

1.

Prevention and Intervention in the Analytical Perspective of Guidance

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Introduction

The words 'prevention' and 'intervention' are currently widely used in economic and political texts, and scientific projects which claim to increase our possibilities for prevention and intervention can count on (almost) universal acclaim. A special research unit, however, whose goal is the study of possibilities for avoiding "disorders, limitations and damage in the development of children and adolescents" (SFB 227, 1985, p. 17) with the help of preventive measures, and for abolishing the above-mentioned factors with the help of intervention measures, cannot and must not rest on the vague approval toward these intended goals. It is, of course, possible to gather and evaluate systematic experience in dealing with individual social problems and measures without considering the general nature of the actions which are studied. And it is this type of research which supplies immediately applicable knowledge to those working on concrete problems. This type of applied research, however, is based, in turn, on foundations which have to be clarified in order to improve our knowledge about the *conditions of success* of prevention and intervention.

Obviously, applied research needs substantial knowledge: A prerequisite for successful measures is to have a previous knowledge about the object which is to be influenced. Therefore, most research in our area of interest is focused on the factors which, for instance, *explain* problematic behavior or the genesis of emotional disorders. A valid causal model, it is assumed, will indicate the 'levers' by which effective prevention and intervention may take place. This is, however, only a preliminary step to applied research in the field of prevention or intervention, for the *causal* model does not allow for valid conclusions about the effects of specific actions which aim to use the 'levers', i.e., to modify situational or even dispositional factors for the persons concerned. We need a second model of thought which may be called an *action model* and whose content is directed toward the explanation of the operating forms of preventive or interventive behavior and the conditions of their success.

Action models, however, are not simply tautological transformations of causal models, as it is often assumed by the philosophy of science. Action always happens in situations, their success depends upon the way the action is performed by specific actors in specific

situations. Thus *applied research has not only a technical but also a pragmatic aspect*: it deals with a certain type of reality and tries to modify it; this is precisely what is meant by the terms 'prevention' and 'intervention'. Research on the conditions under which measures are effective, the evaluation of implemented measures and their impacts are only possible in dealing concretely with these measures. This is easily understandable insofar as these can be created and applied in the laboratory. But even in field experiments, and especially when dealing with complex measures of political and social intervention, reliable research results can only be expected, if the researcher has a detailed knowledge, not only concerning intentions and outcomes, but also concerning the inner structure of the measures in question and the organizational and personal conditions under which they function. In the ideal situation, (from the researcher's point of view!) he is already involved in the initial stage of the planning and implementation of the measures – in other words, he is directly programming the intervention. Whenever this is not possible, he will, however, at least have to reconstruct the way in which measures become effective *ex post*.

It was the aim of our symposium to raise consciousness on this pragmatic aspect of applied research, and to study it systematically. Researchers, as other people, experience the pragmatic aspects of their work as part of a *daily routine*, that is, the conditions and implications of their work are generally taken for granted, not worthy of further speculation (see Garfinkel, 1964; Schütz and Luckmann, 1975). Scientific innovations too, are made on the basis of specific organizational conditions and routines which are taken for granted – and which, as the sociology of science teaches us, often have a considerable influence on the contents and the direction of research results (see, e.g., Knorr-Cetina, 1981). A concentrated effort must therefore be made for us to make these pragmatic aspects of our work the object of scientific reflection. To some researchers in the applied sciences, this not only seems superfluous, but also creates uncertainty.

Why then should we make this effort? It is my objective in this paper to propose answers to this question – and thus to develop reasons and perspectives for this volume.

In the first part, I would like to explain why the questions involved have a much greater importance for intervention research in the social sciences than for research in technological development which is based on the natural sciences. In brief, our thesis is as follows: *the systematic consideration of the pragmatic aspects of the intervention process have a constitutive (and not merely a methodological) implication for research in the social sciences.*

In the second part, the 'Logic of Social Intervention' will be developed in the form of a dispute with the ruling, causal-analytical model of reasoning, on the one hand, and those scientific positions which claim the objectionableness, if not the impossibility, of social prevention and intervention, on the other.

In the last part, I will briefly refer to some recent approaches to overcome the problems which result from an analysis of the logic of social intervention.

1. The Non – Technological Aspects of Social Prevention and Intervention

Whenever we speak of 'prevention' or 'intervention' we are simultaneously postulating a specific interest in *knowledge* about the subject and a specific interest in *action*. Usually the latter comes first: specific possibilities (which are designated as being 'risks' or 'dangers'), and certain facts (which are designated as being 'limitations' or 'damage') are to be influenced, prevented, or abolished. In this way, we all show a behavior in our daily lives which is either preventive or interventive, we either attempt to predict the future, or to react to the present depending on our preferences, interests and intentions. In our daily lives, however, we do *not*, as a rule, call these activities *prevention* and *intervention*; these terms already imply a certain level of abstraction regarding our daily activities. To be exact, what we are dealing with here are already *categories for observing actions*, and not for the actions themselves. This is the reason why we can leave them aside in individual cases of practical intervention and prevention research, and one must make a special effort to really perceive what is happening here.

