culture (Gerlich, 1990: 459): "Symbolic politics means that for the public the impression of effective representation of interests is to be created with appeals, promises and emotional guarantees, i.e. mainly with rhetoric means." The reasons for this may lie in the system of social partnership, among others, the members of which - mainly the representatives of the employers and the employees - are under obligation to their clients, on the one hand, and who are under extreme pressure of consensus and compromise on the other hand, whereby the results always have to be presented to the people they represent as "victories". Therefore, it would seem logical to regard the unclear definition of the term "Sozialverträglichkeit" in the Austrian political understanding more as a part of a problem-solving strategy than as the problem. The wording is also likely to satisfy the bureaucracy, since there is a traditional tendency to consider a problem

solved, "once a - usually legal - mandate has been given to the administration. The fact that many such solutions meet with difficulties or even fail in the implementation phase remains faded out with an almost surprising inconsequence." (ibid.) In this light, the difficulties with regard to EU compatibility also appear to be an accepted, if not silently desired obstacle on the thorny path to implementation.

If, on the other hand - perhaps due to public problem perception in connection with genetically engineered products - pressure to act is to be created and the provision is to be activated, it must be expected that the term will be given a decisional meaning. Certainly no-one was thinking of participational procedures when the clause was worded, but "more of an expertise-supported administrative procedure to assess 'Sozialverträglichkeit' in the form of economic opinions (Tichy, 1994: 50). The fact that such a procedure means a return to the failed beginnings of the concept is very clear in view of the mentioned historical experience.

The chances of new participational procedures as they are used in the international environment being employed in Austria are not easy to assess. It would seem that the established bodies of consensus decision-making in the social partnership offer the best starting conditions,[xxxvi] but appearances can deceive. Corporate systems offer decision-making rationalisation as internal services - they allow the wishes of the people involved to be bundled and taken into account in the decision-making process on the one hand, which in turn enhances the legitimacy and thus the success of the decision-making process (Münch, 1992). However, the form of participation used in corporate systems has its price: The principle of "intimacy", i.e. of a small group of participants, together with exclusion of the public (Grande, 1985: 229) sometimes opposes the democratic context of participation. The principle of "dethematisation" due to the imperative of consensus (ibid.: 230), i.e. the thematic limitation to an area where consensus can be found and the fading out of all areas in which no consensus can be found, opposes the discursive context. This was also shown by the first Austrian parliamen-

tary enquiry commission on issues of genetic engineering, the results of which were prepared by the involved members of parliament with much more distance from party reason and the interests of the social partners than is normally the case.[xxxvii] Even so, this attempt at parliamentary emancipation was quite remarkable in that the National Assembly, a political body that does not normally demonstrate much institutional flexibility, experimented with a new form of participational decision-making.

Particularly in association with a cross-sectional technology such as genetic engineering, a comprehensive outlook ranging from microbiology to the problems of the Third World would be necessary. The orientation of the social partners towards purely economic problems opposes this horizon, however, as already demonstrated by the rather accessory treatment of consumer interests. Moreover, especially those social groups that are critical of genetic engineering and are therefore heard by the population, such as new social movements or the Green Party, were not taken into consideration. Those, on the other hand, who obviously have less credibility in this issue, namely the industry and the trade unions as political institutions, dominate the social partnership. This means that a one-sided and therefore not very credible composition of participational forums may be expected.

Last but not least, the attitude of the population also indicates that the initiation and cultivation of a social discourse will not be too easy. As was shown again just recently, the Austrian attitude towards genetic engineering is particularly conservative (Karmasin 1996). The low level of knowledge and high degree of indecision in the assessment in earlier surveys seems to indicate that this attitude has not developed from a critical discussion but that there was first "rejection from the pit of the stomach", and that the appropriate arguments were sought afterwards, whereby the level of knowledge remained low, the emotional commitment high (Torgersen and Seifert, 1997). The feeling of being overstrained by the "complex matter", in turn, led to a feeling of being controlled - and renewed diffuse unease. The images that ap-

