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TA as advice – the consultative dimension



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## **Learning processes: Problems of acceptance of TA among political decision-makers**

### **1. The function of TA for policy development**

Although political decision-makers are only one of the target groups of TA analyses, this target group will be the focus of the following considerations. Normatively speaking, the function of TA in the decision-making process is to increase the substantive rationality of political decisions by providing a broader information base. The substantive rationality of a decision lies in its ability to produce a desired effect at a reasonable cost and without negative side effects that exceed the value of the desired goal. TA is not a unique tool in this context, as forecasting techniques, cost-benefit analysis, policy analysis, and evaluation research have also been developed for the same purpose. In fact, TA merely combines elements of several of these analytical approaches; it is characterized only by its object, namely technology. There is no need to go into detail here about the elements of TA and the information it can provide to decision-makers; nor is it necessary to specify here for which decisions this information is important. However, it should be emphasized that the goal of political control of technological development associated with TA is particularly difficult to achieve. This is at least partly due to constitutional conditions that limit the possibilities for legal state intervention: Both the production and the use of technological innovations are largely left to the decisions of autonomous subsystems of society, e.g., the scientific and economic systems. Under these conditions, state control is mainly relegated to the use of indirect instruments such as the setting of positive and negative incentives and selective support measures. Of course, this does not mean that TA can provide decision-makers with less relevant information than, for example, policy studies do for policy areas where direct state intervention is more common, but it does have consequences for the way in which TA is applied in the policy process – and, incidentally, for the normative definition of its target groups: The relevance of the requirement that TA results should be made accessible to the general public is at least partly based on this fact.

## 2. The context of TA use: the nature of political rationality

In discussions about the usefulness of various approaches to increasing the rationality of policy decisions – TA included – it is a common argument that their actual influence falls far short of their potential impact – and the experience with Planning, Programming, and Budgeting Systems (PPBS) in particular clearly supports this argument. As far as TA is concerned, this neglect is often attributed to its largely undisputed shortcomings and inherent methodological weaknesses. Consequently, greater acceptance of TA by decision-makers appears to be achievable primarily only by improving the quality of this advisory instrument. However, this is at least partly an illusion: The ability of TA to rationalize political decision-making processes is not only, and not even primarily, limited by qualitative deficiencies, but rather by the fact that substantial rationality ranks low on the scale of criteria for political decision-making.

It is a commonplace of political science that politics is not primarily about finding effective solutions to problems, but rather about gaining and maintaining power. All actual political decisions are subject to certain political constraints. The criterion of political rationality, which is geared toward political survival, determines the general rationality of a political decision. Avoiding losses of solidarity, being able to demonstrate visible success, or at least receiving applause for oneself, one's party, or the current government are decidedly rational goals of action with regard to the general goal of political survival, and accordingly political decision-makers also focus their attention on this (Mayntz/Scharf 1975, p. 91). Their primary interest when assessing proposals for action is therefore often directed toward their likely consequences for the current balance of power between the parties, parliamentary groups, political groups, and individual office holders.

However, the ability of politicians to act substantially rationally in the sense defined above is not only limited by personal political survival strategies. Another important criterion is the practical feasibility of measures, i.e., they must be able to find support among those actors who are involved in their formulation and subsequent implementation. This is why policy development processes often involve compromises between divergent interest groups, without whose support or at least acquiescence a policy could never be implemented – and all too often such compromises are paid for at the price of knowingly reducing the effectiveness and problem-solving capacity of such projects. In this context, the head of the French Commissariat au Plan, Masse (1981, p. 40), once reported that a lack of consensus between important players in economic policy had forced

him to forego what he considered to be an optimal solution according to objective standards and to seek an acceptable compromise on the basis of the existing, restrictive institutional framework conditions; impressive further examples could certainly also be cited from the field of environmental protection.