We therefore use the terms 'prevention' and 'intervention' to characterize specific, abstract forms of intentional interaction with reality whose meaning must now be more closely defined. In doing so, we cannot adhere to any established scientific language: because, for example, the relatively well-known distinction between primary, secondary and tertiary prevention (Caplan, 1964) also encompasses the area which we call intervention. From an action theoretical perspective, one may distinguish between preventive measures (that is, measures which are directed toward eliminating *potential dangers*), corrective measures (those which are directed toward influencing the development of a dangerous event), and compensatory measures (which aim at limiting or abolishing repercussions of a damaging event) (Kaufmann, 1973, pp. 264 ff.). In the Special Research Unit we have agreed on the following distinction between prevention and intervention: the term *prevention* is used for measures which limit or avoid future disturbance, interference or damage. The term *intervention* designates measures for reducing or abolishing existing disturbance, interference or damage in the development of children and adolescents (SFB 227, 1985, p. 21).

As far as a definite problem area and field of action are concerned, which are separated according to analytical viewpoints, all of these distinctions are useful and helpful. On the whole, they focus on different time periods or places for intervening in an imaginary causal chain or an imaginary action: we usually speak of prevention when the action focuses on the constellation of conditions which are seen as being the cause for future disturbance. We speak of intervention in those cases in which an already existing problematical development is to be corrected through specific action. From the analytical perspective of guidance this distinction is not decisive, for in both cases we are dealing

with a specific action in states and events which are already constituted, whose properties also decide the impact of the action. In the following text, we therefore speak of social intervention under which preventive and corrective measures are subsumed.

In all of these cases we are dealing with (1) an imaginary actor who acts on the basis of (2) specific *intentions* and (3) *specific assumptions about the effects of his/her action*, and with (4) *specific measures* in a (5) *defined situation* in order to change it. Thus all of the elements of a *general* model of goal-directed rational action are named, which are useful for reconstructing both preventive and interventive measures and which will serve as a basis for further considerations.

This well-known theoretical model can be equally applied in the analysis of technical, economic, political, social or therapeutic intervention, and it can be found – implicitly – (as a pragmatic prerequisite) in the area of all applied sciences. Explicit formulations, however, often show a characteristic narrowness: for example, in political economy we speak of the conceptual elements *goal*, *situation* and *measures*, and see our own role as one of providing knowledge about the efficiency and the effectivity of measures for attaining a goal. The personal characteristics of the actor for whom this knowledge is considered to be useful are, however, not taken into consideration. When one uses the word 'goal', one assumes that the actor's intentions are constant and known, so that the researcher can take them for granted as a starting point of his/her inquiry. The 'situation' is viewed as given, that is, one assumes that one possesses an objective knowledge of reality. As a rule, however, this so-called objective knowledge consists merely of a discipline-specific *reconstruction* of reality which, according to the recent discussion in epistemology, remains *always ambiguous*. By these assumptions the model of goal-directed action is furtively turned into a model of instrumentally-rational action. To what extent specific measures can be used to fulfill specific intentions, if and under which conditions instrumentally-rational action is possible, these are the questions which must be left open in the analytical perspective of guidance.

The *successful* implementation of an intervening actor's intentions requires

- that his/her definition of the situation to be dealt with should take into consideration the characteristic features of reality in all relevant points;
- that his/her assessments of possible effects of his/her measures should be correct;
- that s/he should have at his/her disposal all of the resources necessary for the measures to be appropriately effective.

From these conditions we can deduce that, as far as the actors are concerned, they (1) must be aware of their own intentions, (2) must be capable of applying relevant scientific information, and (3) possess a certain amount of resources and authority for action relative to the situation in question.

If we examine the situation of the applied sciences in this context, a distinction of strategic importance becomes apparent: *Can the researcher himself be an actor, that is, one who takes action, or is he forced to rely on a third party, on whom he has little or no influence, in order to realize the intervention*¹. One extreme case of this is *technical research done in the laboratory* by natural scientists, where the researchers, after jointly deciding on a specific research goal and having sufficient resources, can experiment freely with inorganic material. In this case, it is possible to determine in a technically unequivocal way the situation in which one intends to get involved; also, the measures themselves which one uses when getting involved, can be fully controlled. The researcher has power, he is mastering the situation. E.g., the physical and chemical models of thought as well as their technical apparatus have today reached a degree of precision which allows for a very precise division between constants and variables, so that experimental results now possess a high degree of predictability also for application in praxis—relevant contexts. In this situation, the researcher has good reasons for claiming that he, as an actor, is in full control of the situation, and that the experimental results achieved can be reproduced by others; furthermore, the knowledge derived from these experiments can also be generally applied.