pear in qualitative surveys in connection with the term "genetic engineering" are certainly strongly characterised by future angst and a feeling of dependence (Karmasin, 1996, Wagner and Torgersen, 1996). This feeling of being controlled and the helplessness, particularly towards the "multis", has been reinforced in the course of the globalisation discussion and the social cutbacks in the recent past. There are good reasons - beyond a gloomy gut feeling - to anticipate further menaces both for the environment as well as for economy coming from the ever increasing speed of globalisation and innovation. However, the question is how best to react. Simply to keep the illusion of sitting on an "island of the blessed" (as the Pope once alluded to Austria) without further bothering probably is not the best option available. Technocratic experts frequently recommend a strategy by of increasing the level of knowledge. However, this meets with two obstacles: on the one hand the low willingness to accept information as a result of the perceived overstrain, and on the other hand the lack of codetermination and influence possibilities, which does not allow any interest to develop, since the technical development appears to be an autonomous, self-referencing process and is presented as such - particularly by those technocrats making technology politics in the social partnership system.

However - if the administration had taken the bull by the horns early and on its own initiative, taken up the anticipated risk controversy and initiated a social dialogue, with whatever means, the discussion on the releases and on soy imports would probably have taken a more rational course without having to end in a mere attempt to create acceptance. Options for action should have been considered early and the politicians should not have allowed their decision-making competence be taken from them to such an extent as is currently the case. In other words: If the will of the lawmakers for "Sozialverträglichkeit" had been taken seriously on time and appropriate measures taken (i.e.: social dialogue promoted), then we would be in a politically far less precarious situation today.

Conclusions

Next to Norway (with its sustainability criterion), Austria is the only country in Europe that includes non-technical preventive criteria in a uniform genetic engineering act: "Sozial unverträglich" effects of genetically modified organisms or genetically engineered products must be avoided. However, this demand is faced by serious problems. On the one hand, the integration in EU agreements makes this provision void, and on the other hand the term "Sozialverträglichkeit" remains ambiguous and suggestive. In particular, a clear ability to decide on "soziale Unverträglichkeit" is assumed that is not given in a pluralistic, dynamic society in which social integration must be produced by constant constructive effort. The conceptual weakness of the provision is shown by the practice of risk controversies - it is even forgotten by the potential beneficiaries. In view of the vague borders between "nature" and "society", the distinction from the demands of environmental sustainability is getting more and more difficult.

On the other hand, the reduction to a pure risk assessment according to "scientifically clear" criteria is proving to be an inadequate strategy for substantially and socially complex decision-making situations as they are frequently found in the context of genetic engineering. In search of complex, inclusive and legitimate forms of decision-making, there are experiments with various forms of participational procedures for technology assessments on the international scene. However, these are also faced by problems and suffer primarily from a lack of integration in the established procedures of representative democracies and in the routines of government institutions. Since the expectations placed in the term participation also vary,

it must be differentiated - in a steering instrument, democracy expansion, and discursive fact finding. Each of these different, not necessarily compatible participation functions fulfils a specific purpose for the "Sozialverträglichkeit" demand. If social integration is regarded as the major goal, publicity becomes a necessary condition.

Even if we can lean on concrete experience with participational procedures elsewhere, the typical behavioural forms of the Austrian political culture and a corporate structure with a tendency to act behind closed doors leaves little scope for the establishment of participational structures in technology policy, especially since it bears a discourse risk for established institutions. It is doubtful whether a rethinking process that articulates itself in a rising interest for such forms of decision-making can be started in the relevant bodies in Austria. It is also doubtful whether the inclusion of the "Sozialverträglichkeit" provision in the Austrian Genetic Engineering Act can be interpreted in this way. It is probably too early to see this as a sign for a new phase in the Austrian technology policy. However, yesterday's omissions seem to be taking their revenge, because risk controversies cannot be avoided by trying to circumvent social dialogue.

