A SYSTEMS APPROACH TO EVALUATION

Applications of Systems theory and Systems thinking in Evaluations

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Introduction

In regional and local development the implementation of multi-objective, multi-sectoral programmes is becoming more and more widespread. But the evaluation of such programmes is a quite recent phenomenon and still raises a series of methodological and operational questions.

Although the MEANS Programme has lately introduced several methodological innovations in this respect, the tools proposed mainly consist in visualising diversities through rating and ranking (see MEANS Collection Vol.3 and 4). And although the literature on constructivist and participatory approaches in evaluation has grown considerably these past years, practical proposals on working with (not just illustrating) different stakeholder opinions remain vague.

All of these approaches are usually confronted with the challenge of dealing appropriately with complex social systems, where a wide (and often changing) variety of actors with different values, interests and motives are inter-acting. Evaluation findings often reveal a diverse picture of the reality in a programme / project, particularly when viewed through the eyes of various stakeholders. And any attempt at reducing this complex picture in an inappropriate manner will not only harm the credibility of the evaluation, but also brings forth resistance from those which feel not properly represented.

Simple systems are characterised by few and similar variables whose relations are stable and simple. The (inter)actions are limited and can be thoroughly analysed, the effects are predictable. This simple causal mechanics is suited for and has been very successfully applied in classic natural science, but is quite inappropriate when dealing with social systems, which are much more complex.

In complex systems many different elements can act in manifold ways and are intensely interlinked, which does not allow detailed analysis or prediction due to non-linear, unstable relations. At best patterns of interaction can be observed and uncertainty in working with them gradually reduced. But Human cognition is not well suited to understand their dynamics, it has the tendency to reduce complex relations to simple cause-effect patterns. And to look only at what can be observed and ignore all which is not accessible to observation or easily understood.

Systems theory and systems thinking can be of great help to avoid undue simplifications and provide useful tools for practical work with these differences. A systems approach can also contribute towards improved use of evaluations. Because raising awareness for the crucial linkages and patterns at work is a pre-requisite for any serious and sustainable learning effect which is so often expected from evaluations.

Systems theory does not (yet) constitute a uniform, consolidated stock of knowledge, but rather stems from research originally undertaken in diverse fields such as anthropology, biology, cybernetics, communications theory, sociology and management, which have mutually influenced each other. Based on these findings specific techniques were first developed in family therapy, and later on in other fields i.e. management consultancy and organisational development.

Chapter 1 of this paper presents key elements of systems theory and systems thinking. Chapter 2 describes the essential ways of working with complex systems - intervention and observation - and outlines their implication for evaluating such systems. Chapter 3 contains a brief overview of systemic tools and techniques and illustrates their use in evaluation work.
1. KEY ELEMENTS OF SYSTEMS THEORY

1.1 Basic Concepts and their Evolution

Systems theory considers the whole universe as a hierarchy of interlinked systems. A system is constituted by elements linked together in a certain pattern (structure). Therefore they can have mutual influence and change in one element has an effect on the others, based on the interaction patterns.

Earlier systems theory considered systems as objects of the real world and analysed their operation (“1st Order Cybernetics”). Of prime concern was to study how systems can remain stable in a changing operating environment. The operation of systems was essentially understood as a combination of positive and negative feed-back mechanisms between its constitutive elements. But causes and effects are not considered to have a straight and static relation, but are variable and intertwined in manifold ways (space, time, actors, themes). Since the relations between the elements are regarded as circular instead of linear, the description of interaction patterns (how?) replaces the search for “causes” (why?).

The result of this thinking were elaborate models for the description of systems (“Systems Dynamics”), as exemplified by the world models of the Club of Rome. But later on its application to management and organisations (e.g. Senge, 1990) has lead to the development of basic configurations (“systems archetypes”) as a simple analytic tool for more widespread use. But with increasing complexity, analysing the interaction of a system with its context becomes more important and revealing than studying the elements and their relations.

In the Eighties, under the influence of Constructivism, statements about an object were not considered to be “objective”, but primarily dependent on an observer, his structures and behaviour (v. Schlippe/Schweitzer 1997). Thus systems are considered to be "constructed" by observers through the act of marking a difference, namely between the

- system and its context (inside – outside)
- the elements and their relations, also to the system as a whole (parts – all)
There are several practical consequences of this shift in systems theory ("2nd Order Cybernetics"):

- The unit of observation is the system and its context, all phenomena to be observed in a system are therefore related to a context in which they take place.

- Instead of a comprehensive view a minimalist approach can be adopted. Systems are reduced to those components which are essential to understand certain phenomena. The fundamental question is: What can be left out without jeopardising this understanding?

- There are always various possibilities to describe and delimit systems, depending on the observers and the purpose of investigation. Thus reality is not true or false, but a social product of reaching (temporary) consensus on the interpretation of certain phenomena.