The other extreme case is *research in the social sciences which attempts to discover the effects of political action*. When facing a political actor (for example a political party, a parliament or a particular branch of administration), the researcher is fundamentally powerless. And even in those areas where he may have acquired influence (because of a political interest in potential research results, for example), he must always live with the fact that, as a result of a change in political opportunities or priorities, a particular measure studied or initiated by him is discontinued, or that he is denied access to certain information. The political measures in question can therefore not be carried out by him (neither experimentally nor practically), but instead he depends on powerful third-party actors and their intentions, who are motivated by priorities which differ completely from those of the researcher. Moreover, these measures typically intervene in situations which are, in general, uncontrollable, thus leading to the well-known difficulties when assessing the results of the evaluation of political measures.

The measures with which we are concerned in our work with children and adolescents at the Special Research Unit lie between these two extremes – with varying distances one from the other. E.g., the project "*Early Intervention with Handicapped Children*", directed by Michael Bambring, rests on a secure definition of the situation to be analyzed (SFB 227, 1985, pp. 183 ff.). The theory of organic brain development, upon which it is based, is well proven, and the amount of damage to vision can be clearly determined. The intervening measure – an ultrasonic machine for stimulating auditive spatial awareness in blind children – is easy to use and can be controlled by the researcher to a large extent. Also, the intentions – namely, to compensate for the deficit of spatial orientation caused by the damage to vision – can be operationalized. Furthermore, these intentions seem to be easily capable of finding a consensus. This is especially important because in this project the researchers also depend on the participation of third parties, on

whom they only have a limited influence – namely, the parents and their children. According to our theoretical model, the parents must be regarded as being the actors, the intervention is decided on through the cooperation between researchers and parents; the participation of the parents is considered to be decisive, if the program is to be successful. The children, with their own personalities, their liveliness and their unpredictability, are a part of the situation in which one is intervening. In contrast to the substances and objects of laboratory research, they neither keep still nor remain unchanged over time without intervention. Ultimately, the 'objects' of research which we are dealing with here are people whom our culture has accredited with the character of 'subjects', so that here already any measure applied must be justified normatively, a justification which rightly limits the researcher's freedom. At the same time, however, one must not overlook the fact that children and adolescents are, *de facto*, in an inferior position vis-à-vis the researcher compared to the adults. On the one hand, this facilitates the technical research process, but on the other hand, it increases the amount of justification necessary for the interventions in question.

For most other projects of the Special Research Unit, one could show more clearly than with this example that the research process cannot be adequately described as the implementation of certain technically controllable measures. Instead, the success of the research project depends in equal amounts on the *social competence* of the researchers themselves on their own, highly personal, style of intervention. And it also depends on the readiness of the people for whom the intervention is meant – a readiness which cannot be achieved by force. *The measures do not intervene in a stable, known situation, but rather in a reactive 'field of intervention' whose structures are only partly known.*

The practical action of the researcher can, in itself, be understood here as a social intervention which is aimed at *people*, and therefore requires special justification. For this reason, the systematic consideration of the pragmatic aspects of the intervention process are of *constitutive* importance for social prevention and intervention research.

2. The Logic of Social Intervention

Above, a general model of social intervention has already been presented, and the importance of the personality of the intervening actor, as well as the potential reaction of the person who is the target of the measures, has been emphasized. These two aspects are regularly underestimated in traditional prevention and intervention research. Before we draw conclusions from this, however, it is necessary to examine more closely the traditional logic of social intervention and its limitations.

The traditional scientific model of prevention and intervention research can be summarized as follows:

1. Certain 'givens' (e.g. behaviors or states) are defined as being problematic: One defines a problem.
2. One tries to discover the conditions of our causes for these givens: One analyzes the problem.
3. One formulates specific goals or intentions to change these givens or their conditions: One defines a target.
4. One searches for measures that seem appropriate to bring about these changes: One designs a program.
5. One applies these kinds of measures and observes their effects: One implements and evaluates the program.
6. One draws conclusions from these observations, which, if they do not correspond to the original hypothesis, can lead either to a change in the way the problem is perceived, or to a modification of the goals of intervention and prevention, or to a modification of the measures which were applied.