In addition to political feasibility, financial constraints play an important role in decision-making processes. The cost-benefit ratio of a project is often less decisive than the ability of its advocates to assertively demand the necessary funds. This in turn depends less on the economic situation of a state and the overall size of its budget than on the applicant's position of power and the assumed (not necessarily objectively proven) urgency of a project. In this context, it is often helpful for the implementation of a political program if a given situation can be conceptually defined as a crisis, or if a dramatic incident provokes the general feeling that something must be done (Russ-Mohl 1981, pp. 83–85). Again, it is obvious that questions of power play an important role in such considerations. Whether a political decision really meets the standards of substantial rationality – defined above with reference to the criteria of effective problem solving, cost efficiency, and the avoidance of negative side effects – is sometimes only considered last, but never or rarely first, in the concrete case of a decision. This could only change if the proof of having made effective problem-solving decisions were also a condition for short-term political success. However, it would be wrong to criticize this state of affairs as opportunistic and to blame politicians' lack of morality for it. The extraordinary importance of the aforementioned criteria – ensuring political survival and the political enforceability of measures – for political decisions is a direct consequence of the structure of parliamentary democracies with their regular elections, limited terms of office, the dependence of governments on parliamentary majorities, and the dependence of incumbents on electoral success. Political support is the most important prerequisite for a policy (and a politician), because without this support there can be no policy. Finally, the weight of financial considerations in the political decision-making process is ensured and reinforced by institutional requirements such as the veto power granted to the finance minister in the cabinet and his powers vis-à-vis other ministries.

In reality, therefore, the ideal of rational policy decisions is not missed primarily because of cognitive and analytical deficits, but is rather due to the orientation patterns that generally prevail among politicians, which mean that little attention is paid to precisely the information that policy analyses in general and TA in particular provide – e.g., information about the effects, consequences, and relative costs of alternative possible measures. Moreover, this substantial

rationality is particularly irrelevant where purely symbolic policy is concerned. If there is no intention from the outset to change a given problem situation, or if the purpose of a political decision is already achieved when parts of the public or the political clientele come to the conclusion that the government is committed to doing the right thing, then it is obviously uninteresting from this perspective what the consequences would be if the decision were actually put into practice. Consensus building, not problem solving, is the goal of such policy decisions, and here opinion polls that inform the decision-maker of what the public wants to hear are far more important than policy analyses that carefully work out the multiple effects of the available decision alternatives.

Finally, there are also cases in which substantial rationality tends to argue against making policy decisions on the basis of the greatest possible knowledge about technical and social development processes and the probable effects of possible alternative courses of action. Given our notoriously deficient knowledge of the conditions that influence the outcomes of a policy, it can sometimes be quite appropriate not to want to act on the basis of systematic knowledge, but to pursue a trial-and-error approach in which the details of the initial assumptions on which they are based do not play a major role, insofar as subsequent program modifications based on experience are provided for in this concept from the outset. This view essentially corresponds to Lindblom's incrementalism, which he understood not only as a critical description of political practice, but also as a prescriptive model (Lindblom 1965). Evaluation, feedback, and flexible adjustments allow for a learning process, and this can indeed be understood as a rational approach; the more uncertain and unsettled our knowledge of factual contexts, the riskier our predictions.

### 3. Consequences for the use of TA

If the expectation that TA should improve the substantive rationality of political decisions is based on a rationalist misunderstanding of the nature of political decision-making processes, then it may be appropriate to briefly consider how TA is actually used by decision-makers. As an instrument of scientific policy advice, the relationship of TA to policy is also fraught with the wide range of communication problems, priority conflicts, and ambiguities that generally characterize relations between scientific advisors and policymakers (Mayntz 1977, 1980). According to a widespread assumption, science provides objective information that should enable decision-makers to choose the best possible decisions from their own

value point of view, i.e., the most cost-effective way to achieve a given policy goal.<sup>1</sup> This common conception of the relationship between TA as a form of scientific advice and policy is based on the assumption that the knowledge provided by TA is or should be used, and that only cognitive deficits may limit this use. This assumption is wrong for various reasons.