- Causality as a means of reducing complexity exists “only” in the observers´ minds. In social systems everyone is an observer, thus the focus is to be put on those circular causality patterns which can be “constructed” by linking the (normally linear) patterns of the individual observers. Every interaction can be both cause and effect and does not only work one way.

In addition, complex systems show several specific features, notably

- Indifference and sensitivity: Changes in many of its parts hardly lead to change in the overall system, but reaction on changes in sensitive points are very strong. It is the objective of system’s analysis to identify these “soft spots”, capable of triggering strong reactions.

- Non-trivial behaviour: Contextual influences (e.g. inputs) do not result in uniform, predictable output but are modified and rearranged in a way, that depends more on the internal state and structure of the system than the intention of an external actor. Although this transformation process cannot be completely analysed and understood, it can be observed from the outside and the results are “communicated” to the system´s context.

The understanding of complex systems has greatly improved with the analysis of Living systems. These are characterised by the continuous renewal of their elements, they must be actively maintained: “Everything changes unless someone /-thing ensures that things remain as they are” (Simon, 1997b). And change is induced through external perturbations which have an ambivalent character: they are both disturbing and the source for further development. This can be explained by characteristic features of their internal structure:

- **“Autopoetic”**: This specific form of self-organisation means that a network of interlinked elements is constantly reproduced by these very elements and at the same time (relatively) closed off from its context. This is the mechanism which brings forth autonomous systems.

- **Self-referential**: The increase in the autonomous behaviour of complex systems leads to operational closure. They react more and more upon their internal structure, are busy with their own processes and only react very selectively with their context. Interaction of a self-referential system with its context is a self-referential process, whose result is more in which

- **Structurally linked**: Autopoetic systems are not entirely closed off from their context, they are linked to the context (or other systems) in a selective manner determined by their specific structure. Thus system and context have the capacity to mutually influence each other.
- **Structurally determined**: The behaviour of such a system is not the direct result of external influences, but rather determined through its present internal structure. Changes in the context act as perturbations, and the way the system reacts on these perturbations depends much more on the system’s structure than the perturbation.

Thus all living systems possess an inherent paradox: The contradiction between closure (= self-referential, autonomous) and openness (= structurally linked to a surrounding context). They can neither be reduced to their internal dynamics nor completely controlled from the outside. And any attempt to overcome this paradox in a directive manner (e.g. external force, hierarchic order) is futile, because it threatens the system’s identity and reinforces its defensive structures.

### 1.2 Key aspects of systems thinking

#### 1.2.1 Interaction, Communication and Information

The structure of social systems consists of communications / interactions (relations) and functional nodes of interaction (elements), but not of the people carrying them out. Human beings are always considered as belonging to the context of the systems in which they act.

Communication is done via information. But the technical model of communication, whereby information is sent to a receiver and it is the sender who determines the message, is not applicable in social systems. Here the receiver has to actively transform the signals sent to him by attributing a meaning to them, depending on his internal structure. Information is a “difference, which makes a difference” for the receiver (Bateson, 1972).

Thus information should not be regarded as the result of a linear cause-effect relationship between sender and receiver. As a consequence, **it is not the sender but the receiver who determines the meaning of what is said** (Watzlawick et al, 1967). And communication among self-organising systems (e.g. human beings) does not consist in “transferring” information, but in matching the autonomous operational modes inside these systems.

Interpersonal communication takes place by actors attributing a meaning to their own actions and the actions of others. Then they act according to these attribution of meanings, these actions are once again given meanings by the interaction partners and so forth. Thus individual and collective constructions of reality are produced, affirmed or modified, depending on how disturbing or animating the resulting pattern of interaction is experienced:
Communication systems too are self-organised, autonomous and cannot be controlled unilaterally:

- The interactions of each individual can possess manifold meanings, there is no objective “true” meaning. The autonomy of each actor assures that he can attribute his own meanings. And he/she does this according to his/her own structure based on previous experience, i.e. prior attributions of meaning.

- Moreover, everything one does - intentional or not - becomes part of the interpersonal communication system, provided it is observed by others.

- How others react on actions depends less on the action itself than on the meaning attributed to this action by others. And since it is not possible to control these meanings, it is not possible to control the subsequent actions.

1.2.2 Problems and solutions

Problems are situations regarded by someone as undesired, which need and can be changed (at least in principle). But in social systems problems are also constructions, and what is considered problematic for one actor might be meaningless or even considered a solution by others. Besides, communication and interaction about a problematic situation can lead to specific patterns of communication/interaction: Not only systems are creating problems, but problems are also creating systems.

The essential steps for systemic problem solving are: (Watzlawick et al., 1974).

- **Defining the problem:**

  As a first step those elements and relations responsible for the problematic state must be identified (“problem system”). How are problems maintained, who and what contributes to stabilise the situation? These generative mechanisms to maintain phenomena are usually a combination of two distinct types of behaviour:

  a) actions which take place but should not happen
  b) actions which do not take place but would be needed

  But at this stage it is also important to analyse additional functions problems can have. What is the good in the bad, what would happen if the problem disappears? And to make a distinction between problems and difficulties. The latter are undesired states, which can either be solved by simple corrective actions or have to be lived with because no solution is known.