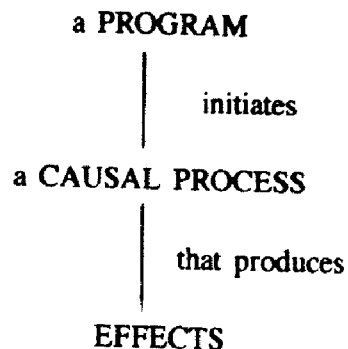
This theoretical model outlines the '*logic of social intervention*', which can be found under different names in the argumentative context of the applied human and social sciences. It constitutes a rational reconstruction of practical intervention processes from the perspective of the observer, and can therefore be used to criticize thoughtless or spontaneous intervention in everyday practice, for often a clear perception of the problem, and consistent attempts to alleviate it, are lacking in everyday practice. Most important of all, however, is the lack of a systematic observation of effects and of inductive learning processes to improve the effects of intervention. Very often, in practice, measures turn into a routine which is carried out independently of an exact diagnosis of individual cases and without evaluation of the effects.

Scientific criticism of these procedures is generally accepted, and will therefore not be discussed here. Instead, our thoughts are focused on the theoretical model itself; on the idea that, through precise intervention in the psycho-physical or social reality, we could achieve predictable effects which can be calculated. This idea is related to another which is probably of fundamental importance for a large part of our scientific activities: namely, the idea that it may be possible to accumulate general knowledge about the effectiveness of prevention and intervention, a knowledge which, in accordance with confirmed scientific theories, is of great prognostic value in defined situations. It would correspond to an ideal picture of intervention in which everything is rationally proved and therefore, according to scientific principles, fully justifiable, if we could (1) specify more completely the conditions for successful, problem-solving intervention; if we could (2) develop methods that would permit us to estimate the necessary amount of intervention and the successful combination of measures to be applied, always keeping in mind the relevant features of the situation within the framework of a diagnostic process, and furthermore, if we could (3) accurately estimate not only the expected main effects, but also the relevant side effects, especially those which may be considered negative.

That is the ideal of medical or pharmaceutical research, but medicine is still far from a realization of this ideal as far as most illnesses and their treatment are concerned. For this reason, many people do not see medicine as a real science, but rather as an art – the art of healing according to systematic practical knowledge which is, in fact, based on scientific principles, but requires for its application a high degree of experience, instinct and power of observation.² These qualities cannot be conveyed from one actor to another in the form of abstract knowledge, but rather on the basis of a personal teacher – student relationship. This is all the more remarkable, if we consider the fact that our western style of medicine is oriented to scientific theoretical models whose limits have already become obvious in dealing with the human organism.

If we go one step further and address problems whose structure and therapy must be disclosed by the human or social sciences, we must ask the question: Is the model of abstract scientific inquiry still the most suitable basis for a scientific comprehension of what is happening or should happen here? I will attempt to briefly explain the dilemma which has arisen, by listing some problems of evaluation and impact research, which are the most important methodological instruments of intervention research.

"True experiments should almost be preferred to quasi-experiments when both are available" (Campbell, 1969, p. 426). – Can this famous quotation still claim to be a basis for research in social intervention? Or, in other words, is the increase in precision, which we can achieve for certain aspects of our problem through highly developed experimental approaches, really an essential for successful intervention? The experimental approach is based on a causal-analytical theoretical model. Its basic thesis can be represented as follows:

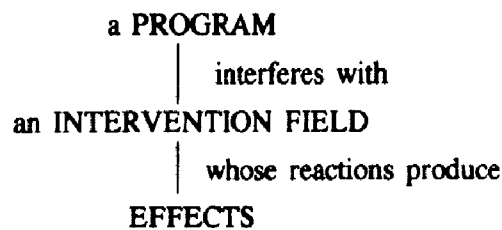


This theoretical model which I call an 'impact model' (referring to Hellstern and Wollmann, 1984) contains a simple causal hypothesis: Only the program, and nothing else, will lead to the desired results. The hypothesis of effects is considered proven, if, after control of the intervening factors, a significant correlation between the measures used and the goal variables can be established.

This basic idea cannot only be applied in the framework of real experiments where the researcher can actually decide on the use of intervention measures and the placement of

cases within treatment and control groups. If the researcher is not able to handle these items *ex ante*, evaluation researchers (cf. Cook and Campbell, 1979) speak of 'quasi-experiments'. In the latter case the transition to the usual empirical social research is, blurred, however; for all forms of analytical research follow the experimental model of thought – that is, one differentiates between constant and variable factors in order to achieve results (cf. König, 1968). Furthermore, if we consider the fact that the rigorous conditions under which experiments are carried out in the natural sciences – that is, the experiment within a *closed* system, cannot be achieved in experiments involving human beings, then the ideal of precision in *experimental* social research must be suspected of providing precise answers to the wrong questions.