The offer to provide politicians with useful information is by no means as seemingly modest as it may sound, because in fact political influence is claimed with this advice to an extent that must almost inevitably lead to a conflict between the people and institutions that produce TA and the politicians who, by virtue of their office, see political influence as their privilege. Such conflicts are already inherent in some definitions of TA, such as Bartoča's:

It can be defined as a systematic analysis, where all impacts and implications, direct or indirect, real or potential, present and future, beneficial or detrimental, of a technology are defined, evaluated and measured, and the cause-effect relationships identified. The results of a technology assessment should include alternative solutions to a problem, ranked according to their social cost-benefits, and recommendations for policy changes, control or mitigation options, or new initiatives (Bartoča 1973, p. 339).

Quite apart from the fact that this definition is clearly utopian, it is also technocratic, i.e., it contains a *de facto* claim to power by the TA producers. Confronted with this claim, any politician who does not firmly believe in the superiority of TA and is willing to follow its recommendations will rise up to fight against this threat to their legitimate functions.

A second reason why the availability and quality of TA analyses do not determine the extent to which they are implemented in the political process lies in the normative implications of these assessments. Politicians who do not share the value premises that underlie the evaluative component of a technology assessment will reject it – not because of its cognitive content, but because of the invitational nature of such studies to adopt the values on which it is based. Even where an attempt is made to clearly separate prognosis and evaluation, there is a tendency to reject the analytical content of a study along with the recommendations derived from it.<sup>2</sup>

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1 The claim of TA is perhaps even more immodest, as it involves not only the prediction but also the evaluation of technical developments and their consequences in relation to certain *social* value patterns.

*Editors's note:* See also Chapter 6 by Gotthard Bechmann.

2 The same applies to Böhret and Franz's assessment of various forms of institutionalization. The models of institutions that rank first in their list do so because of the great

The third and most important reason why TA, insofar as it expands our factual knowledge (leaving aside cases in which this happens only incompletely), does not directly determine political action lies in the dominance of political rationality in the process of policy development, as already discussed. In such a context, TA is only used if and to the extent that it serves political purposes, and accordingly TA will tend to be instrumentalized in the sense that, instead of being the basis for decisions, it is used to justify decisions (or non-decisions). In this respect, TA shares the fate of “policy research” and scientific advice on policy in general. In an interesting German study analyzing the use of scientific advice by senior civil servants in state administration, it is reported that two thirds of the civil servants interviewed explicitly pointed out the political functions of scientific advice (Friedrich 1970, pp. 161–189). The most frequently cited function of expert opinions was to be able to scientifically justify decisions (or non-decisions) that had already been made or were about to be made. According to this study, the purpose of being provided with “objective reasons for rejecting undesirable demands” is also an important political motive for obtaining scientific opinions, since in this way, for example, pressure from organized interests can be counteracted.

On the other hand, in those cases where the results of a TA study suggest that a measure under consideration should be abandoned, this recommendation is rarely followed. The ineffectiveness of scientific advice often results from the fact that advisors take the publicly declared objectives of a particular policy seriously, while the real political motives behind it may be quite different. In such a case, TA simply misses the point – just as it would be wrong to try to persuade a young man not to go swimming because the weather is not as good as he thinks it is, when his real intention is not to cool off but to meet a young woman in a swimming pool.

While aspects of policy advice were addressed in general in the previous section, some particular difficulties arise with regard to the implementation of TA results, which can be traced back to the special subject area of TA, namely technology. In the present day, decisions that have to be made in technology policy are often particularly politicized in the sense that they are extremely controversial and the controversies are linked to fundamental value decisions. It is not possible at this point to attempt to analyze the reasons for what is often described as

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importance attributed to TA *for the public*. If someone does not agree with the normative premise that this is one of the most important goals of TA, they will tend to reject the entire analysis (Böhret/Franz 1982).

a fundamental crisis of acceptance of science and technology. However, it is obvious that with the growing politicization of a field of action, with the increase in public attention, and the associated increase in emotional influencing factors, the chance of using TA to place the discussion on a more rational basis decreases – and does not increase, as one might assume. Where the choice of a particular policy becomes or seems to become a matter of life or death (or at least of jobs or unemployment) from the point of view of many people, i.e., where a lot depends on the validity of a forecast, the willingness to accept TA results without further ado is low.