- **Analyse previous attempts for solutions:**

  This analysis indicates what should not be tried anymore and points at future directions, as past solutions are often the key to present problems. This is particularly true in cases where false solutions have been applied on difficulties and thus have turned them into real problems:

  - Difficulties were either ignored or falsely identified as difficulties
- Solutions were too simple, e.g. through the application of proven solutions in a changed context ("more of the same")
- Solutions were unrealistic, e.g. not in line with capacities or resources
- Solutions led to counterproductive or even paradox situations, because they were applied at the wrong level, e.g. quick solutions for apparent symptoms

Such analysis is particularly important when problems have a certain degree of dynamic complexity, i.e. the same action leads to different effects in time (e.g. short-term, long-term) or place. False corrections can easily occur, i.e. solutions which are successful at first sight, but lead to unintentional negative consequences at other times or places (Senge, 1992):

- **Defining solutions:**

  Solutions also need to be brought forth by a set of related elements ("solution system"). The basic generative mechanisms cited above already provides an indication for the appropriate logic of solutions. In the case of

  a) Mechanisms need to be interrupted e.g. by suppressing actions or dissolving structures
  b) New mechanisms need to be created, e.g. by introducing actions or creating structures

  But it is important to see that the solutions system is not necessarily identical with the problem system. Due to the interlinked nature of systems, changes in one part (if properly identified) can already change the overall pattern decisively. What is the smallest unit needed for bringing forth a solution? Who and what is needed or can be left out? In the case of false corrections mentioned above the key lies in understanding the dynamic complexity at work. Not to find ever more complex solutions to ever more complex problems, but to identify the crucial factors capable of bringing forth change (leverage effect).

  And it is even possible to define solutions without properly understanding the generic mechanism of problems, because due to their constructed nature problems and solutions are not necessarily linked. In this case the focus must not be placed on the past (why?), but on the presence (what?). What happens now and what can be done about it? This can be particularly relevant where it is difficult to retrace the past or where actors are too entangled in their problems to see a way out: Problem talk creates problems, solution talk creates solutions.
1.2.2 Learning in systems

Similar to information, knowledge cannot be “transferred” but is an active self-referential process of selecting information. A student is not a passive, empty recipient to be filled with information, but is creating knowledge from the information provided by a teacher. Student and teacher form a learning system, but **what will be learned is determined by the student and not the teacher**. However, the latter can enhance the chances for learning and create a favourable context by paying attention to the students internal structure, i.e. needs, skills and aspirations.

Learning as such cannot be observed, but is used as an explanation. If someone learns or not, is thus not determined by the (internal) processes that students undergo, but by observers. They attribute certain changes in the behaviour of a person to his acquired knowledge. But learning and de-learning (“forgetting”) are changes in the stock of knowledge. Thus learning and knowledge are opposed to each other. Our prior knowledge determines what we will learn, and where this knowledge is to be maintained, learning is not possible. Thus de-learning is the prerequisite of learning (Simon, 1997a).

Learning processes can take place at various system levels: individuals, teams, organisations, regions etc. But there are significant differences as to the way learning takes place at these different levels. Concerning organisational learning, three forms of learning can be identified:

- **Single loop learning (Learning to adapt)**: results in a change of strategy or action, but does not address the underlying values or assumptions. Successful in providing short term solutions and focussing on apparent symptoms of larger problems.

- **Double loop learning (Learning to change)**: by reflecting on values and assumptions, it is possible to understand the generative mechanisms of problems, their underlying causes and consequences. This also leads to better mid- and long-term reactions to contextual changes.

- **Deutero learning (Learning to learn)**: by reflecting on the learning mechanisms, it is possible to change rules and behaviour, i.e. different patterns of recognising and handling problems or coping with contextual changes.

Senge has shown that key obstacles for learning in organisations can be found in different ways of thinking in complex situations. **Higher levels of learning can only be achieved through an improved understanding of complexities as provided by Systems Thinking**. This is the “Fifth Discipline” which provides the essential link for the other disciplines of Organisational Learning: Personal mastery, mental models, joint vision and team learning (Senge, 1990).

Thus the pre-requisite for improved learning is to avoid linear cause-effect patterns but raise awareness for the crucial linkages at work in social systems, mutual inter - dependence and respective responsibilities or capacities. And to focus on communication patterns, not the people carrying them out, thus overcoming tendencies to “blame” single actors or causes.
2. WORKING WITH COMPLEX SYSTEMS

2.1. Intervening

Intervening means to apply external influence upon a system with the aim of inducing change. But systems can only change themselves, this cannot be done by an intervener, no matter what resources, power etc. are applied (at least not in the long run and in a sustainable manner). In the end every system does what it does according to its own logic.