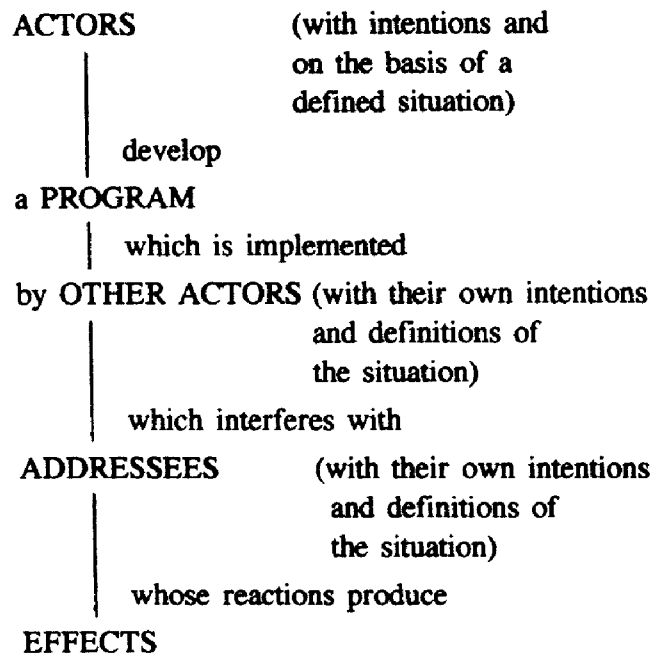
The impact model which is appropriate to social intervention can be sketched as follows:



As mentioned earlier, we also have, however, to incorporate the actor in an appropriate theory of intervention. We therefore transform the impact model into an action model and indicate the most important situational aspects (see next page).

Moreover, the interaction of the intervening actors and the addressees does not happen in a controlled environment, but under *structural constraints* (normally different for both sides) which must be considered as particular features of the field of intervention.

The criteria for quality in intervention and evaluation research should not be the closest adaptation to experimental conditions, but rather the object-adequacy and the problem-adequacy of the research design (cf. Kaufmann and Strohmeier, 1981). According to this viewpoint, it depends on the qualities of the actors, of the measures, and of the field of intervention, when deciding which research methods present the greatest chance of obtaining good results (object-adequacy). The quality of the research design also depends in a decisive way on the type of problem which is to be solved (problem-adequacy). For this reason, the methodology of evaluation research, which has been developed in the last twenty years, has recently become more and more complex and specific for particular situations. Where once we had one ideal method, we now have a mixture of methods: where once we had the basic concept of the experiment, we now have the basic concept of 'triangulation' – that is, a *redundant research design with several methods*, all of which check up on each other to ensure the validity of the results (cf. Albrecht, 1984; Hellstern, 1986).



This recent development of the methodology of evaluation research points to the fact that methodology can be helpful in solving the problems of intervention research only in a very limited way. As soon as one strays from the classical path of experimental evaluation, a new task emerges, which was solved implicitly in the course of experimental evaluation – namely, *the precise formulation of the research problem*. As soon as we no longer reconstruct intervention according to the theoretical model of the experiment, the concept 'intervention' itself becomes unclear and requires additional theoretical foundations. If for example, we want to study the effectiveness of legally established measures, then we must first make a theoretical and hypothetical reconstruction of the different stages by which these measures produce an impact. In other words, we must have an idea as to which conditions must be satisfied, if the law in question is to become effective. Via the empirical study of these necessary conditions, which in their interaction may produce sufficient conditions of impact, conclusions can be drawn as to the actual effectiveness of a program (Kaufmann et al., 1980).

If we generalize this idea, we come to a conception of intervention research which is not so much interested in determining the impact of specific measures as it is in the theoretical reconstruction and empirical testing – step by step – of the way in which intervention becomes effective. The type of knowledge achieved in this way deviates significantly from that of a technological recommendation. It contributes to making the process of intervention itself easier to understand, and thus provides the active participants of this process with insights into the immediate and future consequences of their actions – in other words, insights into the way in which the measures initiated by them may become effective. We cannot, however, provide much insight as to the *degree* of impact of certain measures with this method. This claim of experimental research must be abandoned, for it cannot be fulfilled because the established results of the degree of

impact in individual cases cannot be generalized due to the only partly controllable intervening influences. In addition, we can learn from practical research in social intervention that a particular problem cannot, as a rule, be solved by only one particular measure, but to become successful, social intervention needs *a set of measures*; therefore, the isolation of individual effects fails to solve the practical problem of combined effects.