In this context, the methodological uncertainties and weaknesses of TA also play an important role; not because they diminish the information value of TA per se, but because they can easily be used to justify the rejection of TA results and recommendations. In general, the results of policy research are never questioned as to their methodological foundations by those who find their results politically useful; but even more so by those who are looking for a good reason to reject the research results as flawed or irrelevant (Derlien 1976). However, to the extent that TA increasingly includes the assessment of social and societal consequences of technological innovations, the objective uncertainties in the foresight of technological developments and their consequences grow (Goldberg 1980). There is no reason to underestimate these methodological problems. However, I would like to make it clear that this cognitive uncertainty is often a welcome argument in the political context for dismissing TA and its results as irrelevant.

#### **4. Measures to extend the influence of TA**

So far, I have tried to show that the political nature of policy decisions limits the possible rationalizing effects of TA to a greater extent than its methodological weaknesses and cognitive uncertainties. But while there can be no doubt about this finding, it is equally true that, in the absence of reliable information, even the most motivated politician cannot base his choice on a careful assessment of alternatives. Conversely, the availability of information does not guarantee its use.<sup>3</sup> Consequently, the question arises as to what – if anything – can be done to increase the practical significance of TA for politics. To this end, it is certainly

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3 There is something of an inverse relationship between benefit and availability in that knowledge that TA results are needed, can stimulate their production, but conversely only repeated practical application can lead to the urgently needed methodological improvement of TA.

necessary to improve the methodological foundations of TA and thus increase the truth content and compelling persuasiveness of its results and conclusions; however, this is not enough. Even more important is the creation of an institutional framework that can generate pressure to ensure both the provision of TA results and their consideration in political decision-making processes. The influence of TA can be increased not only by the mere availability of TA studies, but also by the – legally and politically anchored – necessity that these must also be taken into account in decisions on the development and application of technologies. Incidentally, this applies to all scientific methods that have been developed in the last 20 years to increase the substantial rationality of policy decisions.

The problem with trying to extend the influence of TA is that the results of TA are not neutral to existing power structures within and outside the political system. By their very nature and structure, TA studies explicitly or at least implicitly provide recommendations for action, and these in turn will always selectively favor a particular industry sector, consumer group, etc.; accordingly, options for action based on TA information will have proponents and opponents within the political system. Consequently, it is completely unrealistic to expect the tension-free climate for TA that would be necessary for purely scientific (or cognitive) arguments to dominate and determine action. TA therefore needs advocates with sufficient power within the political system.

A consideration of the various practical possibilities for institutionalizing intelligent political decision-making processes with instruments such as TA could start with the distinction between procedural and organizational institutionalization. In the first case, the use of methods such as TA or cost-benefit analyses would either be prescribed by law or become a procedural norm in the legislative process. Well-known examples of procedural institutionalization are mandatory hearings, legal regulations on the evaluation of program results and the presentation of this evaluation to parliament, “sunset legislation,” “zero-base budgeting,” or the introduction of a “regulatory budget.” In the case of organizational institutionalization, special institutions for the preparation of TA studies are created, or this task is transferred to existing institutions. The fundamental decisions to be made here concern the structural embedding of such an institution (with the legislative or executive branch or institutionally independent) and the degree of its independence (full integration, e.g., as a department within a ministry, partial integration, e.g., in the form of a scientific staff or a commission directly linked to specific institutions such as parliament, the government, or a specific ministry; or complete autonomy). Other important decisions related to the organizational institutionalization of TA concern, for example, the nature of the control of such an

institution (e.g., political, scientific, or both) and the extent to which substantive scientific work is carried out by the institution itself or contracted out (Böhret/Franz 1983). None of these latter aspects is free of political implications; this also applies to the different political contextual conditions for the institutional and procedural anchoring of TA functions in different countries, which will be discussed as a final point.