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Footnotes

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[i] In English: "social sustainability" (according to British sociologists) However, this term is virtually untranslatable and is therefore left in German ("Sozialverträglichkeit"] in this paper.

[ii] On science as a "strategic resource" in conflicts concerning the foundations of regulations, see Schomberg, 1995.

[iii] By "ethics" we mean considerations that go beyond more technically adressable arguments concerning safety, protection of human health and the environment, and, on the other hand, (social) arguments of distributional justice and future policy options e.g. in agriculture. By no means this should imply that the above mentioned topics have nothing to do with ethical concerns. More appropriately, we should speak about arguments that arise from deeply rooted value systems, convictions, cultural attitudes or world views. However, since the term "ethical" seem to be well introduced, for example in official documents, for this kind of arguments, we prefer to use it here.

[iv] In the following, such products shall be referred to as "genetic engineering products"

[v] In addition to Directive 90/219/EEC on the closed system, the Directive 90/220/EEC of 23.4.1990 on the intentional release of genetically modified organisms in the environment, Bulletin L 117/15 of 8.5.1990, is important.

[vi] Since some experience with transgenic plants has been gathered in the meantime (OECD, 1993a), Annex II of the original Directive 90/220/EEC was replaced by Directive 94/15/EEC (Commission of the EU, 1994 a), which contains more appropriate criteria for plants and conditions for a simplified procedure. This Directive describes precisely and thus simplifies the risk assessment of plants. In addition, the criteria for a simplified procedure and

simplified procedural processes for certain releases have been defined in the Commission Resolutions 93/584/EEC and 94/730/EEC.

[vii] In addition to fears concerning direct health and environmental hazards, such as the development of unknown toxic substances or the transfer of genes to wild plants, there is also the fear of further industrialisation of agriculture and greater dependence on major corporations, leading to price decline and a structural crisis in agriculture, to name just one example (for many: Bartsch et al., 1989, Busch et al., 1992).

[viii] A product that is manufactured by genetic engineering, but which does not contain any genetically modified organisms or parts and is therefore not subject to the mentioned EU directive. Abbreviated rBGH in the following.

[ix] In Norway, on the other hand, the risk awareness is much higher, with an only slightly higher level of knowledge and similarly low acceptance (Nielsen, forthcoming).

[x] Meinolf Dierkes in the concluding statement at the WZB/EU Conference "Public Understanding of Science and Technology" in Berlin, 2.12.1995, see also v. Grote, 1996.

[xi] In the following: NGOs.

[xii] Only the Norwegian Genetic Engineering Act demands - of all genetic engineering applications - that they must "promote a sustained development" and "offer a social benefit".

[xiii] Even if the aversion of hazards is to the fore in the genetic engineering legislation, we must not overlook the fact that the risk assessment is regarded not least as a confidence-building measure to disperse the fears of the population, as John Beringer, president of the British commission ACRE has emphasised repeatedly.

[xiv] This is not least due to the considerable influence of individuals: the Minister of Science in office at the time, Tuppy, himself a renowned biochemist, strongly promoted this industrial location.

[xv] Already in 1989, the Federal Chancellory decreed that all new Austrian laws had to be compatible with the relevant EU regulations.

[xvi] see Analyseteil der SPÖ-Fraktion, p. 24 in Österreichischer Nationalrat, Report of the Parliamentary Enquiry Commission, 740 der Beilagen zu den Stenographischen Protokollen des Nationalrates XVIII.GP

[xvii] Against industry´s demand for a more liberal regulation a loose coalition formed between Socialist and Green commission members and the catholic wing of the conservative People´s Party leading to considerable stress within the latter.

[xviii] In the following: GEA.

[xix] Norway was in the same situation, since the Norwegian Genetic Engineering Act also contains non-technical criteria (s. below).

[xx] "In the issue of assessment criteria for the term "Sozialverträglichkeit", the illusion that an objective and operationalised definition of "Sozialverträglichkeit" can be found and ticked off quickly must first be abandoned. The term "Sozialverträglichkeit" must remain a transparent and preliminary working term, it must not claim too great explanatory power. Instead, it should be made concrete as the case and situation demands in a collective, participational process." (Alemann/Schatz, 1987: 32).