Contrary to an experimental way of thinking, which (in the language of systems theory) strives to gain insights mainly through the comparison of input and output variables, the goal of social intervention research as described above lies in the *reconstruction of the 'throughput'* – that is, the reconstruction of the consequences which result from the initial measures taken by the intervening actor, typically set in motion in the process of becoming effective on different levels. Only in those cases in which these consequences, through their interaction, permit us to draw the conclusion that they are suited for producing the observed or desired impact in a typical case, can we assume that the measures have been effective. In other words: the experimental–theoretical model postulates a strong connection between cause and effect, in which the chain of effects itself remains an unexplained 'Black Box'. The concept proposed here does not primarily attempt to explain the effect, but rather the steps by which measures become effective or not. By the way, it should be noted that pharmaceutical research is also more and more inclined to abandon the Black Box model of the 'Double–Blind–Test', and instead attempts to discover processes in the organism through which medicaments can develop their therapeutic effects.

With reference to the logic of social intervention described above, this research strategy appears – at first glance – more like a step backward. Here, the research design does not, as a rule, show the clear and simple structure which the logic of social intervention prescribes, and which is expressed in the idea of the real experiment. As a rule, the results will probably not achieve the unpretentious clarity achieved by the experimental model. However, since the logic of social intervention is not being fundamentally questioned here, but is instead to be defended against its critics (see, e.g., Wambach, 1983; see also the paper by Willke in this volume), we must make it very clear what the advantages of the proposed research strategy are.

1. With reference to the basic problems of social intervention discussed in section 1, a concept which focuses on the way in which an effect is achieved and not on the effects of intervention alone, can deal with a multitude of ethical, political and methodological objections which criticize an experimental conception of intervention. Critics can be taken seriously here – not, however, in the sense of an a priori refutation, but as a point of departure for research hypotheses.
2. The study of the way in which measures become effective permits us to bypass the eternal question of the goal of evaluation research. It is well known that one of the principal objections to evaluation research is that the goals of political and social intervention are often unclear, sometimes contradictory or incoherent. With the concept developed here, the motives and intentions of the actors are not important,

instead, what they actually effect with their action is what counts. The researcher is free to choose the group of target variables to be examined from a multitude of potential goals and claimed side effects.

3. When we study the way in which measures become effective, we can make allowances for the facts developed in section 1, that the addressees of measures are not immobile objects, but rather *react selectively* toward certain intentions and influences; in the words of intervention theory – the field of intervention is *reactive*. The way in which measures become effective, results from the reactions of selective and self-dynamic organs or actors which can, for example, be reconstructed as systemic qualities of the addressees.
4. While experimental intervention research views the actor, in principle, as an omnipotent experimenter, and does not even question this attitude when confronted with negative findings, research in the ways of how interventions become effective is capable of including the actor as an active element with all his or her qualities in the theoretical and empirical context. The role of the actor thus also becomes an object of research. This consequence is highly relevant, if we consider the constitutive importance of the actor as discussed in section 1.
5. Since the interest in knowledge is not primarily aimed at the discovery of any given success or failure of measures, but is aimed at analyzing their interaction with the properties of the field of intervention, in which they intervene, then this form of evaluation research is not so much an element of control as it is of help for the intervening actors. The results are therefore much more likely to initiate processes of learning than the more simple forms of impact controls.

All in all, the research strategy described here seems to be less attractive and less plausible to naive researchers as well as actors because it clearly shows not only the options open to them, *but also the limitations to their range of action*; above all, this strategy shows very clearly the complex structure of factors in which the actors intend to intervene. However, at the same time, this strategy is more object-adequate and, in the long run, more problem-adequate because the scientific legitimization of illusions of power serves no acceptable interests. And so, in the end, also the thinking actor (if only there was a way to make him thinking!) will profit more from such results, for they offer a better understanding of his/her own situation and, perhaps, help him/her to define the problems in closer proximity to reality. In my opinion, it is precisely here that the main task of applied social scientific research lies (Kaufmann, 1977).

3. A Meta-Theoretical Approach to Object-Adequate Theories of Intervention

In the preceding paragraphs, we have concentrated mainly on methodological aspects. In the course of the discussion it has become apparent that we need more complex, meta-theoretical bases than those provided by the causal model, on which experimental

studies are based. Up to now, however, these new, more complex bases have remained obscure; this last section will deal with this issue.

In almost all applied social sciences it is currently a well-recognized fact that simple causal models are no longer sufficient – even though they still have a strong influence on current, applied research. Their simplicity is a temptation to researchers who prefer quick results to a better understanding of social reality and of the ways it can be influenced. The fact that each new empirical research design requires certain compromises as far as its implementation is concerned, should not discourage us from experimenting with new, more complex theoretical models. They cannot all be introduced here; however, some possible contributions to the theoretical reconstruction of intervention problems will be outlined.