“Systemic” interventions are therefore targeted communications among (social) systems, which respect the autonomy of these systems. Interventions can only stimulate a system’s self-steering mechanisms, they are not interferences aimed at precise, linear and intended effects. The strategy for intervention should thus be designed and implemented not from an external point of view (e.g. an observer), but rather in the terms of the system at which the intervention is aimed at. It is the structure of the “target” system which is decisive for the success of an intervention (Willke, 1996).

Due to these pre-conditions, interventions in autonomous systems cannot be of a linear, directive nature, the outcome is uncertain and they bear certain risks. In order to limit them and increase the chance for success, some precautions should be taken:

- Beware of connectability: To be accepted, the intervener must have an understanding of the system’s internal structure and act accordingly. This requires e.g. to use similar language, respect rules and behaviour patterns, link to existing concepts and values, address relevant topics.

- Keep interventions balanced: Expose to external views in a moderate way, do not confront openly. Do not only seek change, but also make aware what should be maintained. Balance out contradictions and ambivalent tendencies (e.g. good in the bad, bad in the good).

- Base interventions on prior hypothesis: Regard interventions as a cyclic process. Before intervening, collect information about the system, formulate hypotheses about the situation and the intended effect(s) of the intervention. After the intervention, collect information about it’s effects, reformulate hypothesis and so forth:

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Plan intervention → Intervene → Collect information → Re/Formulate hypothesis
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In Chapter 3 a variety of systemic interventions is described in more detail, in order to illustrate how they can be designed, and how and why they work. And in some cases examples for their practical application in evaluations are given.
2.2 Observing:

This does not signify passive on-looking, but the active capacity to observe meaningful differences, based on a **double act of differentiation**:

- Identifying a phenomenon: observe a relevant difference and defining criteria (e.g. action)
- Attributing a symbol to the observed phenomenon (e.g. name)

Once these fundamental differences are marked, the observer “constructs” a frame of reference (internal map) for orientation. This map serves as a frame of reference for actions and allows to chose from different alternatives.

As has been shown in 1.2, interpersonal communication links several areas of phenomena:

- one area, which can be observed by others (visible actions)
- several areas, which can only be observed by the individual actor (feelings, sensations etc.)

Observers can only observe the visible actions, but they can try and gain access to the subjective areas of the individual actors by means of communication. And in communicating about phenomena, we can differentiate even further between:

- **Describing**: data, empirical evidence, information on the observed phenomenon (what?)
- **Interpreting**: Explanations for bringing forth and maintaining the phenomenon (why?)
- **Judging**: Assessing phenomena according to a set of value-based criteria. It is these values that guide the individual and social selection of behaviour.

In everyday communication we normally mix these, which turns it rather unclear and ambiguous. Moreover, different people can describe or interpret the same phenomena in quite divergent ways, and the differences in judgements can be even greater. **In order to be able to reach interpersonal consensus, it is thus imperative to make a clear distinction among these three levels and be as precise as possible.** Consensus can be sought on all three levels, but chances are best with descriptions, because it can be based on observable, factual data.

Processes in social systems are very much based on observation, (inter)actions are the results of actions (and the meaning attributed to them) observed with others, who in turn are observing others. Social systems can therefore be regarded as “observers observing other observers”.

But due to the selection processes of self-referential systems, each observer only sees one specific part. And is not aware of the blind spots, since “we don’t see that we don’t see”. This can only be achieved by increasing the reflective capacity, and for this external assistance can be of great help. Either by purposefully confronting with external views or in dealing constructively with the other views each observer is exposed with when interacting.
This is the essential reason why in increasingly complex economic and social systems external observers are more and more sought for. They provide additional perspectives, assist in overcoming internal blockages and improving learning processes: Therapists that help families in resolving their conflicts, consultants assisting individuals or organisations in their development processes - or evaluators, who assist in improving the implementation of a programme.

2.3 Evaluating

Evaluation can be regarded as a specific case of observation, which takes place in a joint system established between two main partners:

- Client System (CS): Consisting of the commissioners, the operators (i.e. managers of the programme/project to be evaluated) and the concerned public (other stakeholders such as beneficiaries, partners, potential users of the evaluations results)

- Evaluator System (ES): The experts commissioned to undertake the evaluation

The evaluation system is new, usually established by contract, limited in time and incorporates elements of the two constituting partners (CES). It has a joint focus based on the evaluation purpose, and a structure to serve it. Elements of this structure are nodes of communication (i.e. steering group, interview sessions, workshops) and their respective linkages as defined in the design of the evaluation process.

All three systems are part of each others context. Whatever happens in the evaluation system can affect the constituting systems (CS and ES), and vice versa. And evaluation is an intervention in the Client System, bringing forth reactions in the latter according to its internal structure. It is a circular process, by which CS and ES mutually influence each other.