## **5. National differences and their consequences for TA**

The institutional and procedural arrangements that have been developed in various countries in connection with the introduction of cost-benefit analyses, policy studies, forecasts, and occasionally even TA offer a broad spectrum of models. To what extent is it possible to generalize the experience gained in this way and to adopt promising forms of institutionalization from other countries? Of course, foreign experience with the problem of harnessing TA can be generalized to the extent that the use of analytical knowledge in policy development is inherent to the nature of Western parliamentary democracies. However, the country-specific differences in the relative distribution of power and the roles played by the main actors in the political system are important for the selection of an adequate and promising form of institutionalization of TA.

The indirect question posed here as to whether there is a single correct path or whether promising solutions should be adapted to the specific national political context addresses the problem of the influence of existing national “political cultures.” I will not spend much time here trying to define this elusive concept of “political culture” or in what Max Kaase (1982) so vividly described as trying to nail a pudding to the wall; very often, however, the term “political culture” is used to refer to the attitudes of the population toward the political system. In contrast to this, in a recent five-nation study (Feick et al. 1982), which sheds light on the influence of specific national contexts on government action programs developed to solve quite identical problems, we applied a different concept, focusing in particular on the institutional framework, decision-making styles, and the intervention philosophy of top politicians. In any case, these factors in the respective national context must be taken into account to a large extent in the search for effective institutionalization options for TA.

The obviously most important factor in the national context is the distribution of power among those actors who play a more or less important role in the political decision-making process. Although the main types of relevant actors

can be found in all Western democracies, their function in the political process can vary considerably, as can be seen, for example, in the different political influence of national parliaments and state administrations. Systematic comparisons have shown, for example, the particularly important role of parliament in the policy process in Italy, where most draft legislation is drawn up by parliamentary commissions and not, as is the case in the Federal Republic of Germany, by the ministerial bureaucracy.<sup>4</sup> It may therefore follow that in Italy a TA institution should be located in the legislative rather than the executive branch. In any case, with regard to the goal of integrating TA into the political process as effectively as possible, the negative conclusion can be drawn that an institutionalization of TA at the upper level of state administration would be less effective in Italy than in Germany, where the ministerial bureaucracy plays an important role in drafting legislation.<sup>5</sup>

TA institutions that are tailored to the information needs of parliament can hardly escape the danger of being drawn into political controversies between the governing and opposition parties, and even between different factions or currents within the main parties. It is inevitable that the actions of parliamentarians, which are strongly influenced by party political positions, must reinforce tendencies to instrumentalize TA, and may even prevent TA studies from being carried out where it is foreseeable that their results could benefit a weaker party or parliamentary group. The conclusion that can be drawn from this, at least for the time being, is that TA generally has a better chance in countries where the ministerial bureaucracy plays an important role in policy development. Despite their politicization, and despite their willingness to pay attention to political restrictions that determine the success or failure of administrative initiatives, top officials are often far more inclined than politicians to pay attention to the substantive rationality of a bill or other proposal because of their training and orientation.

In the case of the institutional integration of TA into the state administration, however, it must also be ensured that no competitive situation arises that blocks the potential influence of this institution. In the Federal Republic of Germany, for example, the federal ministries have a high degree of autonomy vis-à-vis the political management level. A TA institution that is to gain influence on policymaking and at the same time is located parallel to the existing ministerial

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4 On this point, in addition to the above-mentioned research report, see also the country comparisons in Rose/Suleiman 1980 and Suleiman 1984.

5 *Editors' note:* Please be aware that these statements mirror the situation in the 1980s. There may have been many changes since then.

organization – i.e., not integrated into it – would be perceived here as an attempt to impair the autonomy of the responsible ministry or ministries. The alternative solution of creating an institution within the remit of the ministry responsible for technology policy could be more promising, but would not be able to avoid all conflicts, as TA also affects various aspects of economic policy, among other things.