In our previous discussion, we focused on an action theoretical model. This is already a sign of progress as far as the experimental model is concerned, because the action theoretical model does not view the actor as a 'Black Box', but rather conceives of him/her as an element of intervention itself. Social intervention is explicitly considered here as being the social action of an actor who has specific qualities and, especially, specific limitations (e.g., limitations of knowledge, of ability for dealing with problems, of resources). This action theoretical perspective permits a more adequate concept of intervention itself. However, until now, no concrete assumptions have been made concerning the actor. This usually occurs within the framework of individual disciplines with different points of departure: in economics, at the moment, the model of the rational actor (REMM: *Resourceful Rational Maximizing Man*) is competing with the model of 'Bounded Rationality' (Stigler, 1965). In sociology one attempts to reconstruct the concrete contingencies, as opposed to rational-theoretical constructions of the actor with the help of systems theory. The concept of self-reference is fundamental here: (individual and collective) actors refer all the events in the world around them primarily to specific qualities of their own system – that is, their selectivity can be explained through their specific, systemic qualities which other actors (or the world around them) consider to be intransparent (cf. Luhmann, 1984). Such a systems theoretical reconstruction of the actor is considered to be especially profitable, if it is applied – in the framework of a reconstruction of social intervention in terms of guidance – not only to the intervening actor, but also to the addressees of intervention. With the help of the systems theoretical approach, the selectivity and reactivity of the target group of intervention can be described much more realistically. The paper of H. Willke shows, however, that on the basis of a 'strong' systems theory – namely that of autopoietic systems – the success of interventions becomes extremely implausible.

Despite the strong arguments of the self-referentiality approach I believe in the possible success of social intervention, and coupled with this, the potential of empirically tested theories about the way in which social intervention is effective.

If we take the assumptions of systems theory as a basis for both sides of the process known as intervention, then *the idea of an inter-systems relationship takes the place of the subject-object relationship which is the basis of the causality scheme*. Therefore, the addressees of intervention are given the same theoretical status as the intervening actor. Intervention is thus interaction between two or more actors, where the intervening actor is considered to have an advantage only insofar as his/her intentions and the resources at his/her disposal are concerned. For the success of the intervention, however, the selectivity and the reaction of the addressees of intervention are of equal constitutive importance. *Social intervention thus appears as a specific form of social interaction*; in the typical case, this is not only an interaction between two people (as in the case of a single counseling session or a sporadic therapy) but, as a rule, is mediated by a third party as well as by the environmental conditions, which cannot be fully controlled by the intervening actor. If we call to mind the comparatively simple problem in the case of the project on *handicapped children*: The researchers must persuade *the parents* to slip on an ultrasonic device, and not to forget it. One may see this as a very simple first step in intervention; but consider that this takes place in the context of everyday family life, where mothers are perhaps working, where unexpected phone calls occur, errands need to be done, etc. Wherever this relatively simple process has to compete with an infinite number of other processes, it becomes apparent that even this first step of intervention, which is a necessary, but not sufficient condition of the success of the intervening measure, takes place under conditions which the researcher can neither fully grasp nor control. Whereas the researcher has far-reaching control over the environmental conditions in the laboratory, we here have a situation in which the actual intervention takes place in a separate space, separated from the researcher through structural limits – the family in question where the mother must make *the child* wear the ultrasonic device for a sufficiently long time – which may be seen as a second level of intervention, whose success, again, depends upon the child's reactions. *Only then* does the level of intervention begin that, through scientific theories and technical equipment, is at the center of the research approach based on the concepts of the natural sciences.

Let us take the process of a social-political intervention as a second example – e.g., the modification of sanctions in the juvenile court system, as studied in the projects of area C of the Special Research Unit (cf. P.A. Albrecht; in SFB 227, 1985, pp. 461ff.). Here it is immediately obvious that the suitable form of intervention must be a process consisting of many different steps, and which researchers can only set and keep in motion with political assistance. The mobilization of political assistance for the program is the first step of intervention; further necessary conditions come up within the juvenile court system. The researchers have to overcome the resistance to change and to motivate certain officials to record the data provided by the researchers. Finally, follow-up studies are needed to evaluate the effects of a modified behavior of prosecuting officials toward young offenders.