Systemic evaluation is an intervention which respects the autonomy of the Client System and is based on the systemic principles for intervening (see Chapter 2.1). It is defined as a joint exercise between the evaluator and client system with the essential aim of increasing the client’s capacity to understand, solve problems and change. The evaluator is an external observer, providing additional points of views and specific skills for managing the process. But he/she is more than a facilitator, intervenes actively and disturbs in order to achieve the aims.

A systemic evaluator bases his/her work on the assumption that living systems are capable to reproduce themselves, i.e. have all the necessary ingredients and resources for change. Therefore he/she has questions not answers (which does not exclude providing information), basically collects information and feeds it back in varied and often surprising ways in order to trigger off effective perturbations within the client system, which should in turn help to develop new patterns of interaction. The key techniques to be applied are described in Chapter 3.
There are some **fundamental principles** which must be observed:

- **Formulate hypothesis:**
  Hypothesis can be based on various sources of information: data and observations of and about the client, the evaluators experience and background, theories about the topics under considerations, standards, benchmarks etc. They should provide useful explanations for the present status. To this end they must resemble the client’s explanation, but at the same time be different. And they should open new possibilities, i.e. focus on aspects which can be changed and stimulate solutions. Concerning problems one should at least be able to formulate two types of initial hypothesis: On the generative mechanisms and the solution.

- **Think and act circular:**
  The hypothesis should be circular, i.e. represent a closed chain of phenomena. Since individual hypothesis are generally linear, they must either be linked or additional information sought that allows to close the gaps. And it is not useful to search for the hypothesis, on the contrary: a variety of hypothesis can increase the variety of perspectives and possibilities. Besides, hypothesis are not statements of “truth”, but their validity must be tested. This test is done indirectly via formulating questions and planning interventions, whose effects are then analysed and serve to either confirm or modify the original hypothesis.

- **Remain neutral:**
  This is probably the most difficult aspect, because the evaluator is constantly faced with a dilemma: If constantly rejecting client’s views or placing his/her own views instead, he/she risks to become disconnected. In addition, the client will most likely not present one view, but several. And by accepting one of these views one risks to be considered biased. Also if the aim is not change as such, but the capacity of the client to change, it would be counterproductive for the evaluator to favour one particular direction for change.

  Neutrality can either consist in doing nothing – hardly a position acceptable to clients that expect action and change. Or to balance contradictory tendencies over time, be flexible in order to remain constant. Since contradictory phenomena can coexist in living systems, the fundamental options are not just either —or, but also both/and and neither/nor. The result is a “tetralemma” of behaviour options:

<table>
<thead>
<tr>
<th>either</th>
<th>both / and</th>
</tr>
</thead>
<tbody>
<tr>
<td>neither / nor</td>
<td>or</td>
</tr>
</tbody>
</table>

  Just as the client system will shift and move among these options during the course of the evaluation process, so can the evaluator. What is important is to balance focus and interventions over time to obtain neutrality in the end. And the evaluator can (and should!) express his own opinions, but in an open flexible manner (i.e. present options, alternatives).

  Above all neutrality is not a technique, but a fundamental attitude. Which can be expressed most easily by maintaining a state of respectful curiosity. Using one’s own ignorance as a resource can help to avoid taking sides and prevent premature understanding.
3. SYSTEMIC TOOLS AND TECHNIQUES

Most of these techniques have been designed for use in organisational and management consulting. Applying them in evaluation could help in structuring the evaluation according to systemic principles and in working with a diversity of opinions during all subsequent phases.

They are presented in the same structure of the MEANS Collection, Vol. 3 (Principal evaluation techniques and tools) and are by no means meant to be exclusive. They can for instance be combined with any of the tools for evaluating multi-sectoral programmes contained in either Vol. 3 or 4 (e.g. concept mapping, colour vote, scoring scales, multicriteria analysis).

3.1 Structuring an evaluation

3.3.1 The evaluand as a system

When defining the scope of an evaluation from a systemic perspective, one would have to bear in mind two considerations in determining the institutional, temporal, sectoral, geographical dimensions of the programme/project to be evaluated (evaluand):

- The unit of observation is the evaluand and its context
- Structure the evaluand as a system, i.e. determine the essential elements and their relations

Example: Structuring the evaluand as a system

The URBAN Community Initiative Graz was designed as an integrated urban renewal programme for an inner-city area (Gries district), with a number of interrelated measures and projects. A project/programme of this nature can be regarded as the intervention of one complex system (=programme) into another one, the existing socio-economic structure (=context).