[xxi] In this context, the orientation towards need, towards the reversibility of decisions and the error-friendliness of technologies was remarkable.

[xxii] More need-oriented, user friendly, safe and economic, and increasingly more ecological products are also created under the priority of purely economic rationalisation, if they have better market potential as a result of these properties. In addition, technical solutions that fulfil the demand for "Sozialverträglichkeit" must not be discriminating, or must be used by as many people as possible and should basically counteract the tendency to externalise economic costs.

[xxiii] see, e.g., Ökonsult, 1996 a, b, c

[xxiv] This applies at least in the European context, although it may well be different in America - as the widespread use of cost-benefit analyses seems to indicate. See Linnerooth-Bayer, 1994.

[xxv] One example of a topic for which there was obviously insufficient scientific discussion for a long time is the question to what extent the pathogen for bovine spongiform encephalopathy (BSE) can be transferred to man. It was not until the epidemic was already on the decline again that the debate was started, with devastating results for those who had previously prevented it.

[xxvi] In the same way, risks also arise for other protected goods from omission. (E.g., not taking a drug because of its dangerous side effects is in itself a risk). The idea that all risks can be avoided is therefore an illusion.

[xxvii] However, this does not apply to genetic testing, which could have manifold social consequences (Stemerding, 1996; Mikl and Wild, forthcoming).

[xxviii] In a report on the problems of field releases of transgenic plants in centres of origin or diversity, Alvarez-Morales, a Mexican plant geneticist, put it into the simple words:"The greater the need, the more risk one is willing to take to satisfy the need....If biotechnology offers a chance to alleviate some of the social or economic problems that many country already face, the risks may not seem very important..." (Alvarez-Morales, 1994)

[xxix] With regard to "experience", minor misunderstandings occur: Here, reference is made not to experience with "genetic engineering" or with "transgenic plants" in general (as is frequently argued, but to knowledge of the relevant modified organisms in their ecological context, which allows consistent statements on their behaviour.

The fact that many relevant facts that would be required for such a risk assessment of transgenic plants are unknown, even for traditional plants, was shown recently (Torgersen, 1996).

[xxx] Relevant research only was undertaken relatively recently, at least in a focussed way, when there arose a desperate need for standards of comparison. For example, the question how far oilseed rape pollen is able to fly never was of particular scientific importance, however, in connection with risk assessment of trangenic rape, it became highly relevant (Crawley, 1992). In a slightly polemic wording, one could say that biosafety research gained its recent importance mainly because there was a need to show that trangenic organisms are safe.

[xxxi] It was probably not Meyer-Abich's intention that the recommendations from his project should end up filed away somewhere after the change of government in Germany (Renn, 1994: 39).

[xxxii] Wolfgang van den Daele was one of the expert members of the Enquiry Commission on Assessing the Risks of Genetic Engineering of the German Bundestag in 1987 (Deutscher Bundestag, 1987), ultimately leading to the formulation of the German genetic engineering law in 1990.

[xxxiii] There are numerous attempts to implement participation in various areas of technology policy, especially in the field of biotechnology, and we are aware that the choice is highly subjective. For example, v. Schomberg (v. Schomberg, forthcoming) recently made an interesting proposal to implement an instrument for the (environmental) long-term planning with broad participation, and to take up the precautionary principle into the constitution.

[xxxiv] In the following: "C&B"

[xxxv] Due to numerous minority governments in the last decades, the real influence of the Danish parliament is much higher than that of the Austrian parliament, for example (Danish member of parliament K. Rahbak-Meller, pers. letter).

[xxxvi] See the proposal by Schomberg to set up institutions similar to the social partnership for solving conflicts in risk controversies (Schomberg, 1995: 26).

[xxxvii] Christian Brünner, University of Graz, pers. letter. Brünner was scientific speaker of the enquiry commission as the leader of the conservative People's Party group.