What, then, are the conditions under which such multi-step intervention processes, which cannot be fully influenced by the researcher, let alone controlled by him, can at all take

place? Often, the problems connected with this situation are considered to be problems of coordination or of cooperation between actors. This perspective – which appears plausible at first, and to which the inter-systems approach corresponds – leads to the overestimation of the difficulties involved in successful interventions. As a matter of fact, it is not necessary that *the actors* fully coordinate their work; it is enough, if *specific actions* of the actors are coordinated. So we have to query characteristic modes of coordination which may be efficient in producing coordinated actions, for it is not sufficient to rely on sporadic coordination; effective intervention needs a patterned coordination which encompasses several steps or phases. These patterns can then be identified typically on two levels of analysis, the level of institutional coordination, and the level of operational or situational coordination (cf. Kaufmann, 1986).

In this way, intervention can be reconstructed as consisting of several different chains of action. We must look for answers to the question of how can actors be brought to behave in such a way that predictable chains of action are possible at several different levels of action? The theory of self-referential systems can only make a very limited contribution to solving this question by pointing out that one cannot expect unlimited cooperation or compliance from the actors. Instead, this theory claims that all their actions are determined by their orientation toward internal conditions of self-maintenance. This is a complex formulation of a well-known issue in the social sciences, namely, of how social order can emerge and be maintained under conditions where actors pursue their own interests.

As we know from the theory of non-cooperative games, the conditions for this are very limited; but recent game theoretical studies have shown that stable chains of action are certainly possible in *iterative* game situations (see Selten, 1986; Raub and Voss, 1986). However, all these models require constant system qualities on the part of the actor, so that the behavior expected by the actors is not threatening their system qualities, or in other words, that, from the actor's perspective, the actions required of him are *peripheral* decisions. Whenever one attempts to change the system qualities of a specific addressee through intervention – in the theory of economics, e.g., this is called a non-conform intervention in markets – a goal-oriented success of the intervention and a stable chain of actions seem very unlikely.

Whenever the system qualities of an actor are only challenged to a small degree, – or, in other words, when the decisions s/he is expected to make do not involve serious ambivalences or costs for him/her, then simpler explanatory models than the theory of self-referential systems will suffice. In order to explain the coordination of actions, there is a multitude of approaches in the social sciences whose systematization, however, always leads to three or four similar, fundamental types of explanations³, which can be briefly described as follows:

<i>Mode of Coordination</i>	<i>Type of Transaction</i>	<i>Reasons for Compliance</i>
Hierarchy	power relationship	fear
Market	exchange	interest
Norms and Values	conformity and approval	commitment
Solidarity	personal relationship	sympathy trust

With these four sets of concepts, different types of motivations of human behavior as well as typical social prerequisites are described.

These concepts explain the emergence of chains of action in an ideal way; however, what we usually find in reality is a mixture of elements which can only be recognized as such through a sharp distinction of the ideal type.

Typically, coordination of actions occurs on two levels: the institutional and the operational. Institutional rules create the framework which enables concrete actors to meet each other and to choose from an institutionally limited arsenal those patterns of action which concur with the motives of their behavior. In individual cases, however, a situational adjustment of action designs always takes place. Also, we must think of intervention as a simultaneous process of guidance and control. Successful intervention, moreover, in many cases requires learning processes on the part of the intervening actor which only come into existence through the evaluation of previous attempts of intervention (see Kaufmann, 1986).

This very brief reference to some recent meta-theoretical approaches, which may be suitable for a more complex construction of intervention processes, is meant to show why the organizers of this volume want to initiate a discussion of prevention and intervention processes from the analytical perspective of guidance. By the concepts 'prevention' and 'intervention' we mean social processes initiated by an actor who is chosen as a point of reference with specific intentions in order to obtain specific effects. As a rule, no actor has so much power to determine his/her field of intervention that one could consider intervention to be a simple intentional-causal process. If this is not the case — and a major part of previous evaluation research into social measures seems to point in this direction — then we need more sophisticated theoretical models in order to explain the interrelationship of effects which can be observed in reality. We have to deal, therefore, with the general problem how to conceptualize the ability to cause effects under the conditions of intentional actors and responsive addressees. This is what we mean by the term "analytical perspective of guidance". In this paper, I have attempted to formulate this more precisely. The final references to meta-theoretical concepts are not intended as solutions to these questions, they merely indicate tools which may be useful for developing some answers.

Notes

- (1) When I use the term 'actor' in speaking of the researcher, I do not necessarily mean one individual; depending on the circumstances, it can also be used to designate a group of researchers as a 'collective actor'. The internal decision-making-processes which the group has to make will not be discussed here.
- (2) H.F. Spinner (1986) characterizes this kind of a practical rationality 'Gelegenheitsrationalität' (situational rationality) in contrast to a 'Grundsatzrationalität' (rationality of principles) which is characteristic of the abstract form for example, of scientific inquiry. (See also the abductive mode of reasoning in C. S. Peirce, 1986).
- (3) The third and fourth type of explanation are often taken together as one type; however, this is not conclusive from an analytical point of view.

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