If evaluation should lead to learning effects for those involved in the programme’s implementation, it is not enough to answer questions of achievement (i.e. results, impacts) in an isolated manner, without taking the actual functioning of the programme or key context factors into account. Therefore these aspects were arranged in a systemic perspective, by linking the basic components of the programme (objectives – inputs – outputs) to both mechanisms and context in a recursive logic:

During the on-going evaluation the focus was on the interaction between...
Programme mechanisms, inputs and outputs (e.g. administrative and financial procedures, rules for implementation, co-ordination mechanisms, project selection)
Programme mechanisms and context (e.g. changes in framework conditions, relation with target groups, other programmes)

The final evaluation focussed on the preliminary assessment of impacts. To this end
- Outputs of individual projects were aggregated per priority axis, their impacts estimated and compared with expected impacts.
- Factors which contributed to the achievement of expected impacts or explained divergences were collected via questionnaire survey and interviews with selected projects.
- These explicatory factors were either attributed to Programme mechanisms and/or Context.
- Thus the crucial factors in programmes implementation were identified, which allowed a sound understanding of success and problem areas.

In both cases the original “theory of action” of the Programme Document was reconstructed based on those mechanisms and context factors which could actually be observed as influential. And by putting impacts in relation to the (validated) theory of action, they were conceived as the result of specific mechanisms acting in a specific context, linked by recursive loops. Because impacts modify the context, this has potential effects on Programme mechanisms, which in turn can affect the transformation of inputs into outputs and impacts, and so forth.

A similar approach has been applied in designing a method for the evaluation of LEADER II. But in this case the objective was to provide the large number of LEADER Local Action Groups with a common framework for evaluation. Therefore the essential programme mechanisms (seven “specificities”) and context elements (territorial characteristics, institutional context, key players) to be assessed were defined in advance, in order to allow for subsequent comparison of findings and aggregation at higher levels.

### 3.1.2 Systemic maps

In such maps elements are linked by two types of feed-back mechanisms:

- **(−)** Negative feed-back: interaction works as a limiting factor and leads to a compensation process aimed at closing the gap between a desired and the actual state (stabilisation).
- **(+)** Positive feed-back: interaction leads to an increase of the previous state (growth/decline).

The following page shows an example of an impact map, which was produced during the mid-term evaluation of a Technical Assistance Fund on Cape Verde Islands, as follows:
1. Low use of Funds was evident from monitoring data and agreed to be the core issue.
2. Explicatory factors were collected from document analysis and prior group interviews.
3. These factors were assembled on a pin wall by staff from the implementing institution, and linked by reinforcing (+) and balancing (−) feedback relations (facilitated by the evaluator).
4. Those factors which can be influenced or controlled by the implementing institution were identified, and an Action Programme was elaborated to improve their situation.

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2 Assessing the added value of the LEADER approach, „Rural Innovation“ Dossier N° 4, LEADER European Observatory. The author was member of the working group that elaborated this Dossier.
Factors under influence of the implementing institution
3.2 Observing changes

3.2.1 Circular Interviewing

From a systemic perspective, questions are not just a means to collect information, they can also generate information and stimulate the reflexive capacities of the interviewees. Every behaviour contains a message for someone else. Direct questions ask the sender of the message: why did you act like that? Indirect questions ask the receivers of this message: why has he/she acted like that?. Thus new information can be generated for the others (including the sender), and this new information stimulates in turn their reflection and can modify their own positions. These effects can be increased if several people are present during the interview and the questions are asked in a circular manner (von Schlippe, Schweitzer, 1997).

The basic setting for circular interview is the triad: First the interviewer asks C about the interaction of A and B, then B is asked about A and C, A about B and C. In addition, the interviewees can be invited to comment on any of the previous statements. Thus the interaction pattern and the meanings attached to it by A, B and C are explored in a complete (circular) manner.

This setting, which has originally been designed for family therapy sessions can be varied according to the tasks and purposes: More participants, not all questions have to go around, questions can also be asked concerning people which are not present etc. But the rules of the setting remain very strict. Interviewees can only respond to questions, no discussions are to take place, and questions can only be asked by the interviewer. This one-way communication pattern should enable the interviewer to shift the focus of attention according to his needs, i.e. searching for the information needed to test prior hypothesis.

3.2.2 Circular dialogues

The same principle of generating information within the interview system can also be applied in different settings. In a „Circular dialogue“ the participants are not interviewed, but asked to dialogue in a structured manner: e.g. mutually interviewing and observing each other, handling specific tasks with distributed roles. The facilitator can either remain passive (e.g. time manager) or have an active role (e.g. by intervening to clarify questions or answers, re-focussing the dialogue). As an option mechanisms to arrive at conclusions can be introduced.

The example on the following page shows a Circular dialogue for the introduction of new expert knowledge. Here the participants are organised as a „learning system“ where the resources of different viewpoints and roles are made effective. The participants represent relevant roles / stakeholders and make contributions from different viewpoints.
**Example: “Circular dialogue” with experts** (Baumfeld, 1998)

<table>
<thead>
<tr>
<th>Step</th>
<th>Time (min)</th>
<th>Action</th>
<th>Actors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>Inputs and Discussion about experiences, difficulties and high-lights</td>
<td>A + B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experts give short inputs, Curious ask questions</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>Recommendations by the advisors</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advisors discuss amongst themselves</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>The Experts discuss about what they have been learning</td>
<td>A</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>The “Curious” raise questions that are still open. What should be investigated / deepened?</td>
<td>B</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>Which conclusions are suggested? Further conclusions can be elaborated together</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>Wich conclusions are suggested? Further conclusions can be elaborated together</td>
<td></td>
</tr>
</tbody>
</table>

The facilitator is the time-manager during the process. The Concluders will note the conclusions on a flip chart.