Parliament, the political executive, and the ministerial bureaucracy are not the only relevant players in policymaking. In some countries, extra-parliamentary commissions have traditionally played a central role in drafting legislation – in the UK, for example, the well-known Royal Commissions. However, if such commissions were set up in other countries and given the scientific authority and resources, they would not necessarily have the same importance for policy development. Attempts to influence policy formation processes on the part of such a commission would be subject to specific restrictions within an existing network of institutions as long as they are not regarded as a recognized tradition, but rather as usurpatory. On the other hand, where advisory and research commissions already play an important role in the political process, i.e., where the power of such actors is supported by a specific political style, namely the tradition of consultation, they can also be used as a promising form of TA institutionalization.

Commissions, but also experts who perform advisory functions outside the political system in the narrower sense, may play a greater or lesser role in various national contexts, but they are rarely completely absent. However, there is also the interesting case of national advisory institutions which, deeply rooted in the respective national political and advisory culture, have no parallel in other countries and can hardly serve as a model for other countries. Böhret and Franz (1982, p. 220) mention, for example, the Swedish Secretariat for Futures Studies [since 1987: Institute for Futures Studies], an important and apparently successful institute in dealing with TA in Sweden, which is part of a research administration that has no direct equivalent in other countries. In the Federal Republic of Germany, some of the TA-related information and consultancy services provided by the Swedish institute are fulfilled by the German Research Foundation (DFG). However, a TA institution affiliated with the DFG would probably have relatively little political influence due to its carefully maintained distance from politics, which conversely limits its institutional integration with the political system.

Another national characteristic that must be taken into account when considering the appropriate institutionalization of TA is the degree of centralization of state and political decision-making structures. The term centralization can be given two different meanings: Structurally, it refers to the extent of political

decentralization to subordinate territorial authorities such as states and municipalities; procedurally, it refers to the extent to which government regulations are either formulated down to the last detail at the central level, or enforcement bodies at lower levels are given leeway in their application. If it is crucial for TA institutions to be in direct contact with the important actors in the political process, it follows that the higher the degree of centralization in the sense of one or even both of the above meanings, the more influential TA institutions are at the national level. Where important political decision-making processes are decentralized, TA should of course also be anchored at the corresponding lower levels. If important technical development decisions are even made at the local level, it is difficult to establish any form of state TA institutionalization that could exert influence on the actors there. Such an institution would have to limit itself mainly to pure information strategies.

A final aspect of the contextual conditions to be considered for the institutionalization of TA is the consideration of the prevailing policy styles. In the above-mentioned studies (cf. Feick et al. 1982), it was shown that different policy styles can be found in different European countries, whereby the most important distinction of interest here concerns the importance of consultation and deliberation as well as the participation of interest and reference groups in policymaking. There is a strong tradition of consultation not only in the UK, but also in the US. The large, very flexible groups of advisors, which at times work at the highest level of the American executive (with the President, but also with the departmental ministers) and are affiliated there, have no equivalent in countries such as the Federal Republic of Germany. The existence of such advisory forms in turn supports and strengthens the willingness of decision-makers to involve external advisors in their decision-making processes. Only against the background that policy studies and scientific advisory groups have traditionally played a major role in the American political process can it be understood that an entire research industry has been able to develop there. Such a tradition certainly also offers good conditions for the establishment of independent TA institutions outside the administration. Similarly, it should also be considered whether societal interest groups are firmly integrated into the policymaking process; they should then not only be regarded as another group of potentially influential addressees of TA information; rather, with reference to the existing organizational patterns of consultation and decision-making, it should often be obvious to include such representatives of interest groups, if a TA institution is to be created, in the staffing of its supervisory bodies with the aim of broadening the basis of support for its work.

To summarize, we can state that the political acceptance of TA is determined by two different, equally important facts in the political context: First, the application of TA is less dependent on analytical quality than on political implications, and second, the influence TA can have depends on the location of its institutional placement within a specific national political system. The acceptance of TA is a spectacle played out on the stage of politics – and this is one of those facts of life that scientists must accept.

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