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**Recommendations about the size of the three groups:**

- **Experts**: min. 2 - max. 4
- **Advisers**: max. 5
- **Curious**: no limit
- **Concluders**: 2 members
3.3 Analysing data and making judgements

When structuring and observing have revealed a diversity of answers and opinions, the challenge is to continue working with these differences. Difference and diversity can be used in particular with the analysis and interpretation of the collected data, but can also be helpful in overcoming obstacles and finding joint solutions which are acceptable for all partners.

The following tools are largely derived from the field of systemic management and organisational consulting. Their common denominator is that they go beyond routine practice of working in groups and introduce an element of surprise, which is instrumental in irritating established patterns of interaction. They also mix actors in new ways, thus experimenting with new constellations and deliberately confronting points of view in an unfamiliar but controlled setting.

3.3.1 Systemic interventions

Based on prior hypothesis, the evaluator intervenes in the client system in order to stimulate change (see 2.1). This includes feeding back previously collected information in a purposefully designed setting, and generating additional information from this setting. The subsequent chapters 3.3.2 – 3.3.5 illustrate particular techniques which can be used in these interventions.

Each intervention should be tailored to the specific situation at hand, and four basic dimensions can be taken into account for the design of interventions:

- **Theme/topic** (What?): Problem, topic or function which is to be focused in the intervention. If additional information or thematic inputs are to be provided by the evaluator, they should be presented in a non-authoritative way (e.g. present different opinions, outline alternatives).

- **Time** (When?): Timing is to consider when and with which rhythm to intervene. Different processes require different time-scales and intervals, and this again depends on the system's internal time frame and speed “culture”.

- **Social structure** (Who?): The personnel composition of the system during the intervention is of great influence, e.g. bringing those people together which are involved in a problem or capable to find a solution. There are many possible alternatives (e.g. large groups, groups, teams, pairs, individuals) and care should be taken to consider who to invite for which sessions or meetings.

- **Place/Location** (Where?): Issues related to the location of the intervention are whether it takes place at well known locations (e.g. office, conference room) or elsewhere, if it is to take place indoor or outdoor, what the arrangement of the room or the seating mode will be.

Even though each setting will be unique, one can build on experience via standard designs and prototypes. The Neuwaldegg Consulting Group for instance has assembled over 70 interventions used in their work and described them in detail (Exner, Königswieser, 1998). The interventions are grouped according to the functions they can fulfil, e.g.

- Warming up and closing of sessions
- Diagnosis / recognition of patterns
- Reflection and feed-back
- Problem and conflict solving
- Work on identity and joint visions
3.3.2 Paradox interventions and reframing

These are interventions which are not targeted at change, but rather stimulate internal discussion of controversial positions and the creative search for alternatives within the client system.

Interventions are paradox, when they deliberately work against the client’s expectations. They are particularly useful in situations where resistance against change is very strong or the client system is caught in “rigid loops”, repeated interaction patterns which the client cannot change but considers dysfunctional.

In these cases direct forms if interventions do not work, e.g. trying to convince of the need for change. Instead it is more promising to emphasise exactly the opposite: Don’t change! Such a paradox request, for which the client is not prepared, can lead to new insights, as it makes aware that things can be viewed differently. And even if such an instruction is not carried out, it can sufficiently alter the mental maps of the involved actors (“change starts in the head”).

Often a simple description of existing contradictions can provide enough impetus for joint reflection. But there are additional techniques which can be applied in this direction:

- Positive connotation: By reacting positively on a situation which is described as problematic (“the good in the bad”) a new framework is subtly introduced, which can stimulate reflection. A first step towards changing a situation can be to accept it, but look at it differently.

- Prescribing symptoms: By deliberately ordering to maintain (or consciously observe) a situation considered problematic (“the symptom”), reflections on the underlying causes can be triggered. This can help to move from a search for individual “blame” to one for explanatory patterns and relations.

- Reframing: Stepping out of the prevailing frame of thinking leads to a different view of the situation at hand, which in turn facilitates change. To accept that different logics can co-exist and serve to interpret a given situation, increases the client’s flexibility and analytic capacity.

Example: Reframing through the use of different concepts

When working with administrative departments, their focus on clear separation and responsibilities as a result of bureaucratic structure and thinking can be a great obstacle for co-operation. Using the “Value Chain” concept from Business Process Reengineering (see graph below) can help to put their activities and tasks in a different frame, by:

- Focussing the whole process of e.g. service provision on target clients and rethinking the process from their points of view (needs, problems etc.)

- differentiating activities: Core activities (their output produces benefits for clients) and support activities (which support the delivery of core activities)

- structuring these activities in a logical order along a chain for the production of output

- defining steering activities which are required for effective co-ordination of activities
3.3.3 Analogous techniques

Human communication can take place in two different forms: Digital, where the represented object is given a name, or analogous, where the object is expressed non-verbally through similarities (e.g. pictures). Although these two are complimentary to each other, and messages normally contain a mixture of both, our attention is almost exclusively on digital forms.

But in human relations we rely mainly on analogous communication and whenever the focus of communication is on relations, digital form becomes almost meaningless. This is the reason for using analogous techniques in interventions, as they are better suited to deal with emotions and the relational aspects of communication. The most frequent ones are:

- Stories and metaphors
- Jokes and cartoons
- Pictures and sculptures
- Sketches, pantomimes and role plays

A recently developed technique is Positioning. Social systems are represented through the spatial distribution of people in a room, their positions and relative distance represent relations to each other or with respect to certain topics. This way crucial aspects like proximity, distance or exclusion can be expressed non-verbally and are directly felt by the actors. Positions can easily be changed, therefore this technique is well suited for experimenting with different options and finding new solutions.

3.3.4 Group settings

Variations in group settings facilitates the exchange of ideas and information, as well as working with different points of view. It is an additional element of change and surprise which systemic interventions are based upon. The graph on the following page illustrates a variety of possible settings for medium-sized groups.
**Example: Possible Settings for medium-size Groups** (Baumfeld, 1998)

**Roundabout:**
Groups of participants progress in a set order from station to station. Or pairs continue from pair to pair. Or individuals move from person to person.

**Market:**
The various offers (e.g. topics) are presented openly and can be accessed voluntarily. This way also small groups can shift between offers.

**Exchange groups:**
Instead of long reports from working-groups: Groups are formed by representatives from previous groups (one in each group). Now personalised exchange is possible.

**Pool:**
In the middle of the group 4-6 representatives of subgroups or opinions are discussing. There is an empty chair where additional participants can take place spontaneously.

**Changing pairs:**
For a short time participants form pairs, to discuss or do something together. Then the pairs break up again, a new impulse/task is given and new pairs are formed.

**Avalanche:**
Individuals form pairs, in a next step they form a group of 4, then of 8, then 16 (or even more) people. For each group formation a new task should be foreseen.
3.3.5 Large group interventions

Events which assemble a large number of people in one room are often static affairs with a predominantly passive audience. But large groups also have potential for collective power, where individuals can rapidly become “infected” by positive or negative feelings. Some of the reasons for these phenomena can also be used for interventions (Königswieser / Keil, 2000):

- large groups mobilise feelings and energy
- people want to be seen, be part of a larger entity and sense their place in the organisation
- there is always a latent element of competition and social comparison
- they satisfy the need for rituals and symbols

Large group interventions have first been developed in Change Management projects of large organisations, where they were used to involve as many people as possible, communicate change processes effectively and provide opportunities for collective learning. They are designed to allow for two-way communication despite of the large number of participants, and to provide space for reflection in smaller, more intimate settings. Below are summary descriptions of three of the best known techniques.

- **Open Space**
  
  This setting allows participants to be responsible for and determine the course of an event:
  
  1. In an initial brainstorming session issues are proposed by individuals volunteering to take over responsibility for their treatment
  2. The programme is defined by designating a time slot and break-out room for each issue, and is posted in a Central Marketplace
  3. Participants attend sessions on topics of their interest, they can move freely between groups and can leave whenever they wish
  4. After each session participants return to the Central Marketplace, share their learning or negotiate changes to the next group of sessions.

- **Future Search Conference**
  
  The purpose is to jointly elaborate future strategies by a mixed group within short time:
  
  1. Focus groups representing various interests reflect on the past, by using a time line marked on one of the walls. The main points are pinned along this time-line.
  2. The same groups first discuss the present situation, then the groups jointly elaborate a collective mind-map on another wall. This mind-map is in turn analysed and discussed in the former focus groups, with the aim of establishing priorities and responsibilities.
  3. Mixed groups elaborate ideal scenarios for the future, which are then presented in analogous form (sketches etc.) in plenary. Common ideas are filtered out, they serve as the basis for jointly formulating future visions and goals.
  4. Action programmes to reach these goals are elaborated in focus groups and presented in the final plenary session.

- **Sounding Board**
  
  The objective of this setting is to obtain many-layered feedback on given inputs:
  
  1. Inputs (e.g. interim results) are briefly presented, then discussed in groups using a joint, pre-established set of questions. These groups are small (6 – 8 people), placed on tables distributed throughout the room, each of them should contain people from different hierarchical levels or units.
  2. The key points from these group discussions are presented in plenary session
  3. At the end the initial presenters react on the feedback, and if possible draw conclusions.
LITERATURE


